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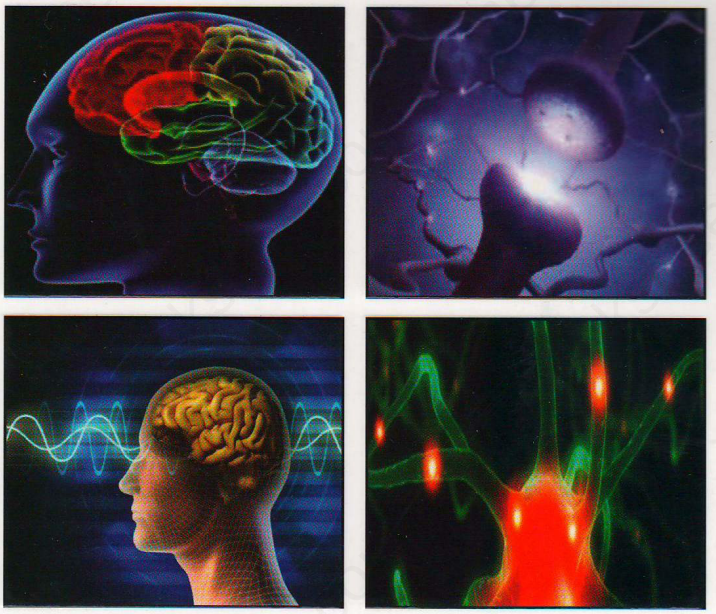
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Praveen Tripathi



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Review of Psychiatry

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Foreword

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Review of Psychiatry

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Foreword

Psychiatry is quite different from mainstream medical specialties and poses unique challenges when the novice medical graduate is attempting to understand these concepts. Psychiatry is also a fast evolving science and the recent introduction of DSM-5 has led to several diagnostic revisions. Most of the textbooks on psychiatry are fairly exhaustive and can be difficult to read for students preparing for entrance exams who are hard-pressed for time.

Keeping these aspects in mind Dr Tripathi has made enthusiastic efforts to compile the exhaustive literature on mental health into a simple format that is highly readable and easy to understand. He has also included MCQs from past examinations for practice and to adapt to the exam questions. I recommend this book as a powerful and time efficient tool to prepare for psychiatry section of postgraduate entrance examinations.

I wish all the readers good luck and congratulate Dr Tripathi for his efforts in writing this book.

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Preface

Psychiatry is a complex subject and students have minimal exposure to psychiatric disorders during their MBBS training. The terminology used in psychiatry is quite different from other medical specialties and makes the subject tough to understand. Most of the students resort to rote memorization and struggle with the conceptual aspects. In this book, an attempt has been made to explain the concepts in a simple language and without using the psychiatry jargons. A large number of examples have been included in the text to explain the concepts and help in learning.

Another important aspect of this book is that it has been fully updated with DSM-5. In DSM-5, a large number of new diagnoses have been introduced and diagnostic criterions of many existing disorders have been changed. All these changes have been incorporated in the book.

This book has been written keeping in mind the needs of students preparing for various postgraduate entrance examinations and MCI screening test. Nowadays, mastery over short subjects has become a key to get a good rank. In most of the exams (including AIIMS, PGI and NEET), at least 5-6 questions are being asked from psychiatry. If students can spare 5-6 days for psychiatry, they would be easily be able to get those questions correct and that will make a real difference in the final ranks achieved.

Finally, a word of advise for the students. If you can keep yourself motivated for the entire duration of preparation, cracking the entrance becomes a child's play. You should remain in regular touch with your seniors and take both tips and inspiration from them. Appearing regularly for mock tests and discussion with peers is a good way of assessing your strengths and weaknesses, it also motivates you to work harder and get better results next time. Remember you need to win many small battles, before you can win a war.

So buckle up, get ready to bring your best to the table, work so hard that you surprise even yourself and achieve what you rightly deserve.

My best wishes and blessings are always with you.

April, 2016

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Acknowledgments

Every endeavor, however big or small needs contribution from many. This book is no exception. A large number of people have contributed directly or indirectly in the completion of this book.

At the outset, I would like to thank my parents who have backed all the decisions, I have ever taken in my life and have supported me even when they did not agree with me. I am thankful to my elder brother, Dr. Anurag Tripathi, who gave me a lot of suggestions while I was writing this book and pushed me to put more and better efforts. I want to convey special thanks to my wife, Dr Priyanka Goyal, for bearing with me for the long months during which this book was written and helping me with the content as well as editing of the book. Without her help, this book would not have seen the light of day.

I am extremely thankful to Dr Apurv Mehra, who brought me into the field of teaching and is like a friend and teacher to me. I am also grateful to Dr Pritesh Singh, who taught me the art of writing a book and who has made important contributions in formatting the book.

I would also like to thank Shri Jitendar P Vij (Group Chairman), Mr Ankit Vij (Group President), Ms Chetna Malhotra Vohra (Associate Director—Content Strategy), Ms Payal Bharti (Project Manager), Mr Arun Sharma (Typesetter), Ms Priyanka Shahi, Mr Pankaj K Singh (Proof Readers), and the production team of Jaypee Brothers Medical Publishers (P) Ltd, New Delhi, India.

Finally, I would like to thank my patients and my students. Both of them have taught me a lot and continue to be my favorite teachers.

Praveen Tripathi

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Chapter

1 Basics

Psychiatry is the branch of medicine which deals with morbid psychological processes. To establish diagnosis of a psychiatric disorder both history and clinical examination are required. The clinical examination in psychiatry, wherein the clinician records the psychiatric signs and symptoms, is known as **Mental Status Examination (MSE)**[Q].

Mental Status Examination

In mental status examination, following areas of mental functioning are assessed:

A. *General appearance and behavior*: The appearance of the patient is described along with any gross abnormalities (such as abnormalities of dressing etc).

B. *Speech*: Various aspects of speech such as rate, tone, volume, spontaneity of speech are described.

C. *Mood and affect*: The terms "affect" and "mood" are both used to describe the emotions or emotional state. **"Affect"**[Q] is the cross sectional emotional state whereas "mood" is the sustained or longitudinal emotional state. For example, if an individual who was extremely sad for last one month, gets extremely and unusually happy for a moment; it can be said that his affect is happy (euphoric), whereas his mood is depressed. The term affect and mood are at times used interchangeably. Affect and mood are further described under the following three subheads:

- *Quality*: It refers to the predominant affective (or mood) state. There can be various disturbances in the quality of mood, common ones include:
  a. *Euphoric mood (elevation of mood)*: Euphoria refers to a state of excessive happiness, without any reason. It is usually seen in mania or hypomania.
  b. *Depressed mood*: Excessive sadness of mood, which is usually seen in depression.
- *Fluctuations*: It refers to the changes in mood/affect. The common disturbances of fluctuations are as follows:
  a. *Labile mood*: Excessive variations in mood without any apparent reason. It is also known as **emotional lability**[Q]. For example, a man starts crying and then starts laughing without any apparent reason. It is usually seen in mania.
  b. *Affective flattening*: Absence of changes in mood irrespective of the situation. In this condition, patient doesn't experience any emotions hence his affect remains the same. For example, a schizophrenic patient would not look happy during festivals and did not appear sad when his mother died. His mood remained the same irrespective of the situation.
- *Appropriateness and congruency*: Appropriateness of affect is described in relation to the social situation. For example, in a funeral, the expected emotional state is sadness. Hence, being sad in a funeral is an appropriate affect. If a man starts laughing and looks extremely happy in a funeral, it would be diagnosed as inappropriate affect. Congruency of mood is described in relation to the thought content of the person. Congruency describes whether the emotional state of person is in sync with his thought/speech or not. For example, if a man is thinking about or talking about the events which led to his mother's death, he is expected to be sad. Hence, appearing sad while talking about mother's death is a congruent affect. If a person, looks very happy and smiles while describing his mothers

death, it would be considered as incongruent mood. It must be stressed that while "appropriateness" of affect is described after comparing the current affect with the expected affect in the given social situation, the congruence is described after comparing the current affect with the expected affect in the context of the patients thoughts.

Few other important disturbances of emotions include:

a. *Alexithymia*: It refers to the inability to understand emotions of others and inability to express emotions of self. Although alexithymia is closely related to affective flattening, **alexithymia**[Q] is "lack of words to describe emotions" rather than absence of emotions.
b. *Anhedonia*: It refers to the loss of capacity to experience pleasure. The patient is unable to enjoy anything in the life.

Neuroanatomical substrate of emotions: **Limbic system**[Q] (which includes hippocampus, amygdala, hypothalamus, cingulate gyrus and related thalamic and cortical areas) is the neural substrate for the emotional experiences. The regulation of emotions is a function of **frontal lobe**[Q].

D. *Perception*: Perception is the receiving of information using one of the sensory modalities (i.e. auditory, visual, tactile, olfactory and gustatory). Two most important disturbances of perception are:

- ***Illusions***[Q]: Illusion is false perception of a real object. For example, a man mistakes a rope for snake in night.
- *Hallucinations*: Hallucination is a false perception in the absence of any object or stimulus. For example, a patient of delirium reported seeing snakes on the ground of his room, when in reality there was nothing there. Hallucinations have the following properties and all these properties must be present to diagnose a perception as hallucination.
  a. Hallucinations occur in the absence of any sensory or perceptual stimulus.
  b. Hallucinations are as vivid (clear or detailed) as true perceptions. It means that the person who experiences hallucinations is able to give a detailed description of what he is experiencing.
  c. Hallucinations are experienced in **outer objective space**[Q]. It means that patients experiences that the source of hallucinations is in the outer world. For example, a patient who is having auditory hallucinations will report that the voices are coming from the wall or from outside the house. (**Pseudohallucinations**[Q] are experienced in the inner subjective space, or originating from within the mind. For example, a patient with auditory pseudohallucinations will report that the voices are originating within his mind and not from outside).
  d. Hallucinations are not under the **willful control**[Q] of the patient. It means that the patient can neither start the hallucinations nor can he stop them.

  Hallucinations can occur in any modality. The most common hallucinations in psychiatric disorders are **auditory hallucinations**[Q]. The most common hallucinations in organic psychiatric disorders (such as delirium) are **visual hallucinations**[Q]. In patients with **temporal lobe epilepsy**[Q] all kinds of hallucinations can be present including olfactory and tactile hallucinations. Tactile hallucinations are also a typical feature of cocaine intoxication.

  Few specific hallucinations:

  a. ***Hypnagogic hallucinations***[Q]: These hallucinations occur while falling asleep or while going to sleep. Since hypnagogic has the word "go" in it, hence its easy to remember that they occur while "going" to sleep. Hypnagogic hallucinations are seen in narcolepsy.
  b. ***Hypnopompic hallucinations***[Q]: These hallucinations occur while getting up from the sleep.
  c. *Reflex hallucinations (**Synesthesia**[Q])*: In reflex hallucinations, stimulus in one sensory modality produces hallucinations in another sensory modality. For example, a patient reports that whenever he sees a white bulb (stimulus in visual modality), he starts hearing voices of god (hallucination in auditory modality). Reflex hallucinations are a feature of **cannabis and LSD**[Q] (and other hallucinogens) **intoxication**.
  d. *Functional hallucination*: Here, stimulus in one sensory modality, produces hallucinations in the same sensory modality. For example, a patient reported that whenever he heard the sound of a ticking clock (stimulus in auditory modality), he would also start hearing voices of god (hallucinations in auditory modality).

E. *Thought (Cognition)*: The terms "thought" and **"cognition"**[Q] are at times used interchangeably, however in a stricter sense cognition is the mental process of acquiring knowledge which includes thoughts but

also experiences and sensations. The thought disturbances are primary in many psychiatric disorders like schizophrenia. Thought and its disturbances can be described under the following subheads.

- *Stream (Flow of thought)*: It refers to the speed with which thoughts follow each other. The disturbances of stream includes:
  a. ***Flight of ideas***[Q]: Here, the thoughts follow each other very rapidly, and connection between different thoughts appears to be due to chance factors or rhyming. It is usually seen in mania. For example, a manic patient when asked about his hometown said "I live in Delhi…my cat has a big belly…..i like to eat Jelly…..lilly lilly lilly". Some authors describe "flight of ideas" as an abnormality of form of thought.
  b. *Inhibition of thinking*: Here thoughts come in mind very slowly and thought progresses with a slow rate.
- *Form of thought*: The form refers to the "organization" of thought or the "association" between the consecutive thoughts. Normally, the thoughts are well organized and there is a connection between various components of a single thought and between the consecutive thoughts. In formal thought disorders, there are disturbance in the organization, associations and connections of the thoughts. The important formal thought disorders include:
  a. *Derailment*: In derailment, the association between two successive thoughts is disturbed. For example, a patient said Jawahar Lal Nehru was the first prime minister of India and he was a congress leader. Sachin Tendulkar scored 100 international hundreds". In this example, there is no link between the first thought about Nehru and second thought about Tendulkar.
  b. ***Loosening of association***[Q]: Here, the connection is lost between components of a single thought. For example, a patient says "I thought that it will rain today, Modi is the current prime minister of India". In this example the phrase before the comma is totally disconnected from the phrase after the comma and hence this represents loosening of association.
  c. *Incoherence*: It is the total lack of organization so that the thought is incomprehensible and does not make any sense. For example, a patient says "India me churchgate pulses cricket computer".
  d. ***Circumstantiality***[Q]: It is a pattern of speech which progresses with inclusion of lots of unnecessary details and goes round and round before reaching the final goal. For example, a medical student was asked about his preferred branch in postgraduation and he replied by saying "Sir, in the first year i was very interested in physiology, however in the second year i started liking pathology. In the third year, i started liking ophthalmology however in the final year i realized that i have a lot of liking for orthopedics too and i liked putting casts and working with POP. I also think that after MBBS one should get married as soon as possible and that noone should have more than two kids…Well..you see i like pediatrics as a subject and want to do my postgraduation in the pediatrics". In this example the thought process progressed with inclusion of lots of irrelevant details however in the end, the goal was reached as student said that he wants to become a pediatrician.
  e. ***Tangentiality***[Q]: In tangentiality, the answer is related to the question in some distant way and the goal of thought is never reached. For example, a patient was asked about his favorite bollywood actor and he replied "Well, you see the hindi movies are mostly hero centric and usually deal with the relationship issues whereas the hollywood movies have lots of action and science fiction. I think the Hindi Film Industry is growing rapidly and its a good medium for entertainment of masses". In this example, the patients answer was distantly related to question, however the exact answer was never given.
  f. *Neologism*: A **neologism**[Q] is coining of a new word, whose derivation cannot be understood. For example, a patient would use the word "tintintapa" for a pen. Neologism is highly suggestive of schizophrenia.
  g. *Word approximations (metonyms)*: Here, old words are used in a new or unconventional way. The meaning will be easily evident, though the word in itself might appear strange. For example, a patient would us the world "time vessel" for watch, and use the word "handshoes" for gloves.
  h. *Perseveration*: It is repetition of the same response, beyond the point of relevance. For

example, a patient was asked the following questions. Q: What is your name. Ans. Mahesh kumar....Q: Where do you live. Ans: Mahesh Kumar.....Q: How many children do you have... A: Mahesh Kumar.

It must be noted that the perseveration is in response to a question and is not spontaneous.

- *Content of thought*: It refers to what person is actually thinking about. Delusion is a disorder of content of thought. It is defined as a false, unshakeable belief that cannot be explained on the basis of persons social and cultural background. The following are the types of delusion:
  a. *Delusion of persecution*: It is the most common type of delusion.The patient believes that someone wants to harm him. For example, a patient claimed that Indian police along with CBI is hatching a conspiracy to kill him.
  b. *Delusion of reference*: The patient believes that events happening around him are somehow related to him. For example, a patient claimed that the tube light of his apartment was flickering as there was a camera fitted inside through which his movements are being recorded.
  c. *Delusion of grandeur or grandiosity*: The patient believes that he has some exceptional identity or power. For example, a patient claimed that he is the reincarnation of Lord Hanuman and that he can carry the mountains on his shoulders.
  d. *Delusion of love (**erotomania**[Q], fantasy lover syndrome)*: Patient may have false belief that someone is in love with them. It is also known as de Clerambault syndrome. For example, a rickshaw puller claimed that Katrina Kaif is in love with him though he admitted that he has never met her.
  e. *Nihilistic delusion (delusion of negation, **Cotard's syndrome**[Q])*: Here, the patient may deny existence of their body, their mind, or the world in general. They may claim that everybody is dead, the world has stopped, etc. The basic theme of delusion is the "end of existence".
  f. *Delusion of infidelity (delusion of jealousy)*: The patient has a false belief that his partner/spouse is having an affair. It is also known as **morbid jealousy** or **Othello syndrome**[Q].
  g. *Delusion of guilt*: Here, the patient may develop a delusion that they are bad or evil person and may claim that they have committed unpardonable sins. It is usually seen in severe depression.

  Bizarre Vs Nonbizarre Delusions

  Bizarre delusions: The term bizarre is used for delusions which are scientifically impossible and culturally implausible (ununderstandable). For example, if a patient says that aliens have stolen his heart, it would be an example of bizarre delusion.

  Nonbizarre delusions: These are delusions which are false but are possible, i.e. they can happen. For example, if a patient develops a delusion that his family members wants to take away his property, it would be an example of nonbizarre delusion, since it is not impossible for a family member to take away property of another family member.
- *Possession of thought*: Normally one experiences that their thoughts belong to themselves and no one else can influence their thinking process, also there is a sense of control over one's thought. In disturbances of possession of thought either the patients experiences that others are tampering with their thoughts or that they have lost control over their thoughts. The disorders of possession include the following:
  a. ***Obsessions***[Q]: Here, a thought comes repeatedly into the mind of patient against his will. The patient recognizes the thought as his own, however is distressed by the repetitive and intrusive nature of the thought. The patient feels that he has lost control over his thoughts.
  b. *Thought alienation*: Here, the patient feels that their thoughts are under control of an outside agency or that others are interfering with their thought process. Thought alienation phenomenon is of following types:
     - ***Thought insertion***: Patient feels that some external agency is inserting foreign thoughts into their mind.
     - ***Thought withdrawal***: Patient experiences that his thoughts are being withdrawn from their mind by an external agency.
     - ***Thought broadcast***: Patient experiences that thoughts are escaping from their minds and other people are able to access them.

F. *Higher mental functions*: In this component of MSE, various higher mental functions like attention, concentration, memory, judgement, abstract thinking and insight are assessed.

CLASSIFICATION

At present, there are two major classificatory systems in psychiatry.

1. *ICD-10 (International classification of diseases, 10th edition)*: It is published by WHO and provides classification for all medical disorders (including psychiatric disorders). The psychiatric disorders have been classified in the **chapter-V (F)**Q of ICD-10.
2. *DSM-5 (Diagnostic and statistical manual of mental disorders)*: It is published by American Psychiatric Association. The fifth edition of DSM was published in 2013.

Psychiatric disorders have been classified in multiple ways. The most important classifications includes organic vs functional psychiatric disorders and psychosis vs neurosis.

Organic vs Functional (Nonorganic) mental disorders: This was the first major classification of psychiatric/mental disorders.

A. *Organic mental disorders*: These disorders are caused by demonstrable disturbances of brain (primary brain disturbances or systemic disturbances which are known to affect brain parenchyma) For example, delirium, dementia.
B. *Functional (Nonorganic) mental disorders*: These disorders do not have any demonstrable disturbance of brain parenchyma. For example, schizophrenia, mania, etc.

This classification is at best arbitrary, since with the advent of science its possible to demonstrate brain parenchyma disturbances even in so called "functional" mental disorders.

Psychoses vs neuroses: The functional disorders can be further classified into psychotic disorders (psychoses) and neurotic disorders (neuroses).

A. *Psychoses*: Psychotic disorders are characterized by **lack of awareness** of **illness (also known as lack of insight)**Q and impaired reality testing (i.e. the patients loses contact with reality and start living in a fantasy world created by their ill minds). For example, schizophrenia, bipolar disorder. Delusions and hallucinations are the prototype psychotic symptoms.
B. *Neuroses*: Neurotic disorders are characterized by awareness of the illness (insight is present) and reality contact is also intact. For example, anxiety disorders, depression.

QUESTIONS AND ANSWERS

QUESTIONS

1. Which of the following are sections of Mental State Examination? *(DNB NEET 2014-15)*

A. Mood and affect
B. Speech and language
C. Cognition
D. All of the above

Affect and Mood

2. A 25-year-old woman complaints of intense depressed mood for last 6 months. She also reports inability to enjoy previously pleasurable activities. This symptom is known as: *(AIIMS Nov 2005)*

A. Anhedonia
B. Avolition
C. Apathy
D. Amotivation

3. Alexithymia is: *(Kerala 2000, DNB 2004)*

A. A feeling of intense rapture
B. Pathological sadness
C. Affective flattening
D. Inability to recognize and describe feelings
E. Inappropriate mood

4. A person who laughs at one minute and cries the next minute without any clear stimulus is said to have: *(AIIMS Nov 2005)*

A. Incongruent affect
B. Euphoria
C. Labile affect
D. Split personality

5. Emotion is controlled by: *(PGI 1997)*

A. Limbic system
B. Frontal lobe
C. Temporal lobe
D. Occipital lobe

Perception

6. Phantom limb is an example of disorder of: *(DNB NEET 2104-15)*

A. Thought
B. Perception
C. Cognition
D. None of the above

7. A patient wanting to scratch for itching in his amputated limb is an example of: *(DNB NEET 2014-15)*
A. Illusion
B. Pseudohallucination
C. Phantom limb hallucination
D. Autoscopic hallucination

8. A patient sees a rope and gets afraid that it is a snake. This sign is known as: *(DNB NEET 2014-15, PGI 2002)*
A. Illusion
B. Hallucination
C. Delusion
D. Depersonalization
E. Derealization

9. A 8-year-old child after a tonsillectomy sees a bear in her room. She screams in fright. A nurse who rushes on switching the light, finds a rug wrapped on an armchair. What child experiences is best described as? *(DNB 2006, Kerala 1997)*
A. Illusion
B. Hallucination
C. Delusion
D. Depersonalization

10. Which statement is not true about hallucinations? *(AIIMS 2009)*
A. It is as vivid as a real perception
B. It occurs in inner subjective space
C. It is independent of will of observer
D. It occurs in the absence of any perceptual stimulus

11. All of the following are features of hallucinations, *except*: *(AI 2003)*
A. It is independent of will of observer
B. Sensory organs are not involved
C. It is as vivid as a real perception
D. It occurs in the absence of any perceptual stimulus

12. Formed visual hallucinations are seen in lesions of: *(PGI 2006, 2000)*
A. Frontal lobe
B. Temporal lobe
C. Occipital lobe
D. Parietal lobe

13. The following is suggestive of an organic cause of behavioral symptoms: *(AI 2002)*
A. Formal thought disorder
B. Auditory hallucinations
C. Delusion of guilt
D. Prominent visual hallucinations

14. When is hypnopompic phenomenon experienced? *(Bihar 2006, DNB 2002)*
A. At the beginning of the sleep
B. At the end of sleep, while getting up
C. After head trauma
D. After convulsions

15. Hallucinations which occur at the "start" of sleep are known as: *(JIPMER 2002, DNB 2005)*
A. Hypnagogic hallucinations
B. Hypnopompic hallucinations
C. Jactatio capitis nocturna
D. Extracampine hallucinations

16. Hallucinations are seen in all *except*: *(MP 1999, DNB 2001)*
A. Schizophrenia
B. Seizures due to intracerebral space occupying lesions
C. Lysergic acid diethyl amide intoxication (LSD intoxication)
D. Anxiety

17. Olfactory hallucinations are seen in: *(PGI May 2011)*
A. Schizophrenia
B. Alzheimer's disease
C. Mesial temporal sclerosis
D. Body dysmorphic disorder
E. Temporal lobe epilepsy

18. Visual hallucinations are seen in: *(PGI Jun 2009)*
A. Hebephrenic schizophrenia
B. Residual schizophrenia
C. Simple schizophrenia
D. Delirium
E. Temporal lobe epilepsy

19. Reflex hallucinations is a morbid variety of: *(AIIMS May 2009, 2011)*
A. Kinesthesia
B. Paresthesia
C. Hyperesthesia
D. Synesthesia

Thought

20. The term "cognition" is used to imply about: *(AI 1997, Jharkhand 2003, DNB 1998)*
A. Affect
B. Perception
C. Thought
D. Speech

21. True about thought is all *except*: *(PGI Feb 2007)*
A. Perseveration is out of context repetition
B. Circumstantiality is over inclusion of irrelevant details while eventually getting back to the original point

C. Verbigeration is senseless repetition
D. Vorbeireden is skirting around the end point but never reaching it
E. Loosening of association is logically connected thoughts with loss of goal.

22. Perseveration is: *(AI 2005)*
A. Persistent and inappropriate repetition of the same thoughts
B. Feeling of distress in a patient with schizophrenia
C. Characteristic of schizophrenia
D. Characteristic of obsessive compulsive disorder

23. In schizophrenia, characteristic feature is: *(PGI 1997)*
A. Formal thought disorder
B. Delusion
C. Hallucination
D. Apathy

24. Loosening of association is an example of: *(AI 2006)*
A. Formal thought disorder
B. Schneider's first rank symptoms
C. Perseveration
D. Concrete thinking

25. Not a disorder of form of thought is: *(AIIMS May 2012)*
A. Tangentiality
B. Derailment
C. Thought block
D. Loosening of association

26. Which of the following is/are thought disorder? *(DNB NEET 2014-15)*
A. Circumstantiality
B. Tangentiality
C. Prolixity
D. All of the above

27. Schizophrenia and depression both have the following features *except*: *(PGI 2002)*
A. Formal thought disorder
B. Social withdrawal
C. Poor personal care
D. Decreased interest in sex
E. Suicidal tendency

28. Delusion is a disorder of: *(DNB NEET 2014-15, AIIMS Nov 2006, AI 2007)*
A. Perception
B. Thought
C. Insight
D. Affect

29. A false belief which is unexplained by reality and is shared by a number of people is: *(AIIMS 2003, 2004 Jipmer 1998)*
A. Illusion
B. Delusion
C. Obsession
D. Superstition

30. The primary delusions are disorder of: *(AI 1999)*
A. Flow of thought
B. Form of thought
C. Content of thought
D. Possession of thought

31. Delusions are not likely to be seen in: *(AI 2012)*
A. Dementia
B. Depression
C. Schizophrenia
D. Conversion disorder

32. Delusions can be seen in all of the following *except*: *(SGPGI 2002, DNB 2001)*
A. OCD
B. Depression
C. Mania
D. Schizophrenia

33. Delusion of persecution can be seen in: *(PGI Jun 2009)*
A. Schizophrenia
B. Delusional disorder
C. Manic episode
D. Melancholic depression

34. Delusion of grandiosity can be seen in: *PGI Nov 2010, May 2011)*
A. Hypomania
B. Paranoid schizophrenia
C. Schizoaffective disorder
D. Kleptomania/Pyromania
E. Cyclothymia

35. Nihilistic ideas are seen in: *(PGI Dec 2008)*
A. Simple schizophrenia
B. Paranoid schizophrenia
C. Cotard's syndrome
D. Depression
E. Body dysmorphic disorder

36. A 25-year-old university student had a fight with the neighbouring boy. On the next day while out, he started feeling that two men in police uniform were observing his movements. When he reached home in the evening he was frightened and told his family members that police was after him and would arrest him. Despite reassurances by family members, he remained afraid that he is about to

be arrested. The history is suggestive of which psychiatric sign/symptom: *(AIIMS Nov 2003)*
A. Delusion of persecution
B. Delusion of reference
C. Somatic passivity
D. Thought insertion

37. A man had a fight with his neighbor. The next day he started feeling that police is following him and his brain is being controlled by radio waves by his neighbor. The history is suggestive of which psychiatric sign/symptom: *(AIIMS 1999)*
A. Thought insertion
B. Somatic passivity
C. Delusion of persecution
D. Obsession

38. Healthy thinking includes all of the following *except*: *(AIIMS 2011)*
A. Continuity B. Constancy
C. Organization D. Clarity

Insight

39. The awareness regarding the disease in mental status examination is known as: *(AIIMS Nov 2012, May 2013)*
A. Insight B. Orientation
C. Judgment D. Rapport

40. Impaired insight is found in: *(PGI 1997)*
A. Acute psychosis
B. Schizophrenia
C. Anxiety disorder
D. Obsessive compulsive disorder

41. If a person is asked, "what will he do if he sees a house on fire"? Then what is being tested in that person? *(DNB NEET 2014-15)*
A. Social Judgment B. Test Judgment
C. Response Judgment D. None

ANSWERS

1. D. All of the above
2. A. Anhedonia. Anhedonia is seen in both depression as well as schizophrenia.
3. D. Inability to recognize and describe feelings.
4. C. Labile affect.
5. B. Frontal lobe. The neuroanatomical substrate for generation of emotions is limbic system however the regulation/control of emotions is a function of frontal lobe.
6. B. Perception. In phantom limb, the patient feels sensations in the amputated limb. Hence, its a disorder of perception.
7. C. Phantom limb hallucination. Since, patient experiences sensation in the absence of any stimulus, it is a hallucination. In autoscopic hallucination, patient sees himself in the mirror and feels that "he" is the "image" i.e. what he is seeing is not only an image but him.
8. A. Illusion.
9. A. Illusion.
   Illusion is false perception of a real object.
10. B. It occurs in inner subjective space. Hallucinations occur in outer and objective space; pseudohallucinations occur in inner and subjective space.
11. None > B.
    All the statements are correct. However, if one has to chose, the best answer would be B (sensory organs are not involved) as rest three options form the criterion of hallucinations.
12. B. Temporal lobe. The lesions of temporal lobe can cause all types of hallucinations and formed visual hallucinations (elaborate visual hallucinations) should raise a strong doubt of an organic cause, specifically a temporal lobe pathology.
13. D. Prominent visual hallucinations. The presence of prominent visual hallucinations is a strong pointer towards an organic cause (i.e. a disturbance of brain parenchyma such as tumors).
14. B. At the end of sleep. While getting up.
15. A. Hypnagogic hallucinations. These occur while "going" to sleep. Jactatio capitis nocturna, or rhythmic movement disorder is a neurological disorder characterized by involuntary movements, usually of head and neck, before and during the sleep.
16. D. Anxiety.
17. A, B, C, E.
    Olfactory hallucinations can be seen in temporal lobe epi-lepsy, medial temporal sclerosis (which is a common cause of epilepsy). Though rare, olfactory hallucinations can also be present in schizophrenia and Alzheimer's disease.
18. A, D, E.
    Visual hallucinations are the most common type of hallucinations in delirium. Temporal lobe epilepsy can present with all types of hallucinations including visual hallucinations. In hebephrenic schizophrenia, the primary symptom is

disorganized behavior and formal though disorders however hallucinations can also be seen.

19. D. Synesthesia.
20. C. Thought.
21. E. Loosening of association is logically connected thoughts with loss of goal. In loosening of association, the connec-tions between the thought is lost. The rest of the statements are true. Verbigeration is a senseless repetition of one or several sentences or phrases. For example, a patient continued to repeat the following sentences for hours "Life is great. The lord is great. Summer will come soon" Its an example of verbigeration. Vorbeireden or vorbeigehen is seen in Ganser's syndrome (described in later chapters) and is another name for approximate answers in which patient reaches close to the right answer, but never gives the right answer.
22. A. Persistent and inappropriate repetition of the same thoughts.
23. A. Formal thought disorders are characteristic abnormalities in schizophrenia. In schizophrenia, the abnormalities of affect, perception, motor system as well as thought are present, however the characteristic abnormality in schizophrenia is that of thought, and more specifically the form of thought (known as formal thought disorder).
24. A. Formal thought disorder.
25. C. Thought block.
26. D. All of the above. Prolixity is a milder form of "flight of ideas". As mentioned in the text, flight of ideas can be considered as both a disorder of stream of thought and form of thought.
27. A. Formal thought disorder is seen only in schizophrenia and not in depression. Rest all options can be present in either of the illnesses.
28. B. Thought. Delusion is a disorder of content of thought.
29. D. Superstition. There are many beliefs which are false and are shared by whole communities e.g. black magic, witches etc. These beliefs are considered as superstitions. In comparison, delusions are not shared by members of the same sociocultural background. For example, if a villager starts claiming that he is lord hanuman, no one in his village will share his belief.
30. C. Content of thought.
31. D. Conversion disorder. Conversion disorder is a neurotic disorder (described in later chapters). Delusion is not a feature of conversion disorder.
32. None > A.
    Delusion can be seen in schizophrenia, mania, depression as well as OCD. However the best answer here would be OCD, as delusions are rarely seen in OCD.
33. A, B, C, D.
    Delusions can be seen in all these disorders. Melancholic depression is usually seen in elderlies.
34. B, C.
    Delusion of grandiosity can be seen in paranoid schizophrenia and schizoaffective disorders. Delusion of grandiosity can be seen in mania but not in hypomania.
35. B, C, D.
    Nihilistic delusions can be seen in paranoid schizophrenia, Cotard's syndrome and depression.
36. A. Delusion of persecution.
37. C. Delusion of persecution. Here, in the question the history for delusion of persecution (i.e police is following) is clear. The second half where patient feels that his mind is being controlled by radio waves is suggestive of possible though alienation phenomenon but we have not been provided with any further details.
38. D. Clarity. Healthy thinking has three characteristics (1) Continuity (2) Organization and (3) Constancy.
39. A. Insight
40. A, B.
    Only first two options are psychotic illnesses in which insight is impaired.
41. B. Test Judgment. In mental status examination, the judgment of the patient is also described. Patient is given hypothetical scenarios such as "you see that a house is on fire" or "you find a letter lying on the road" and is asked "what will you do". This is called "test judgment" as patient's judgment is being tested in a hypothetical scenario. There are other forms of judgment like "social judgment" which describes whether a person is able to interact socially in an appropriate manner. Finally, in "personal judgment", patient is asked about his future plans and it is assessed whether he has a logical plan for his future or not.

Chapter

2 Schizophrenia Spectrum and Other Psychotic Disorders

Schizophrenia is the prototype of psychotic disorders. It is one of the most common serious mental disorders.

HISTORY

Emil Kraepelin

Kraepelin *classified psychiatric illnesses into two clinical types*: **Dementia Praecox**[Q] and **Manic Depressive Illness**[Q]. The basis of this classification is the course of illness and the cognitive decline.

Dementia Praecox is characterized by a **chronic and deteriorating course** along with **gradual decline of cognitive functions** (i.e. gradual decline of memory, attention and goal directed behavior). The term "dementia" was used to indicate gradual decline in cognitive functions and the term "praecox' was added since the onset of illness was in young age (praecox means early onset).

In contrast Manic Depressive illness is characterized by **distinct**[Q] **episodes of illness alternating with period of normal functioning**. Also, there is **no cognitive decline**.

Eugen Bleuler

Bleuler **coined** the term **"Schizophrenia"**[Q], which replaced dementia praecox in scientific literature. Bleuler proposed four symptoms which he called as **fundamental (or primary) symptoms of schizophrenia**. These symptoms are also known as 4 **A's of Bleuler**[Q]. They include:

A. *Autistic thinking and behavior (Autism)*: Excessive fantasy thinking which is irrational and withdrawn behavior.
B. *Ambivalence*: Marked inability to take a decision.
C. *Affect disturbances*: Disturbances of emotions such as inappropriate affect.
D. *Association disturbances*: Disturbances of association of thoughts such as formal thought disorders.

Kurt Schneider

Schneider described a group of symptoms, popularly known as **Schneiderian First Rank Symptoms (SFRS)**[Q] which were frequently seen in patients of schizophrenia and were characteristic of the illness. It must be however remembered that these symptoms can also be present in other illnesses and hence are not specific or pathognomonic of schizophrenia. There are 11 Schneiderian First Rank Symptoms.

A. *Three thought phenomenon*: These three together are known as thought alienation phenomenon in which patient feels as if some one is tampering with his mind and thoughts. The thought alienation includes the following:
   - **Thought insertion** (patient reports that someone is putting thoughts in his mind)
   - **Thought withdrawal** (patient experiences that thoughts are being taken out of his mind)
   - **Thought broadcast** (patient experiences that thoughts are leaving his mind and that others are able to access his thoughts, e.g. patient would say that "everybody understands my thoughts, though I never say anything".
B. *Three made phenomenon*: Here the patient experiences that his emotions, actions and drives are being influenced by others. It includes the following:
   - *Made volition*: The patient experiences that his actions are being controlled by an external agency

and not by himself. For example, a patient would repeatedly put his hand in the fan, and on asking the reason reported, "I don't want to do it myself but I am being controlled by aliens who can manipulate my actions, I am a robot for them and they have my remote control".

- *Made affect*: The patient experiences that someone is changing his affect (emotions). For example, a patient reported "at times I start laughing loudly and at times I cry. The neighbours control my emotions, they can change it whenever they want to. I feel helpless".
- *Made impulses*: The patient experiences that someone is putting certain "drives" in his mind. For example, a patient suddenly threw his coffee mug onto a nurse. On asking about it he reported "a sudden impulse came over me, this impulse was sent by CBI officers who wanted me to throw the mug. I tried resisting the impulse, but could not control it".

C. *Three auditory hallucinations:*

- *Voices arguing or discussing*: The patient reports hearing of two or more voices which argue or discuss about the patient. The patient is usually referred to in third person (hence also called **third person auditory hallucinations**[Q]). For example, the first voice would say "he is a strange man, he doesn't have any good qualities". The second voice would respond "yes, also look how fat he has become". In this example the patient is hearing two voices and the voices are using the word "he" to refer to the patient, hence patient is being referred to in third person.
- *Voices commenting on patient's action*: Here, the patient hears voices which give a running commentary on the patient's activities. For example, a patient who was working in the kitchen heard the following voice "she has peeled the potato and now she is about to switch on the gas. Now, she has started to wash the potatoes". The voice usually refers to the patient in third person, hence this can again be an example of third person auditory hallucinations.
- *Audible thoughts*: Here the patients hears a voice, which would say aloud whatever patient would think. For example, a patient had a thought that "I will have dinner at a restaurant tonight". Immediately he heard a voice of a middle aged women who said "I will have dinner at a restaurant tonight". The German word "**Gedankenlautwerden**" or the french word "**echo de pensees**" is occasionally used to describe these audible thoughts.

D. *Somatic passivity*: In somatic passivity, patient experiences tactile or visceral hallucinations which he believes are being imposed by some external agent. For example, a patient reported that he feels intense burning sensation inside his right knee and claimed that it is because of UV rays sent by FBI agents from New York".

E. *Delusional perception*: In Delusional perception, a delusion is attached to a normal perception. For example, a patient of schizophrenia looked at the ceiling fan and immediately understood that the "all the people in the city consider him a homosexual". In this example there was a normal perception in the first step (i.e. the patient saw a ceiling fan) and in the second step a delusion was attached to this normal perception (i.e. the delusion that everybody in city considers patient a homosexual). Delusional perception is a type of "**primary delusion**"[Q]. Primary delusions are those delusions which arise directly as a result of morbid psychological processes whereas secondary delusions develop secondarily to some other psychopathological phenomenon. For example, a patient who had continuous auditory hallucinations of a voice which said "you will be killed", started believing that "somebody wants to harm me". Now, this "delusion of persecution" which developed is a secondary delusion as it developed secondarily to the auditory hallucinations.

EPIDEMIOLOGY

The lifetime prevalence of schizophrenia is **1%** whereas the point prevalence is **0.5–1%**. The incidence rate is **0.15–0.25 per thousand**.

A. *Prevalence in specific population*: Schizophrenia has **high heritability**[Q]. The prevalence in general population is 1% however in relatives of patients, the rate is higher. The following table mentions the rates for specific population groups.

The usual age of onset of schizophrenia is **adolescence**[Q] **and young adulthood**. When the onset occurs after age of **45 years**, the disorder is called as **late-onset schizophrenia**[Q].

It is equally prevalent in men and women, however the onset is earlier in men.

Table 1: Prevalence of Schizophrenia in specific populations.

- General: 1%
- Non twin sibling of a schizophrenia patient: 8%
- Dizygotic twin of a schizophrenic patient: 12%
- Monozygotic twin of a schizophrenic patient: 47%
- Child with one parent with schizophrenia: 12%
- Child with both parents with schizophrenia: 40%

Schizophrenia is more prevalent in lower socioeconomic status. It was earlier believed that different body types were related to different personalities and also had different vulnerability to some disorders. Three types of body types were described: **asthenic (thin and weak)**, **athletic (muscular)** and **pyknic (short and fat)**. The **asthenic**[Q] and to a lesser extent athletic persons were believed to be predisposed for development of **schizophrenia** whereas the **pyknic** were believed to be predisposed to manic depressive illness (**bipolar disorder**).

ETIOLOGY AND PATHOGENESIS

A. *Genetic factors*:
- Schizophrenia has a genetic contribution as reflected by higher monozygotic concordance rate than dizygotic concordance rate. Several genes appear to make a contribution to schizophrenia and nine linkage sites have been identified: 1q, 5q, 6p, 6q, 8p, 10p, 13q, 15q and 22q.
- Several candidate genes contributing to schizophrenia have been identified, and they include α-7 nicotinic receptor, DISC 1 (Disrupted in schizophrenia), COMT (catechol-o-methyl transferase), NRG 1 (Neuregulin 1), GRM-3 (Glutamate receptor metabotropic), RGS-4 (Regulator of G protein signalling) and DAOA (or G-72) (D-Amino acid oxidase activator).

B. *Biochemical factors:*
- *Dopamine hypothesis*: This hypothesis proposes that **excess** of **dopaminergic activity**[Q] is responsible for schizophrenia.
- *Serotonin*: Currently, along with dopamine, an excess of serotonin is also considered to be responsible for symptoms of schizophrenia.
- Other neurotransmitters like GABA, glutamate, norepinephrine, acetylcholine, nicotine have also been implicated in pathogenesis of schizophrenia.

C. *Neuropathological factors*: The neuropathology of schizophrenia is still not clear. Abnormalities have been found in various structures, such as:
- *Cerebral ventricles*: Reduction in cortical gray matter volume and enlargement of lateral and third ventricles has been consistently observed.
- *Limbic system*: Abnormalities in limbic system components such as hippocampus (smaller in size and functionally abnormal), amygdala (smaller size) and parahippocampal gyrus (smaller size) have been observed.
- *Prefrontal cortex*: Anatomical abnormalities have been found.
- *Thalamus*: Neuronal loss especially in medial dorsal nucleus of thalamus.
- *Basal ganglia and cerebellum*: Abnormalities have been reported without any conclusive proof.

SYMPTOMS

The symptoms of schizophrenia can be divided into various symptom complexes, described as follows:

A. *Positive symptoms (or psychotic symptoms)*: The two positive symptoms include **delusions** and **hallucinations**. They respond **well to medications** and the presence of positive symptoms is **a good prognostic factor**[Q] in schizophrenia.

> In DSM-4, the presence of bizarre delusions was considered enough to satisfy the Criterion A for schizophrenia, however in DSM-5, the concept of bizarre delusions has been removed and it no longer carries any special diagnostic significance.

- *Delusions*: The most common delusion in schizophrenia is delusion of persecution. A category of delusion that holds special significance in schizophrenia is the so called **"bizarre delusions"**. Bizarre delusions are those that are considered **physically impossible** and **culturally implausible** (or ununderstandable). For example, "a patient claimed that he has been sent by aliens from mars and his purpose is to evaporate all the water from earth and make it dry". This patient is having a bizarre delusion as his belief is both impossible and ununderstandable.
- *Hallucinations*: The most common hallucinations in schizophrenia are **auditory hallucinations**[Q]. Visual hallucinations are the second most common, however the presence of visual hallucination should always raise the suspicion of an organic mental disorder.

- The positive symptoms of schizophrenia are due to **dopamine excess** in **mesolimbic tract (neural pathway from ventral segmental area to nucleus accumbens)**[Q].

B. *Negative symptoms*: Negative symptoms represent "loss of normal functions" in patients with schizophrenia. These symptoms **respond poorly to medications** and their presence is **a bad prognostic factor**[Q] in schizophrenia. Following are the negative symptoms:

- *Avolition*: Loss of will or drive to indulge in goal directed activities (such as grooming and hygiene, education and occupational activities).
- *Apathy*: Loss of concern for an idea or task or results. For example, a student who had developed schizophrenia failed in exams. However he appeared unconcerned with his results.
- *Anhedonia*: Loss of ability to derive pleasure from activities or relationships.
- *Asociality*: Indifference to social relationships and decrease in the drive to socialize.
- *Affective flattening (or blunting)*: Inability of patient to under- stand emotions of others and inability to express own emotions.
- *Alogia*: Decrease in verbal communication.

The negative symptoms are due to decreased dopamine activity in **mesocortical pathway** (neural pathway from ventral segmental area to prefrontal cortex).

C. *Disorganization symptoms*: This symptom complex includes the following symptoms:

- *Formal thought disorder*: These are the disturbances in the form of thought characterized by loss of organization of thought.
- *Disorganized behavior*: It is the odd and **inappropriate behavior** which may break the social norms. For example, a hospitalized schizophrenic patient would masturbate in front of the nursing staff, another patient of schizophrenia would wear sweaters and coats in hot summer season.
- *Inappropriate affect*: Affect which is not in sync with the social situation.

D. *Motor symptoms (catatonic symptoms)*: The term "**catatonia**" was given by **Karl Kahlbaum**[Q] who described these motor symptoms for the first time. These symptoms are sometimes described along with disorganization symptoms. For more clarity, they have been described separately here. These include:

- *Stupor*: **Extreme hypoactivity** or **immobility**[Q] and minimal responsiveness to stimuli.
- *Excitement*: Extreme hyperactivity which is usually non goal directed (i.e. the patient is very active but doesn't do any meaningful work).
- *Posturing/catalepsy*: Spontaneous maintenance of posture for long periods of time.
- *Waxy flexibility*: When examiner makes a passive movement on patient, there is a feeling of plastic resistance which resembles bending of a soft wax candle.
- *Automatic obedience*: Excessive cooperation with examiner's commands despite unpleasant consequences. For example, a patient kept on protruding his tongue in response to examiner's commands, despite the fact that his tongue would be pricked by a pin everytime he protruded it.
- *Echolalia*: Mimicking of **examiner's speech**.
- *Echopraxia*: Mimicking of **examiner's movements**.
- *Negativism*: Patient refuses to accept examiner's instructions or any attempts to move him.
- ***Grimacing***[Q]: **Maintenance of odd facial expressions**.
- *Stereotypy*: Spontaneous repetition of **odd**, **purposeless movements**. For example, making strange movements of fingers repeatedly[Q].
- ***Gegenhalten***: Resistance to passive movement, which is directly proportional to the strength of force applied.
- *Mannerisms*: Spontaneous repetition of **odd**, **purposeful movements**. For example, repeatedly saluting the passerby.
- *Perseveration*: It is an induced movement which is senselessly repeated. For example, A patient takes his tongue out and in, when asked however then keeps on repeating the out and in movement , even when he is no longer asked. It must be noted that perseveration occurs in response to an instruction, whereas stereotypy and mannerisms are spontaneous. Perseveration is also a sign of brain damage (**organic brain disorders**)[Q].
- *Ambitendency*: Inability to decide the desired motor movement. For example, when offered a hand for handshake, patient may repeatedly bring his hand forward and backward as he is not able to decide whether he wants to shake the hand or not. It is **ambivalence in motor movements**[Q].

DIAGNOSIS

According to DSM-5, two or more of the following symptoms should be present for a duration of 1 month period and at least one of these must be either (1), (2) or (3)

1. Delusions
2. Hallucinations
3. Disorganized speech (or formal thought disorder)
4. Disorganized or catatonic behavior
5. Negative symptoms.

The total duration of illness should be at least 6 months, and the 6 months period must include at least one month of above mentioned symptoms.

The ICD-10 also uses similar criterion for diagnosis of schizophrenia however the total duration of symptoms should be more than **one month** unlike DSM-5 which requires a total duration more than **six months**.

> DSM-5 Update: In DSM-4, only one of the above symptoms was required if the delusions were bizarre or hallucinations were one of schneiderian first rank symptoms (either voices discussing about the patient or voices giving a running commentary). However in DSM-5 this special attribution to bizarre delusions and schneiderian auditory hallucinations has been removed.

Types

According to ICD-10, the following are the types of schizophrenia:

A. *Paranoid schizophrenia*: This type is dominated by hallucinations and delusions. This is the **most common type** of schizophrenia. It has a **late onset** and a **good prognosis**[Q]. The **personality** is **usually preserved** (the person is able to maintain daily activities and social interaction is normal).

B. *Catatonic schizophrenia*: This type is dominated by catatonic (motor) symptoms. It has the **best prognosis** of all types. The first line treatment for catatonic schizophrenia includes **intravenous lorazepam** and **electroconvulsive therapy**.

C. *Hebephrenic (disorganized) schizophrenia*: This type is dominated by prominent disorganization symptoms and negative symptoms. It has an **early onset** and **bad prognosis**. There is **severe deterioration of personality** (patient is not able to maintain hygiene, social interaction is inappropriate, odd behaviors are present).

D. *Undifferentiated schizophrenia*: The schizophrenia not conforming to any of the above subtypes or exhibiting features of more than one of them.

E. *Residual schizophrenia*: Residual schizophrenia is characterized by progression from an early stage (with prominent delusions and hallucinations) to a later stage where the delusions and hallucinations have become minimal and mostly negative symptoms are present.

F. *Simple schizophrenia*: There are prominent negative symptoms without any history of positive symptoms like delusion and hallucinations. It has the **worst prognosis**.

> DSM-5 Update: The DSM-4 described multiple subtypes of schizophrenia (like paranoid, catatonic, disorganized, catatonic, undifferentiated, residual). The DSM-5 has eliminated all of them and does not describe any subtypes.

G. *Post schizophrenic depression*: A depressive episode which develops after the resolution of schizophrenic symptoms. This disorder is associated with an **increased risk of suicide**.

Other Classifications

Apart from ICD-10 and DSM-5, various other classifications have been proposed.

A. TJ Crow divided schizophrenia into two subtypes, namely Type I and Type II schizophrenia:
   - *Type I*: Mostly **positive symptoms** with **normal ventricles**, **good response to medications** and **better prognosis**.
   - *Type II*: Mostly **negative symptoms** with **dilated ventricles**, **poor response** to medications and **poor prognosis**.

> Substances which can cause schizophrenia like symptoms: Amphetamines, cocaine, phencyclidine and other hallucinogens, cannabis.

B. ***Pfopf schizophrenia***: Schizophrenia in a patient with mental retardation.

C. ***Van Gogh syndrome***: Self mutilation (injuring self) occurring in schizophrenia has also been called **Van Gogh syndrome**.

TREATMENT

Antipsychotics (also known as neuroleptics) are the mainstay of treatment for psychotic disorders like schizophrenia, schizoaffective disorders, delusional disorders and others. Antipsychotics have been divided into two classes: (1) Typical antipsychotics and (2) Atypical antipsychotics

1. *Typical antipsychotics or first generation antipsychotics or dopamine receptor antagonists (DRAs)*: These

drugs mainly act through dopamine, **D2 receptor antagonism**. They were the first antipsychotics that were used in the clinical practice. They are **effective** against **positive symptoms** but have **minimal effect** on **negative symptoms**. The therapeutic effect of improvement in psychotic symptoms is mediated by D2 receptor antagonism in mesolimbic tract. The typical antipsychotics can further be classified according to their chemical groups, as described below:

- *Phenothiazines*: Chlorpromazine, Thioridazine, Trifluoperazine, Prochlorperazine, Triflupromazine, Fluphenazine, Perphenazine
- *Thioxanthenes*: Thiothixene, flupenthixol
- *Butyrophenones*: Haloperidol, droperidol, penfluridol
- *Miscellaneous*: Pimozide, loxapine, molindone.

The typical antipsychotics can further be classified as **low potency (like chlorpromazine, thioridazine)** and **high potency (like haloperidol and fluphenazine)**. Apart from differing in potency, the low potency and high potency antipsychotics also differ in their side effects profile. The common side effects of typical antipsychotics are as follows:

A. *Movement disorders*: The antipsychotics can cause various movement disorders, which collectively are often referred as **extrapyramidal symptoms** (or **extrapyramidal side effects**). These side effects are caused by blockade of dopamine receptors in **nigrostriatal tract** (neural pathway from substantia nigra to striatum). The movement disorders are **more commonly** seen with typical antipsychotics in comparison to atypical antipsychotics and amongst typical antipsychotics, high potency typical antipsychotics are **more likely to** cause this side effect. The movement disorders can be of the following types:

- *Acute dystonia*: It is the **earliest side effect**[Q] of antipsychotics and can be seen within minutes of receiving an injectable antipsychotic (also with oral antipsychotic). It is characterized by **sudden contraction** of a muscle group and can result in symptoms like **torticollis**[Q], trismus (contraction of jaw muscles),[Q] **deviation of eye balls** (oculogyric crisis due to contraction of extraocular muscles), laryngospasm, etc. The management includes immediate administration of parenteral **anticholinergics**[Q] like benztropine, promethazine or **diphenhydramine**[Q]. To prevent acute dystonia, prophylactic use of oral anticholinergics is suggested while prescribing typical antipsychotics.
- *Acute akathisia*: It is the **commonest side** effect of antipsychotics and is characterized by an **inner sense of restlessness** along with **objective**, **observable movements** such as **fidgeting**[Q] of legs, **pacing around**, **inability to sit** or **stand** in one place for a long time. The treatment options include β **blockers**[Q] such as propranolol (**drug of choice**), **anticholinergics** and **benzodiazepines**. The antipsychotic can also be changed to a second generation or low potency first generation antipsychotics, which have lesser incidence of akathisia.
- *Drug induced parkinsonism*: It is characterized by the triad of rigidity, bradykinesia and resting tremors. The treatment options include use of anticholinergics or change of antipsychotics to second generation or low potency first generation antipsychotics. The dose reduction can also be tried. Often, use of prophylactic anticholinergics prevents the development of drug induced parkinsonism.
- *Tardive dyskinesia*: The term "tardive" refers to features which develop after prolonged exposure. Tardive dyskinesia develops after **long-term** treatment with antipsychotics and can present as involuntary movements of the **tongue** (e.g. twisting, protrusion), **jaw** (e.g. chewing), **lips** (e.g. smacking, puckering), trunk or extremities. Patient may also have rapid, jerky movements (choreiform movements) or slow, sinusoid movements (athetoid movements). The management usually includes shifting to a second generation medication.
- *Neuroleptic malignant syndrome*: It is a fatal side effect of antipsychotic use. It is characterized by **muscle rigidity**, **elevated temperature (greater than 38°C)**, and **increased CPK (creatine phosphokinase) levels**. The other symptoms include diaphoresis, tremors, confusion, autonomic disturbances, liver enzyme elevation and **leukocytosis**. The pathophysiology involves D2 antagonism at various levels. The D2 receptors blockade in corpus striatum causes muscle contraction and rigidity that initiates heat generation, whereas blockade of dopamine receptors in hypothalamus interferes with heat regulation. The autonomic disturbances are caused by dopamine blockade of spinal neurons. The increased CPK indicates muscle injury. The early recognition of symptoms and prompt

withdrawal of antipsychotics is of paramount importance, otherwise the continuing muscle damage can cause **myoglobinuria** and **renal failure**. The treatment includes skeletal muscle relaxants like **dantrolene**[Q], dopamine agonists such as amantadine and bromocriptine are also useful. Supportive measures including adequate hydration are also important in the management. When drug treatment with antipsychotics is restarted, second generation antipsychotics should be used.

B. *Endocrine side effects*: The blockage of dopamine receptors in **tuberoinfundibular tract** results in **hyperprolactinemia** (remember dopamine inhibits prolactin secretion and hence dopamine blockade causes hyperprolactinemia) and can cause galactorrhea, menstrual disturbances in females and impotence in males.

C. Sedation, orthostatic hypotension and anticholinergic side effects are usually see with low potency typical antipsychotics.

2. *Atypical antipsychotics or second generation antipsychotics or serotonin dopamine antagonists*: These drugs act through **anta- gonism** of **5HT 2 receptors** as well of **D2 receptors**. These drugs have a higher ratio of 5 HT2 to D2 blockade, in contrast the typical antipsychotics primarily act on D2 receptors. Due to lesser D2 blockade, atypical antipsychotics have lesser risk of causing extrapyramidal side effects as well as hyperprolactinemia. Atypical antipsychotics are effective in treatment of **both** positive and negative symptoms. The following drugs are classified as atypical antipsychotics:
   - Clozapine
   - Olanzapine
   - Risperidone
   - Paliperidone
   - Iloperidone
   - Quetiapine
   - Ziprasidone
   - Aripiprazole
   - Sertindole
   - Zotepine
   - Lurasidone
   - Asenapine
   - Amisulpride

The side effect profile of atypical antipsychotics is as follows:

A. *Movement disorders*: Atypical antipsychotics can cause all kind of extrapyramidal side effects described earlier, however the incidence is lesser in comparison to the typical antipsychotics.

B. *Endocrine side effects*: The incidence of hyperprolactinemia is also lesser with atypical antipsychotics (except risperidone and amisulpride which have a higher incidence).

C. Weight gain and increased risk of dyslipidemia, diabetes and cardiovascular disease is more commonly seen with atypical antipsychotics in comparison to typical antipsychotics.

D. Other side effects include sedation, **QTc prolongation (especially with ziprasidone)** and seizures.

Clozapine

It was the first atypical antipsychotic to be synthesized. Clozapine is the **drug of choice** in **treatment resistance schizophrenia**. Clozapine is a unique drug as unlike other antipsychotics, it has a relatively **low affinity for D2 receptors**. This low affinity for D2 receptor explains lack of extrapyramidal side effects on clozapine. Clozapine has a **strong affinity for D4 receptors** and also acts as an antagonist at 5 HT2A, D1, D3 and α (alpha) adrenergic receptors. The lack of extrapyramidal symptoms, makes clozapine a **preferred antipsychotic** in patients who are intolerant to other antipsychotics because of extrapyramidal side effects including tardive dyskinesia.

Side effects: The common side effects of clozapine include sedation, syncope, hypotension, tachycardia, nausea and vomiting. Other side effects include weight gain (**clozapine causes highest** weight gain **amongst all antipsychotics**), constipation, anticholinergic side effects. A particularly problematic side effect is **sialorrhea** or hypersalivation. Clozapine can also cause life threatening side effects which include **agranulocytosis, seizures and myocarditis**. In view of possibility of agranulocytosis, during the first six months of clozapine treatment, WBC and neutrophil counts should be measured every week. Also, if during the therapy, **WBC counts fall below 3000/mm^3** or neutrophil counts fall below **1500/mm^3**, the clozapine therapy should be stopped. The agranulocytosis and myocarditis are dose independent side effects of clozapine whereas seizures are **dose dependent**[Q] (seen only at higher dosages).

The only contraindication to clozapine use is a **WBC count of less than 3500/dL** at the time of starting clozapine, a history of agranulocytosis during clozapine treatment or use of other drug that is known to suppress the

bone marrow (e.g clozapine and carbamazepine cannot be given together as both are bone marrow suppressants.

Specific Points about Antipsychotics

A. *Long acting injectable antipsychotics (Depot antipsychotics)*: In patients who have **poor compliance**[Q] with medications (i.e who refuse to take medications) long acting injectable antipsychotics can be used. The patients typically receives the **intramuscular injections** of antipsychotics once a month or once a fortnight. Long acting injectable preparations are available for following antipsychotics:
   - Flupenthixol
   - Fluphenazine
   - Haloperidol
   - Pipotiazine
   - Zuclopenthixol
   - Risperidone
   - Olanzapine
   - Paliperidone
   - Aripiprazole

B. Thioridazine can cause irreversible **retinal pigmentation**[Q]. Thioridazine can also cause **cardiac arrhythmias**[Q] (prolongation of QT interval). It is also the drug with **least extrapyramidal side effects** amongst typical antipsychotics, overall clozapine is the antipsychotic with least extrapyramidal side effect.

C. Chlorpromazine can cause **corneal** and **lenticular deposits**[Q].

D. Penfluridol is the **longest acting antipsychotic**[Q].

E. Ziprasidone is known to cause **cardiac arrhythmias** (prolonga- tion of QT interval).

F. Aripiprazole is a partial agonist at **D2 receptors** (all other antipsychotics are D2 antagonists).

PROGNOSIS

Good prognostic factors:

1. Acute or abrupt onset
2. **Late onset (age > 35 years)**[Q]
3. Catatonic subtype and paranoid subtype
4. Female sex
5. Prominent positive symptoms
6. Presence of **affective symptoms** (such **as depression**[Q])
7. **Family history**[Q] of mood disorder.

Bad prognostic factor:

1. Insidious onset
2. Early onset (age <20 years)
3. Simple, disorganized, undifferentiated subtype
4. Male sex
5. Prominent negative symptoms
6. Absence of affective symptoms
7. **Family history** of schizophrenia.

OTHER PSYCHOTIC DISORDERS

A. *Acute psychotic disorders*: There are disorders which have symptoms (e.g. delusions, hallucinations and disorganisation symptoms) similar to schizophrenia, however do not meet the duration criterion. These disorders have been classified separately in DSM-5 and ICD-10. These disorders frequently are preceded by a **stressor** (stressful life event), have an acute onset and often resolve completely. These disorders may also be precipitated by **fever**[Q].

In ICD-10, if the symptoms (delusions, hallucinations, disorganization) are present for less than one month, a diagnosis of **acute and transient psychotic** disorder is made.

In DSM-5, if symptoms (delusions, hallucinations, disorganisation) are present for less than one month, a diagnosis **of brief psychotic disorder** is made; and if symptoms last between **1-6 months**, a diagnosis of **schizophreniform disorder** is made.

Treatment: Antipsychotics and benzodiazepines are used for the treatment of acute psychotic disorders.

B. *Schizoaffective disorder*: Schizoaffective disorder has features of both schizophrenia and mood disorders concurrently. Depending on whether manic episode or depressive episode is present along with schizophrenia symptoms, there are two subtypes:
   - *Schizoaffective disorder (Bipolar type or manic type)*: With manic symptoms
   - *Schizoaffective disorder (Depressive type)*: With depressive symptoms.

   Treatment: It involves combination of mood stabilisers, antipsychotics and antidepressants depending on the presentation. In schizoaffective (manic type episodes) a combination of antipsychotics and mood stabiliser is commonly used. In schizoaffective (depressive type episodes) a combination of antipsychotics, and antidepressants is often used.

C. *Delusional disorder*: These disorders are characterized by development of either a **single delusion** or a **set of related delusions**, which are usually persistent and sometimes are life long. Other psychotic symptoms

like hallucinations, disorganization, negative symptoms are usually absent. If hallucinations occur they are for a very short duration, presence of frequent hallucinations goes against the diagnosis of delusional disorder. The following are the types of delusional disorder:

- *Persecutory type*: Delusion of persecution.
- *Jealous type*: Delusion of infidelity.
- *Erotomanic type*: Delusion of love.
- *Somatic type*: Patient may have delusion that he is infested by parasites (**delusional parasitosis**), that he has misshaped body parts (delusion of dysmorphophobia) or that his body has a foul odor (**delusion of halitosis**).
- *Grandiose type*: Delusion of grandiosity.
- *Unspecified type*: In patients where the above mentioned categories are not applicable. Delusion of misidentification is an example of unspecified type. Delusion of misidentification can be of many types like:
  - ***Capgras syndrome***: Patient believes that a familiar person has been replaced by an impostor. For example, a patient believed that his wife has been replaced by a stranger who looks exactly like his wife.

> DSM-5 update: The DSM-4 required that the delusions should be non bizarre, however DSM-5 has removed this condition from the diagnosis of delusional disorders.

  - *Fregoli syndrome*: Patient believes that familiar persons are taking the guise of strangers. For example, a patient saw a beggar, and claimed that his brother is following him in the guise of the beggar.
  - *Syndrome of inter metamorphosis*: Patient believes that people can undergo changes in physical and psychological identity and become a different person altogether.
  - *Syndrome of subjective doubles*: Patient believes that he has many doubles who are living life of their own.

D. *Shared psychotic disorders (or induced delusional disorder)*: This disorder is characterized by spread of delusions from one person to another. The individual who has the delusion (the primary case) is typically the influential member of close relationship with a more suggestible person (the secondary case) who also develops the delusion. When two people are involved, the term **"folie a deux"** is used. Occasionally more than two individuals are involved (known as **folie a trois**, **folie a quatre**, etc).

The patients of delusional disorder are usually able to **function normally in domains which are unaffected by the delusion**. For example, a patient with delusion of infidelity may incessantly doubt his wife and fight with her, however he may be perfectly normal at work place.

Treatment: Antipsychotics are the drug of choice.

QUESTIONS AND ANSWERS

QUESTIONS

History

1. The term "Dementia precox" was coined by: *(AI 2008)*

A. Freud
B. Bleuler
C. Kraepelin
D. Schneider

2. The term schizophrenia was coined by: *(DNB NEET 2014-15)*

A. Eugen Bleuler
B. Emil Kraepelin
C. Hecker
D. Kurt Schneider

3. The term "catatonia" was coined by:

A. Kahlbaum
B. Freud
C. Maxwell
D. Adler

4. Bleuler's symptoms of schizophrenia include all *except*: *(PGI Dec 2005)*

A. Autism
B. Automatism
C. Affect disturbance
D. Loosening of association
E. Ambivalence

5. Schneiderian First Rank Symptoms are found in: *(PGI Nov 2011)*

A. Schizophrenia
B. Organic mental disorders
C. Schizoaffective disorder
D. Mood disorder
E. Delusional disorder

Epidemiology

6. Schizophrenia is associated with which of the following personalities: *(AIIMS 1997)*
A. Athletic
B. Pyknic
C. Asthenic
D. All of the above

7. True about late onset schizophrenia: *(AIIMS Nov 2010)*
A. Onset is after 45 years
B. Onset is between 25-30 years
C. Prognosis is poor
D. Olfactory hallucinations are common

8. Maximum heritability is seen in which of the following illness: *(DNB 2005, MP 2004, WB 2003, UP 2001)*
A. Depression
B. Mania
C. Schizophrenia
D. Panic disorder

Etiology and Pathogenesis

9. Neurotransmitter related to the pathology of schizophrenia is: *(PGI 1997)*
A. Acetylcholine
B. Dopamine
C. Serotonin
D. Norepinephrine

10. Blood sample of a 45 years old male shows increased levels of homovanillic acid (HVA). This patient is most likely suffering from: *(AIIMS Nov 2008)*
A. Dementia
B. Schizophrenia
C. Depression
D. Parkinson's disease

11. Schizophrenia is caused by overactivity in which of the fol- lowing dopaminergic systems? *(DNB 2007)*
A. Nigrostriatal pathway
B. Tuberoinfundibular pathway
C. Mesolimbic/Mesocortical pathway
D. None of the above

Symptoms and Diagnosis

12. Schizophrenia is characterized by all of the following symptoms *except*: *(AIIMS 1998, 2000)*
A. Delusion
B. Auditory hallucination
C. Elation
D. Catatonia

13. Schizophrenia is characterized by all of the following symptoms *except*: *(AI 1993)*
A. Delusion of reference
B. Delusion of control
C. Waxy flexibility
D. Altered sensorium

14. The characteristic clinical manifestation of schizophrenia are: *(PGI 1998)*
A. Confusion
B. Anxiety
C. Auditory hallucinations
D. Visual hallucinations

15. Which of the following hallucinations is pathognomonic of schizophrenia? *(AIIMS 2K, Delhi 2003)*
A. Auditory hallucinations commanding the patient
B. Auditory hallucinations giving running commentary
C. Auditory hallucinations criticising the patient
D. Auditory hallucinations talking to the patient

16. All of the following are characteristic symptoms of schizophrenia *except*: *(AIIMS Nov 2007, MCI Screening)*
A. Third person hallucinations
B. Inappropriate emotions
C. Sustained mood changes
D. Formal thought disorder

17. Hallucinations in schizophrenia are characterized by all of the following *except*:
A. Hallucinations commanding and controlling action of the person
B. Hallucinations of voices, singing songs
C. Hallucinations are almost always continuous
D. Hallucinations commenting on action of the person

18. Which of the following sign is not a part of catatonia? *(AIIMS May 2015)*
A. Akathisia
B. Ambivalence
C. Ambitendency
D. Akinesia

19. All of the following are features of catatonia *except*: *(DNB NEET 2014-15)*
A. Automatic obedience
B. Cataplexy
C. Catalepsy
D. Negativism

20. The following are features of catatonic schizophrenia, *except*: *(MP 2000)*
A. Mutism
B. Echolalia
C. Waxy flexibility
D. Deep tendon reflexes are increased

21. In catatonic schizophrenia, which of the following sign is not found: *(PGI Dec 2008)*
A. Waxy flexibility
B. Automatic obedience
C. Somatic passivity
D. Gegenhalten
E. Hallucinations

22. True about schizophrenia: *(PGI 2003)*
A. Thought broadcasting
B. Third person hallucinations
C. Violent behavior
D. Elated mood
E. Good self care

23. All of the following are true about paranoid schizophrenia *except*: *(MP 1997)*
A. Most common type of schizophrenia
B. Onset in 3rd/4th decade
C. Delusion of grandeur is a symptom
D. Rapid deterioration of personality

24. Defect of conation is typically seen in: *(PGI 1997, AIIMS 1996, UP 2006)*
A. Simple schizophrenia
B. Hebephrenic schizophrenia
C. Catatonic schizophrenia
D. Paranoid schizophrenia

25. Waxy flexibility is a characteristic sign of: *(Orissa 2004, Jharkhand 2006)*
A. Excitatory catatonia
B. Stuporous catatonia
C. Obsessive compulsive disorder
D. All of the above

26. Early onset and bad prognosis is seen in: *(AIIMS 1991)*
A. Catatonic schizophrenia
B. Hebephrenic schizophrenia
C. Paranoid schizophrenia
D. Undifferentiated schizophrenia

27. Schizophrenia with late onset and best prognosis: *(DNB NEET 2014-15)*
A. Simple schizophrenia
B. Hebephrenic schizophrenia
C. Catatonic schizophrenia
D. Paranoid schizophrenia

28. Good prognosis in schizophrenia is indicated by: *(PGI 1998)*
A. Soft neurological signs
B. Affective symptoms
C. Emotional blunting
D. Insidious onset

29. All of the following are associated with better prognosis in schizophrenia *except*: *(AI 2006, MCI Screening)*
A. Late onset
B. Married
C. Negative symptoms
D. Acute onset

30. Prognosis of schizophrenia is less favorable in the following clinical scenario: *(MCI Screening)*
A. Occurring in women
B. Anxiety is prominent
C. Emotional blunting is present
D. In presence of rapid onset of psychosis

31. Type two schizophrenia is characterized by all of the fol- lowing features *except*: *(AIIMS Nov 2008)*
A. Negative symptoms
B. Poor response to treatment
C. Disorganised behavior
D. CT scan abnormalities

32. Van Gogh syndrome is seen in: *(PGI 2003)*
A. Mania
B. Depression
C. Schizophrenia
D. OCD

33. Which of the following is the most common cause of premature death in schizophrenia? *(AI 2011)*
A. Homicide
B. Suicide
C. Toxicity of antipsychotic drugs
D. Hospital acquired infections

34. Expressed emotionality is related to which of the following illnesses: *(MH 2010)*
A. Depression
B. Schizophrenia
C. Mania
D. Somatoform disorder

Clinical Vignettes

35. A patient of Schizophrenia was started on neuroleptics, his psychotic symptoms began to improve however he developed sadness, would talks less to others , would mostly remain on bed. This presentation could be caused by all of following *except*: *(AIIMS 2000)*
A. Parkinsonism
B. Major depression

C. Negative symptoms are still persisting
D. He is reacting to external stimuli

36. Kallu, a 24-year-old occasional alcoholic was brought to psychiatry OPD with a history of behavioral changes. According to family members, he has become suspicious that people are trying to conspire against him, though his father states that there is no reason for his fears. Kallu also reports of hearing voices that comment on his actions. What is the most probable diagnosis: *(AIIMS 2000)*

A. Delirium tremens
B. Alcohol induced psychosis
C. Schizophrenia
D. Delusional disorder

37. A 70-year-old male, Babulal was brought to the hospital with the history of third person auditory hallucinations. He has no history of similar problems previously. What is the most likely diagnosis? *(AIIMS 2001)*

A. Dementia
B. Delusional disorder
C. Schizophrenia
D. Acute psychosis

38. A 60-year-old man is brought to a psychiatrist with a 10-year history, that he suspects his neighbors and he feels that whenever he passes by they sneeze and plan against him behind his back. He feels that his wife has been replaced by a double and calls police for help. He is quite well-groomed, alert, occasionally consumes alcohol, likely diagnosis is: *(AIIMS May 2002)*

A. Paranoid personality disorder
B. Paranoid schizophrenia
C. Alcohol withdrawal
D. Conversion disorder

39. Lallo, a 40-year-old male has recently started writing books. But the matter in his book could not be understood by anybody since it contained words which were never there in any dictionary and the theme was very disjoint. Nowadays he has become very shy and self absorbed. When he addresses people he speaks about meta philosophical ideas. What is the likely diagnosis? *(AIIMS 2000)*

A. Mania
B. Schizophrenia
C. A genius writer
D. Delusional disorder

40. A patient is brought with 6 months history of odd behavior. There is history of a family member having disappeared some years back. He seems to be talking to himself and sometimes laughing loudly. The likely diagnosis is: *(AIIMS May 2002)*

A. Schizophrenia
B. Conversion disorder
C. Major depression
D. Delusional disorder

41. A 16-year-old boy does not attend school because of the fear of being harmed by school mates. He thinks that his classmates laugh at him and talk about him. He is even scared of going out to the market. He is most likely suffering from: *(AI 2004)*

A. Anxiety disorder
B. Manic depressive psychosis (bipolar disorder)
C. Adjustment reaction
D. Schizophrenia

Treatment

42. Depot preparations are available for: *(PGI Nov 2010)*

A. Haloperidol
B. Risperidone
C. Olanzapine
D. Imipramine
E. Fluphenazine

43. A 23-year-old boy with schizophrenia is well-maintained on risperidone for the last 2 months. He has no family history of the disease. For how long will you continue treatment in this patient? *(AIIMS Nov 2015)*

A. 5 years
B. 6 months
C. 2 years
D. 12 months

44. A person with violent behavior and agitation was diagnosed to have schizophrenia and was started on haloperidol. Following this he developed rigidity and inability to move his eyes. Which of the following drugs should be added to his treatment intravenously for this condition? *(AIIMS May 2015)*

A. Promethazine
B. Haloperidol
C. Risperidone
D. Diazepam

45. Antipsychotic drug with least incidence of extrapyramidal side effects is: *(DNB NEET 2014-15)*

A. Pimozide
B. Thioridazine
C. Clozapine
D. Chlorpromazine

46. Not true about clozapine is: *(AI-2012)*

A. Should be discontinued, if WBC counts <3000/mm^3
B. Blood levels should be maintained <350 ng/mL to avoid agranulocytosis

C. Should not be used along with carbamazepine
D. The action is more on D4 receptors than D2 receptors

47. A patient of schizophrenia on chlorpromazine (CPZ) develops auditory hallucination again. The next drug to be given is: *(AI 2000)*
A. Haloperidol
B. Clozapine
C. Sulpiride
D. Tianeptin

48. A patient with acute psychosis, who is on haloperidol 20 mg/day for last 2 days, has an episode characterized by tongue protrusion, oculogyric crisis, stiffness and abnormal posture of limbs and trunk without loss of consciousness for last 20 minutes before presenting to casualty. This improved within a few minutes after administration of diphenhydramine HCl. The most likely diagnosis is: *(AIIMS 2011, May 2006)*
A. Acute dystonia
B. Akathisia
C. Tardive dyskinesia
D. Neuroleptic malignant syndrome

49. 16-year-old boy who was started on an antipsychotic drug, presents with sudden onset of torticollis. What is the most probable diagnosis? *(DNB NEET 2014-15)*
A. Acute muscular dystonia
B. Akathisia
C. Neuroleptic malignant syndrome
D. Tardive dyskinesia

50. An elderly woman suffering from schizophrenia is on antipsychotic medication. She developed purposeless involuntary facial and limb movements, constant chewing and puffing of cheeks. Which of the following drugs is least likely to be involved in this side effect? *(AIIMS Nov 2003)*
A. Haloperidol
B. Clozapine
C. Fluphenazine
D. Loxapine

51. A 19-year-old boy suffering from chronic schizophrenia is put on haloperidol at the dose of 20 mg/day. A week after the initiation of medication the patient shows restlessness, fidgetiness, irritability and cannot sit still at one place. The most appropriate treatment strategy is: *(AIIMS May 2004)*
A. Increase in the dose of haloperidol
B. Addition of anticholinergic drug
C. Addition of beta-blocker
D. Adding another antipsychotic drug

52. Akathisia is treated by all *except*: *(AI 1994)*
A. Trihexyphenidyl
B. Diazepam
C. Haloperidol
D. Promethazine

53. A psychotic patient on antipsychotic drugs develops torticollis within 4 days of starting therapy. What is the appropriate medication that should be added in the treatment regimen? *(DNB NEET 2014-15)*
A. Central anticholinergic
B. Peripheral anticholinergic
C. Beta-blocker
D. Dantrolene

54. A patient who is taking antipsychotics for 3 weeks, presents with high grade fever, raised CPK and myoglobinuria. What is the most probable diagnosis? *(DNB NEET 2014-15)*
A. Neuroleptic malignant syndrome
B. Tardive dyskinesia
C. Acute dystonia
D. Akathisia

55. A 31-year-old male, with mood disorder, on 30 mg of haloperidol and 100 mg of lithium, is brought to the hospital emergency room with history of acute onset of fever, excessive sweating, confusion, rigidity of limbs and decreased communication for a day. Examination reveals tachycardia and labile blood pressure and investigations reveal increased CPK enzyme levels and leucocytosis. He is likely to have developed: *(AIIMS May 2004)*
A. Lithium toxicity
B. Tardive dyskinesia
C. Neuroleptic malignant syndrome
D. Hypertensive encephalopathy

56. A patient was on treatment with trifluoperazine for some time. He presents with complaint of hyperthermia, lethargy and sweating. Needed investigations are: *(AIIMS 2000)*
A. CT scan brain and hemogram
B. Hemogram, electrolyte level and creatinine
C. ECG, chest X-ray and hemogram
D. Hemogram, CPK and renal function test

57. Which of the following is a symptom of neuroleptic malignant syndrome? *(DNB NEET 2014-15)*

A. Hypotension
B. Hypothermia
C. Increased magnesium level in blood
D. Catatonia and stupor

58. What is produced by the supersensitivity of dopamine receptors? *(DNB NEET 2014-15)*
A. Dyskinesia B. Hyperphagia
C. Hyperpathia D. Hypomania

59. Drug of choice for treatment of neuroleptic malignant syndrome is: *(DNB NEET 2014-15)*
A. Dantrolene
B. Beta-blockers
C. Central anticholinergics
D. None of the above

60. A young patient of schizophrenia is intolerant to antipsychotic medications. Which drug is most preferred?
A. Clozapine B. Olanzapine
C. Risperidone D. Haloperidol

61. Antipsychotic drug causing retinal pigmentation disorder is: *(DNB NEET 2014-15)*
A. Thioridazine B. Clozapine
C. Chlorpromazine D. None of the above

62. In comparison to haloperidol, clozapine causes more: *(PGI May 2015)*
A. Weight gain
B. Agranulocytosis
C. Sedation
D. Severe extrapyramidal symptoms
E. Less epileptogenic potential

63. Cognitive remediation is used for: *(AIIMS 2013)*
A. Cognitive restructuring
B. Memory improvement
C. Correcting cognitive distortion
D. Improving study habits

Other Psychotic Disorders

64. What is the content of most common type of persistent delusional disorder? *(DNB NEET 2014-15)*
A. Delusion of persecution
B. Somatic delusion
C. Delusion of jealousy
D. Delusion of grandeur

65. Alcoholic paranoia is associated with: *(AI 2010)*
A. Fixed delusions B. Hallucinations
C. Drowsiness D. Impulsivity

66. Delusion of doubles is seen in: *(AIIMS 1999)*
A. Schizoaffective disorder
B. Capgras syndrome
C. Reactive psychosis
D. Paranoid schizophrenia

67. Characteristic symptom in induced psychotic disorder is: *(AIIMS 1992)*
A. Insomnia
B. Profound mood disturbance
C. Accepting delusions of other person
D. Suicidal ideation

68. A person aged 35 years is having firm belief about infidelity involving the spouse. He never allows her to go out of home alone. He often locks his house, while going to the office. In spite of all this, he is persistently suspicious about the character of his wife. The probable diagnosis is: *(AIIMS 1999)*
A. Schizophrenia
B. Delusional parasitosis
C. De Clerambault's syndrome
D. Othello syndrome

69. Basanti, 27-year-female thinks that her nose is ugly. Her idea is fixed and is not shared by anyone else. Whenever she goes out of the home, she hides her face? She visits a surgeon for plastic surgery. The appropriate next step would be: *(AI 2001)*
A. Investigate and then operate
B. Reassure the patient
C. Immediate operation
D. Refer to psychiatrist

70. A 41-year-old woman working as an executive in a company is convinced that the management has denied her promotion by preparing false reports about her competence and have forged her signature on sensitive documents so as to convict her. She files a complaint in the police station and requests for security. Despite all this she attends to her work and manages the household. What is the most likely diagnosis? *(AI 2004)*
A. Paranoid schizophrenia
B. Late onset psychosis
C. Persistent delusional disorder
D. Obsessive compulsive disorder

71. A 30-year-old unmarried woman from a low socioeconomic status family believes that a rich boy staying in her neighborhood is in deep love with her. The boy clearly denies his love towards this lady. Still the lady insists that his denial is a secret affirmation of his love towards her. She makes desperate attempts to meet the boy despite resistance from her family. She also develops sadness at times when her effort to meet the boy does not materialize. She is able to maintain her daily routine. She however, remains preoccupied with the thoughts of this boy. She is likely to be suffering from: *(AI 2004)*

A. Delusional disorder
B. Depression
C. Mania
D. Schizophrenia

72. A 20-year-old boy complaints of hearing of voices and aggressive behavior for last 2 days. He had fever before the onset of these symptoms. The family members report that he has been muttering to self and gesticulating as if he is talking to someone. There is no history of any past psychiatric illness. The likely diagnosis is: *(AIIMS Nov 2010)*

A. Dementia
B. Acute psychosis
C. Delirium
D. Delusional disorder

73. A 30-year-old man has become suspicious that his wife is having an affair with his boss. He thinks his friend is also involved from abroad and is providing technology support. He also thinks that people talk ill about him. His friends tried to convince him but failed to do so. The patient otherwise is normal, doesn't have any thought disorder or any other inappropriate behavior. The most likely diagnosis is: *(AI 2010)*

A. Paranoid personality disorder
B. Persistent delusional disorder
C. Schizophrenia
D. Obsessive compulsive disorder

ANSWERS

1. C.
2. A.
3. A.
4. B. Automatisms are usually a feature of epilepsy. They are apparently meaningful behaviors, for which patient doesn't have any memory later on. It is not seen in schizophrenia.
5. A, B, C, D, E.
   Although, SFRS were described in relation to schizophre-nia, however they are not specific to schizophrenia. They can be found in all the disorders mentioned in this question. However, if it was not a PGI question, and only option had to be chosen, it would be schizophrenia.
6. C.
7. A
8. C. Schizophrenia has more heritability than bipolar disorder (mania) which in turn has higher heritability in comparison to depression.
9. A, B, C, D.
   All have been implicated but most important are dopamine and serotonin.
10. B. The HVA is a metabolite of dopamine and dopamine is usually increased in schizophrenia. A large number of studies have found that levels of HVA are increased in schizophrenia.
11. C.
12. C.
13. D. Please remember altered sensorium (or clouding of consciousness) is a sign of delirium. This is a frequently repeated question.
14. C. Auditory hallucinations are the most common type of hallucinations in schizophrenia and the third person auditory hallucinations are quite characteristic for schizophrenia.
15. B. Actually, the correct answer is none. No single symptom or sign is pathognomonic of schizophrenia. However, earlier, the Schneider's first rank symptoms were considered to be pathognomonic. Hence the best answer here is B.
16. C. Formal thought disorder, third person hallucinations and inappropriate emotions (inappropriate affect) are characteristic of schizophrenia.
17. C. Hallucinations in schizophrenia are usually not continuous.
18. A. Akathisia is a side effect of antipsychotics. Ambivalence might be confusing here, but please remember ambitendency is nothing but ambivalence of motor movements. Akinesia, which is lack of voluntary movements is another term for stupor.
19. B. Cataplexy is a feature of narcolepsy.
20. D.
21. C, E.
    The other three options are classical catatonic signs. While in catatonic schizophrenia, hallu-

cinations and delusions can be seen, however they are not prominent.

22. A, B, C.
    Schizophrenic patients are much more likely to engage in violent acts in comparison to those without schizophrenia.
23. D.
24. C.
25. B. Stuporous catatonia has stupor as a prominent symptom. Waxy flexibility is seen in stuporous catatonia more commonly.
26. B.
27. D. The best prognosis is of catatonic schizophrenia. However in this question, the better answer is paranoid schizophrenia, as it is the one which has both late onset and good prognosis.
28. B. Presence of affective symptoms (manic or depressive) is a good prognostic sign.
29. C.
30. C. Emotional blunting is quite similar to affective flattening and hence is a negative prognostic sign.
31. C.
32. C.
33. B. Suicide is the most common cause of premature death. Around 5-10% of patients with schizophrenia commit suicide.
34. B. "Expressed emotions" is a term which is used to describe certain attitudes of family members of patients with schizophrenia, which have an impact on the illness itself. These attitudes includes over involvement, hostility, passing critical comments, etc.
35. D. Kindly remember that the negative symptoms of schizophrenia have a similar presentation as depression. Speaking less, staying on bed mostly can be due to either negative symptoms or depression. Further, the use of antipsychotics can cause drug induced parkinsonism which again looks quite similar to negative symptoms.
36. C. There is history of delusions and auditory hallucinations, (running commentary type). Hence, the diagnosis is most likely schizophrenia. Occasional alcohol use is unlikely to cause psychosis.
37. C. Third person auditory hallucination is suggestive of schizophrenia. Although its an incomplete question, and information about duration of symptoms, any memory disturbances would have helped in making a more definitive diagnosis.
38. B. Kindly note that this patient also has Capgras syndrome (feeling that his wife has been replaced by a double) which is usually seen in patients with schizophrenia. Also the history is suggestive of delusion of persecution (neighbors are planning against him). Also, note that he is quite well groomed suggesting that personality is preserved as is seen in patients with paranoid schizophrenia.
39. B. The history is suggestive of neologisms (words which are not present in any dictionary) and formal thought disorders (theme is very disjoint). Further, there are negative symptoms (shy and self absorbed). All point towards the diagnosis of schizophrenia.
40. A There is history of disorganised behavior (odd behavior), hallucinations (talking to self and laughing loudly is most likely a result of patient hearing some voices and communicating with the voices), the history of disappeared family member is again suggesting that some family member may have had a mental illness because of which either he got lost or committed suicide. All factors combined, the likely diagnosis is schizophrenia.
41. D. The history is suggestive of delusion of persecution (fear that schoolmates may harm him) and delusion of reference (belief that classmates laugh at him and talk about him).
42. A, B, C, D, E.
    There is a depot preparation available for imipramine, which is an antidepressant.
43. C. The history is suggesting that the patient had first episode of schizophrenia (i.e he developed schizophrenia for the first time and no history of any relapse has been provided) and is now maintaining well for last two months. It is generally recommended that after first episode, the treatment with antipsychotics should be continued for at least two years. If there are more than one episodes (i.e. there is history of relapses) the treatment should continue for at least 5 years. In patients with multiple relapses, indefinite treatment is given.
44. A. The symptoms are suggestive of acute dystonia (inability to move eyes is most likely due to oculogyric crisis) and drug induced parkinsonism (development of rigidity). For both, an anticholinergic needs to be added.

45. C.
46. B. Agranulocytosis is an idiosyncratic reaction and is not related to blood levels.
47. B. Clozapine. This question intends to give history for treatment resistance schizophrenia. However, treatment resistance schizophrenia is defined as lack of response to two different antipsychotics (belonging to different chemical classes) whereas in this question only one antipsychotic has been used. This might be due to wrong recall of question.
48. A.
49. A.
50. B. The history here is suggestive of tardive dyskinesia. Clozapine is the antipsychotic with minimum incidence of tardive dyskinesia.
51. C. The history here is suggestive of akathisia.
52. C.
53. A.
54. A.
55. C.
56. D. Here, we need to rule out the neuroleptic malignant syndrome and also check the renal functions (as NMS can result in renal failure secondary to myoglobinuria).
57. D. The symptoms of NMS are quite similar to catatonia (increased rigidity, stupor). Infact, catatonia is an important differential diagnosis in patients with NMS.
58. A. It is believed that long-term blockade of D2 receptors by antipsychotics causes super sensitivity of the receptors which results in tardive dyskinesia.
59. A.
60. A. In patients who are intolerant to the extrapyramidal side effects, clozapine is the preferred antipsychotic.
61. A.
62. A,B,C.
63. B. Cognitive remediation is a therapy usually used in schizophrenia for improvement of cognitive functions such as attention, concentration, memory, planning and execution.
64. A.
65. A. Alcoholic paranoia usually presents with delusion of infidelity (also known as morbid jealousy).
66. B. Please remember delusion of doubles is also known as Capgras syndrome and is usually seen in patients with schizophrenia.
67. C. In Induced psychotic disorder or shared psychotic disorder, one person who has the delusion (primary case) induces the delusion in another person (secondary case).
68. D. Here, there is only one delusion, i.e. delusion of infidelity, also known as Othello syndrome.
69. D. This appears to be a case of delusional disorder, somatic type. Its important to differentiate it from body dysmorphic disorder. Here, the question says that the idea is fixed (fixed means that the belief persists despite evidences to contrary and despite reassurances by others) and is not shared by anyone else and patient is further hiding her face when visiting outside (i.e. acting on her belief). In body dysmorphic disorder, the belief is not fixed and may be at least temporarily changed by reassurances of others. In body dysmorphic disorder, the problem is more of a preoccupation with the thought that a body part is deformed, this preoccupation is however not fixed (which means person can be reassured at least for some time).
70. C. In this question, there is a single delusion that management is against her (delusion of persecution) and her actions are according to that delusion. Please remember that in delusional disorders, the areas of functioning which does not involve the delusion, remain unaffected. In this patient also, the history that she is able to do her work and manage household is suggesting that she is able to manage the areas of her life which are not affected by the delusion. In questions of delusional disorder, this history is very important and should be looked for.
71. A.
72. B. The duration of symptoms is less than one month. Also please remember that in a large number of cases acute psychosis is preceded by fever, hence don't get confused. In this case if the history also mentioned disturbances of consciousness or history of disorientation, the likely diagnosis would be delirium.
73. B. Here again, there is a central delusion that wife is having an affair, and the rest of history is extension of that delusion (i.e. friend is providing support and people are talking ill). The question has mentioned the lack of any thought disorder and inappropriate behavior to provide evidence against the diagnosis of schizophrenia.

Chapter

3 Mood Disorders

Mood disorders are so called as their main feature is abnormality of mood. They are also sometimes referred to as affective disorders. Mood disorder include:

A. *Major depressive disorder (or Unipolar depression or Depression)*: Patients have only depressive episodes.
B. *Bipolar disorder*: Patients have both manic and depressive episodes or may present with manic episodes only.
C. *Hypomania*: It is an episode similar to mania, however is less severe, and does not meet the criterion for mania.
D. *Cyclothymia*: It is a less severe form of bipolar disorder.
E. *Dysthymia*: Less severe and chronic form of major depression.

DEPRESSION

Various terms such as major depressive disorder, unipolar depression and depression have been used for the same illness. It is characterized by major depressive episodes (also known as depressive episodes) in the absence of any manic, mixed or hypomanic episodes.

It is one of the commonest psychiatric disorder (lifetime prevalence is 17%). It is twice as prevalent in **women** as in men and the mean age of onset is around 40 years (so its most commonly seen in middle aged females). It is more commonly seen in divorced and separated persons.

Depression is also responsible for **maximum DALYs (disability adjusted life years)** amongst all the psychiatric disorders. It is also the **most common**Q cause of suicide.

Symptoms

The symptoms of depression can be remembered using the pneumonic, SIGECAPS. These symptoms must last for more than **two weeks**Q, for the diagnosis of depression.

A. *Sleep disturbances*: Usually **insomnia** is seen however hypersomnia can also be a symptom. The two characteristic sleep disturbances in depression are "**early morning awakening**Q" and "**reduced latency of REM sleep**".
B. *Interest (loss)*: Patient looses interest in the activities which used to interest him earlier (**anhedonia**).
C. *Guilt*: Patient may have excessive **guilt feelings** and may blame himself for trivial matters.
D. *Energy (lack)*: Patient may have decreased energy levels and easy fatigability.
E. *Cognition/Concentration*: Patient may have negative cognitions (negative thoughts) and may have poor concentration.
F. *Appetite*: Usually the appetite and weight are lost, in some patients weight gain may be seen.
G. *Psychomotor agitation or retardation*: The term 'psychomotor' refers to the changes in motor activity secondary to psychological causes. It may be increased (e.g. in restless patients) or may be decreased (e.g. a patient who keeps on lying on the bed and rarely gets up).
H. **Suicidal thoughts** and sadness of mood (depressed mood).

Out of the above symptoms, **SWAG** (suicidality, weight loss, anhedonia and guilt feelings) are quite suggestive of depression.

Physical Signs

A. ***Veraguth fold***[Q]: Otto veraguth described a triangular shape fold in the nasal corner of upper eyelid, called veraguth fold in patients with depression.
B. ***Omega sign***: It is the omega shaped fold (like the Greek letter omega, Ω) in the forehead above the root of the nose, seen in patients with depression.

Apart from the above mentioned symptoms, the patient may have few other special features which must be mentioned along with the diagnosis, such as psychotic features, atypical features, melancholic features and catatonic features. These have been described below:

A. *With psychotic features*: Patients with severe depression may develop psychotic symptoms (delusions and hallucinations). These psychotic symptoms could be **mood congruent** (i.e. content of delusion/hallucination is consistent with the depressed mood, e.g. a severely depressed patient developed a delusion that the world is about to end, nihilistic delusion) or mood incongruent (i.e. content of delusion is inconsistent with the depressed mood, e.g. a severely depressed patient developed the delusion that he is the richest man on earth). It must be remembered that psychotic symptoms are present only **in severe depression** and sometimes the term "**psychotic depression**[Q]" is used for depression with psychotic features.
B. *With atypical features*: These patients present with reverse biological symptoms such as hypersomnia, overeating and weight gain.
C. *With melancholic features*: Depression with melancholic features (or **involutional melancholia**[Q]) is usually seen in **old age**. It is characterized by **severe anhedonia**, profound **guilt feelings**, **early morning awakening** and **weight loss**, agitation and high suicide risk.
D. *With catatonic features*: Patient with depression may develop catatonic symptoms such as s**tupor**[Q], negativism, etc.

Endogenous vs Exogenous (Reactive) Depression

In older classificatory system, two subtypes of depression were described. Endogenous depression which occurred in the absence of any precipitating negative life event, and was considered to be caused by biological factors. The symptoms described were early morning awakening, psychotic symptoms, psychomotor retardation and feelings of guilt and higher suicide risk. The symptoms of endogenous depression were quite similar to today's psychotic and melancholic depression. The exogenous depression (reactive depression) was believed to occur in response to a negative life event and the symptoms which were described included initial insomnia (difficulty in falling asleep), absence of psychotic symptoms and multiple somatic complaints and lower suicide risk.

Etiology

A. *Biological factors*:
- *Neurotransmitters disturbances*: **Decreased levels of serotonin and norepinephrine**[Q] are most important factors implicated in the pathophysiology of depression. Dopamine has also been found to be decreased in a subset of patients.
- *Hormonal disturbances*: Elevated HPA activity (hypothalamic-pituitary-adrenal axis activity) has been documented. Also, **hypothyroidism**[Q] is a common cause of depression.
- *Neuroanatomical considerations*: **Decreased activity** in dorsolateral **prefrontal cortex**[Q] and increased activity in amygdala (and other limbic tissue) has been found in depression.

B. *Genetic factors*: Gene mapping studies have found evidence of linkage to locus for cAMP response element binding protein (CREB 1) on chromosome 2. Serotonin transporter gene has also shown linkage.
C. *Psychological theories*:
- *Cognitive theory*: It was proposed by **Aaron Beck**[Q]. According to this theory negative thoughts have a central role in development of depression. He proposed that there are three central thoughts/ideas in depression, the so called **cognitive triad** of **depression**[Q]. These include:
  1. Negative view of self (**ideas of worthlessness**[Q])
  2. Negative views about environment—A tendency to experience world as hostile (**ideas of helplessness**[Q]) and
  3. negative view about future (**ideas of hopelessness**).
- *Learned helplessness*: According to this theory, due to repeated adverse events, patient starts believing that he has no control over events happening around him and loses the motivation to act which results in depression.

Treatment

1. *Pharmacotherapy*: The use of specific pharmacotherapy doubles the chances that a depressed patient will recover in 1 month. All the available antidepressants take up to **3–4 weeks** to exert significant therapeutic effects. The available antidepressants do not differ in the overall efficacy, speed of response or long-term effectiveness and the choice of antidepressants is mostly determined by the **side effect profile**[Q] of the drugs. Antidepressant treatment should be maintained for at least 6 months or equal to the duration of a previous episode, whichever is greater. Prophylactic treatment with antidepressants is effective in reducing the number and severity of episodes. It should be given to patients who have had three or more prior depressive episodes or who have chronic major depressive disorder (> 2 years duration is chronic depression). The following classes of medications can be used.
   A. *Tricyclic and tetracyclic antidepressants (TCAs)*: These were the first class of antidepressants that were widely used in clinical practice. They act by blocking the transporters of **serotonin** and **norepinephrine** and hence increase the levels of these neurotransmitters in synapses. Secondary effects of TCAs include antagonism of muscarinic, histaminic H1, α1 and α2 adrenergic receptors and blockage of cardiac sodium channels. These secondary effects are responsible for the unfavorable side effect profile of these drugs.

      The class TCAs include the following drugs: Imipramine, desipramine, trimipramine, amitriptyline, nortriptyline, protriptyline, amoxapine, doxepin, maprotiline and clomipramine. The TCAs differ in their affinity for transporters, with clomipramine being the most serotonin selective and desipramine the most norepinephrine selective of TCAs.
      The side effects of TCAs include the following:
      - **Anticholinergic side effects**[Q] like **constipation**, **urinary retention**[Q], blurred vision, dry mouth, decreased sweating and delirium. Due to significant anticholinergic side effects TCAs should be avoided in **glaucoma**[Q] and prostate hypertrophy.
      - Side effects due to blockade of α (alpha) receptors like postural hypotension.
      - Severe side effects like cardiac **arrhythmias**, hypotension due to blocking of cardiac sodium channels. The blockage of sodium channels in brain can cause **seizures**.
      - Sedation due to blockage of H1 histaminic receptors.
      - Important properties of individual drugs:
        a. **Amoxapine**[Q] has D2 blocking action and hence can cause extrapyramidal side effects like antipsychotics.
        b. **Imipramine**[Q] is used in the treatment of nocturnal enuresis (however the drug of choice is desmopressin; the treatment of choice is behavioral methods like night alarms).
        c. Clomipramine is the first line therapy in OCD, however due to better side effect profile, SSRIs are preferred over clomipramine.

   B. *Selective serotonin reuptake inhibitors (SSRIs)*: These are the most commonly prescribed antidepressants. They act by blocking the reuptake of serotonin and do not have problematic side effects seen with TCAs. The SSRIs include fluoxetine, fluvoxamine, citalopram, escitalopram, sertraline, paroxetine and **vilazodone**. The SSRIs are the first line drugs for depression, obsessive compulsive disorder, post-traumatic stress disorder, panic disorder, generalized anxiety disorder and phobias. The side effects of the SSRIs include nausea (most common) followed by anxiety and diarrhoea. Other side effects include delayed ejaculation (hence SSRIs are used in the treatment of premature ejaculation), decreased libido, anorgasmia, sedation, delayed platelet aggregation, sweating and weight gain.
      Serotonin syndrome[Q]: Concurrent administration of an SSRI with MAO inhibitor, L-tryptophan or lithium can raise plasma serotonin concentration, producing serotonin syndrome. The symptoms are diarrhea, restlessness, hyperreflexia, myoclonus, seizures, may result in death. It is treated using cyproheptadine and supportive care.
      Vortioxetine: A recently introduced antidepressant works as an inhibitor of serotonin reuptake, but also has other actions like agonism at 5-HT1A receptor, partial agonism at 5-HT1B receptor and antagonism at 5-HT3. 5-HT1D and 5-HT7 receptors.

   C. *SNRIs (Serotonin Norepinephrine Reuptake Inhibitors)*: These drugs produce blockade of neuronal serotonin and norepinephrine uptake transporters and hence are also referred as dual reuptake inhibitors. They include venlafaxine, desvenlafaxine,

duloxetine, milnacipran, levomilnacipran. The side effect profile is quite similar to SSRIs. In addition, SNRIs can cause hypertension at higher dosages.

D. *Monoamine oxidase inhibitors*: These drugs act by inhibiting the metabolism of monoamines. There are two isoforms of the enzymes (MAO), MAO-A (involved in metabolism of serotonin, norepinephrine and dopamine) and MAO-B (preferential metabolism of dopamine). The nonselective MAO inhibitors which includes tranylcypromine, phenelzine and isocarboxazid inhibits both the isoforms irreversibly. These drugs are rarely used now as they can cause hypertensive crisis.

Cheese reaction: Cheese, red wine and beer contains tyramine (which is an indirectly acting sympathomimetic). Normally, when these items are consumed, the MAO-A present in the gastrointestinal tract degrades the tyramine. However when MAO inhibitors are used, the tyramine escapes degradation and gets absorbed resulting in dangerous elevation of blood pressure, causing hypertensive crisis (also called cheese reaction). Hence these food items are restricted in a patient who is on MAO inhibitors. **Phentolamine** is the drug of choice for cheese reaction.

E. *Atypical antidepressants*: There are many other antidepressants which have novel mechanisms of actions. These include:
   - *Trazodone and nefazodone*: These drugs are classified as SARI (serotonin antagonist and reuptake inhibitors). The mechanism of action is weak inhibition of serotonin reuptake and strong antagonism at 5 HT2A and 5 HT2C receptors. Trazodone can cause **priapism**[Q] as a side effect.
   - *Mirtazapine*: Mirtazapine belongs to a class called NSSA (nor adrenergic and specific serotonergic antidepressant). The mechanism of action is antagonism of central presynaptic α-2 (alpha-2) receptors which results in increased firing of norepinephrine and serotonin neurons. The other important action is antagonism of postsynaptic serotonin 5 HT2 and 5 HT3 receptors. Mirtazapine causes sedation and weight gain but doesn't have problematic sexual side effects.
   - *Bupropion*: Bupropion belongs to a class called NDRI (norepinephrine dopamine reuptake inhibitors). The mechanism of action is inhibition of reuptake of both **norepinephrine and dopamine**[Q]. The advantage of bupropion is a good side effect profile with low risk of sexual side effects, weight gain or sedation. The common side effects are insomnia, tremors, restlessness and nausea. A particular worrisome side effect is **seizures** (usually seen at higher dosages). Bupropion is also used for smoking cessation.
   - *Tianeptine and amineptine*: These antidepressants work by **enhancing**[Q] the reuptake of serotonin (serotonin reuptake enhancer).
   - *Antipsychotics*: If patient has depression with psychotic symptoms, a combination of antidepressants and antipsychotics is used.

2. *Psychotherapy*: It is the treatment using psychological techniques. The following psychotherapeutic techniques are effective in depression:
   A. ***Cognitive behavioral therapy***: This therapy aims at correcting cognitive distortions (faulty ways of thinking) and faulty behaviors. It is the **most effective**[Q] psychotherapeutic technique in depression.
   B. *Interpersonal therapy*: In interpersonal therapy, the focus is on management of patient's current interpersonal problems (e.g. relationship problems).
   C. Other less commonly used therapeutic techniques include behavior therapy, family therapy and psychoanalytically oriented therapy.
3. *Other somatic treatments:*
   A. *Electroconvulsive therapy (ECTs)*: The indications for ECT in depression includes:
      - Severe depression with **suicide risk**[Q] **(If the patient is suicidal, ECT is the preferred treatment modality)**[Q].
      - Severe depression with **stupor**[Q].
      - Other indications include depression with psychotic symptoms, refractoriness to other treatment modalities.
   B. ***Transcranial magnetic stimulation***[Q]: It is a newer modality which uses magnetic energy to stimulate nerve cells. It is nonconvulsive, requires no anesthesia, has a safe side effect profile and is not associated with cognitive side effects. Its use is yet not widespread.
   C. ***Vagal nerve stimulation***[Q]: This modality involves stimulation of vagal nerve using an electrode.
   D. ***Deep brain stimulation***[Q]*:* This modality involves implantation of leads into specific brain areas and has been used in patients with chronic and intractable depression.

E. *Sleep deprivation*: Sleep deprivation can produce significant benefits however these are transient and are typically reversed by next night of sleep. Research is ongoing to produce sustained benefits.
F. *Phototherapy*: It has been primarily used for **seasonal affective disorders (mood disorder with seasonal pattern[Q])**. In this disorder patients typically develop depressive symptoms during winter seasons which are associated with decreased day time. The phototherapy involves exposure to bright light in range of 1500–10,000 lux or more.

Usually a combination of pharmacotherapy and psychotherapy is used in management of depressed patients, in cases of suicide risk, ECT is the preferred treatment.

BIPOLAR DISORDER

Bipolar disorder is characterized by episodes of both mania and depression. Even if a patient has **only manic episodes[Q]**, he would still be diagnosed with bipolar disorder, as in all likelihood he would develop a depressive episode in future. Bipolar disorder is equally prevalent among men and women. Manic episodes are more common in men, and depressive episodes are more common in women. The average age of onset of bipolar disorder is 30 years. It is more commonly seen in divorced and single persons. Bipolar disorder has multiple subtypes which have been illustrated in the following Table 1.

Symptoms

The symptoms of manic episode are as follows:

A. Elevated mood (undue happiness) or irritable mood
B. **Increased self esteem** or grandiosity (e.g. patient believes himself to be the richest, most powerful, most goodlooking person on the earth, etc.)
C. **Decreased need for sleep[Q]** (e.g. patient feels rested after 2 hours of sleep)
D. Over-talkativeness
E. **Flight of ideas[Q]**
F. **Distractibility[Q]** (not able to concentrate on task in hand)
G. Increase in goal directed activities (overactivity, hypersexuality, overfamiliarity) or psychomotor agitation
H. Excessive involvement in activities that have high potential for painful consequences (e.g. unrestrained buying sprees, sexual indiscretions or foolish business investments).

These symptoms should last for atleast **7 days[Q]** and must cause marked impairment in social and occupational functioning.

Psychotic symptoms: Apart from the above mentioned symptoms, patient may also develop psychotic symptoms (delusions and hallucinations). These may be mood congruent (e.g delusion of grandiosity) or mood incongruent (e.g. delusion of persecution). In the presence of psychotic symptoms, the diagnosis made is manic episode with psychotic symptoms.

Hypomania: The symptoms of hypomania are similar to mania however they are not severe enough to cause marked impairment in social and occupational functioning. Also, the duration criterion for hypomania is **4 days**.

Mixed episodes: Mixed episodes have both manic and depressive symptoms lasting for at least 7 days.

Table 1: Types of bipolar disorders.

Bipolar 1/2	Schizobipolar disorder (schizoaffective disorder)
Bipolar I	Mania with depression (or mania alone)
Bipolar I 1/2	Depression with protracted hypomania
Bipolar II	Depression with discrete hypomanic episodes
Bipolar II 1/2	Depression superimposed on cyclothymia
Bipolar III	Depression plus induced hypomania (e.g. hypomania occurring solely in association with antidepressants or other somatic treatment
Bipolar III 1/2	Bipolar disorder associated with substance use
Bipolar IV	Depression superimposed on hyperthymic temperament

Etiology

- *Neurotransmitters*: Increased levels of dopamine has been implicated in pathophysiology of manic episode. The changes in depression have been already discussed.
- *Genetic factors*: The chromosomes **18q[Q]** and 22q have the strongest evidence of linkage to bipolar disorder. Chromosome 21q has also been linked.

Treatment

The treatment in bipolar disorder depends on the phase. Patient requires treatment during acute illness (acute manic or mixed or depressive episodes) and also need prophylaxis to prevent further episodes (maintenance treatment). The following classes of drugs are usually used in bipolar disorder:

A. *Mood stabilizers*: Commonly used mood stabilizing drugs include lithium, valproate, carbamazepine oxcarbazepine and, lamotrigine. Many atypical antipsychotics also have mood stabilizing properties:
   - Lithium is considered the **prototypical mood stabilizer**[Q]. However it takes around **1-2 weeks** to start acting. It is usually supplemented by other mood stabilizers, antipsychotics or benzodiazepines in early phase of treatment.
   - *Valproate*: Valproate has surpassed lithium in use for acute mania due to better tolerability.
   - *Lamotrigine*: It is mostly used in treatment of acute depressive episode of bipolar disorder (**bipolar depression**[Q]).

B. *Antipsychotics*: Usually atypical antipsychotics are used due to better tolerance and side effect profile.

C. *Benzodiazepines*: High potency benzodiazepines such as lorazepam and clonazepam are frequently used in acute mania due to their calming effect.

D. *Antidepressants*: Antidepressants are **never used** alone in bipolar disorder. When used alone in bipolar depression they can cause switch (patient may go into mania), hence they are always used along with mood stabilizers.

Treatment Guidelines

A. Acute manic or mixed episode:
   - For severe mania or mixed episode, initiate lithium in combination with an antipsychotic or valproate in combination with an antipsychotic.
   - For less ill patients, monotherapy with lithium, valproate or an atypical antipsychotic such as olanzapine may be sufficient.
   - Short-term treatment with benzodiazepines is often used.
   - For mixed episodes, valproate is preferred over lithium.
   - If patient has psychotic symptoms, antipsychotics must be added to the treatment regimen.

B. Acute depression (bipolar depression):
   - Initiate lithium or lamotrigine.
   - In severely ill patients, initiate treatment with both lithium and an antidepressant.
   - Quetiapine alone and combination of olanzapine and fluoxetine are other treatment options.
   - Antidepressant mono therapy should never be given.
   - Electroconvulsive therapy for patients with high suicide risk.

C. Maintenance
   - Usually given after two or more acute episodes in bipolar I illness or after a single manic episode if it was associated with significant risk.
   - Lithium and valproate have the best evidence.
   - Treatment should be continued for at least two years.

Lithium

Lithium is used for treatment of acute episodes (both mania and depression) as well as prophylaxis in bipolar disorder. Lithium is a monovalent cation and gets rapidly and completely absorbed after oral administration. The plasma half-life is initially **1.3 days** and gets increased to **2.4 days** after continued administration for more than one year, lithium is not metabolized in the body and gets excreted unchanged through the **kidney**.

Indications

A. *Acute manic episode*: Lithium is an effective treatment for acute mania however since its onset of action is delayed (1-3 weeks), an antipsychotic, benzodiazepine or valproate is usually added for initial period. Lithium is also effective for prophylaxis against future manic episodes.

B. *Bipolar depression*: Lithium is effective for treatment of bipolar depression and prophylaxis of same, however the antimanic efficacy of lithium is more than its antidepressive efficacy.

C. *Maintenance treatment*: Maintenance treatment with lithium decreases the frequency, severity and duration of manic and depressive episodes in patients with bipolar disorders.

D. Lithium is also use in patients with schizoaffective disorders as well as an adjuvant to antidepressants in major depressive disorder.

E. Other indications in which lithium has been used but is not the first line treatment include obsessive compulsive disorder, aggression, **headache (cluster, migraine**[Q]**)**, gout, epilepsy, movement disorders, **neutropenia**[Q], ulcerative colitis.

Lithium has a narrow therapeutic index and therapeutic drug monitoring is required. The effective serum concentration for treat ment of acute mania is **1.0–1.5 mEq/dL**[Q]. The serum concentration required for maintenance treatment is **0.6–1.2 mEq/dL**[Q].

Side Effects

A. *Neurological side effects*: Lithium can cause **postural tremors** (usually treated with beta blockers **like propranolol**[Q]), lack of spontaneity and memory disturbances, rarely it can cause raised intracranial tension and peripheral neuropathy.
B. *Endocrine*: **Hypothyroidism**, rarely hyperthyroidism, hyperpara- thyroidism.
C. *Renal*: Most common is polyuria at time progressing to diabetes insipidus which is treated with use of thiazide diuretics or potassium sparing diuretics (like amiloride, spironolactone or triamterene) . Rarely nephrotic syndrome, renal tubular acidosis or interstitial fibrosis can be seen.
D. Others include acne, psoriasis, nausea, vomiting, diarrhoea, weight gain, benign T wave changes.

Lithium toxicity: The risk factors of lithium toxicity include renal impairment, **dehydration**[Q] and low **sodium diet**[Q]. Usually the sign of toxicity starts to appear at levels above **1.5 mEq/dL**. The early signs include **GI symptoms** like abdominal pain, vomiting and neurological symptoms like **coarse tremors**, **ataxia**[Q] and **dysarthria**. The later signs and symptoms include impairment of consciousness, muscular fasciculations, increased **deep tendon reflexes**[Q] and convulsions. There might be circulatory failure and death. The management involves stopping lithium, correcting dehydration, use of polyethy lene glycol (and not activated charcoal) to remove unabsorbed lithium from GI tract. In severe cases, hemodialysis may be required.

OTHER MOOD DISORDERS

A. *Recurrent depressive disorder*: If there are more than one depressive episodes, diagnosis of recurrent depressive disorder is made.

DSM-5 Update: In DSM-5, the diagnosis of dysthymia has been removed. A new diagnostic category of "persistent depressive disorder" has been made, which includes both chronic depression and previous dysthymic disorder.

B. *Dysthymia*: It is the presence of mild depressive symptoms (not enough to diagnose a major depressive episode) for a period of more than two years.

DSM-5 Update: In DSM-5 a new diagnosis of "premenstrual dysphoric disorder" has been added. This disorder is characterized by symptoms such as mood swings, irritability, lethargy, physical symptoms like breast tenderness, which start before the onset of menses and improve after onset of menses.

Chronic depression: If the depression continues for more than 2 years, it is known as chronic depression.
C. *Cyclothymia*: It is a milder form of bipolar disorder, in which manic symptoms and depressive symptoms occur, but they are never severe enough to make a diagnosis of mania/hypomania or depression. The symptoms should last for atleast 2 years.
Rapid cycling: If a patient of bipolar disorder has four or more than four episodes of mania/hypomania/depression in one calendar year.

SUICIDE

The psychiatric illnesses associated with highest risk of suicide are **depressive disorder**, schizophrenia, **alcohol dependence** and other substance dependence and personality disorders (especially borderline personality disorder and antisocial personality disorder. Low CSF levels of **5-hydroxyindoleacetic acid (5 HIAA)**[Q], which is a **metabolite of serotonin**, are associated with higher suicide risk.

The following are the risk factors for suicide:

1. **Male sex**[Q]
2. Age > 45 years
3. Divorced, widowed
4. Unemployed
5. Chronic illness
6. Family history of suicide
7. Poor social support.

QUESTIONS AND ANSWERS

QUESTIONS

Depression

Epidemiology and Etiology

1. Most commonly depression is seen in: *(AI 1996, 1998)*

A. Middle aged men
B. Middle aged female
C. Young girl
D. Children

2. Neurotransmitters involved in depression are: *(AI 1995)*

A. GABA and dopamine
B. Serotonin and norepinephrine
C. Serotonin and dopamine
D. Norepinephrine and GABA

3. Which of the following is not a part of cognitive triad of beck? *(AIIMS Nov 2015)*

A. Hopelessness
B. Worthlessness
C. Helplessness
D. Guilt

4. All of the following about "Aaron becks cognitive theory of depression" is true, *except*: *(DNB Dec 2010)*

A. Negative thought of past
B. Negative thought of future
C. Negative thought of environment
D. Negative about self

5. True about major depressive disorder: *(PGI Nov 2011)*

A. Abnormally diminished activity in prefrontal cortex
B. Lesion of corticospinal tract
C. Monoaminergic system disturbances
D. Genetic predisposition is present

6. Depression is seen in:

A. Hyperthyroidism
B. Hypogylcemia
C. Adrenal disorder
D. Pheochromocytoma

7. Depression is a feature of which of the following condition:

A. Hypopituitarism
B. Hyperthyroidism
C. Hypothyroidism
D. Hypoglycemia

8. Depression is not caused by:

A. Clonazepam
B. Levodopa
C. Metronidazole
D. Corticosteroid

Symptoms and Diagnosis

9. Persistent feeling of guilt is seen in: *(DNB NEET 2014-15)*

A. Obsessive compulsive disorder
B. Mania
C. Depression
D. Schizophrenia

10. DSM IV, duration criterion for diagnosis of depression is: *(DNB NEET 2014-15)*

A. 1 week
B. 2 weeks
C. 3 weeks
D. 4 weeks

11. Which of the following symptoms must be present for the diagnosis of major depressive disorder: *(MH 2010, 2007)*

A. Loss of interest or pleasure
B. Recurrent suicidal tendencies
C. Insomnia
D. Indecisiveness

12. Disruption or disorganization of biological rhythm is observed in:

A. Schizophrenia
B. Anxiety
C. Depression
D. Mania

13. "Nihilistic delusions" are seen in: *(PGI 2000)*

A. Endogenous depression
B. Double depression
C. Depression in involutional stage
D. Cyclothymia
E. Dysthymia

14. True about psychotic feature in depression: *(PGI Dec 2004)*

A. Found in severe depression
B. Found in moderate depression
C. Mood incongruent psychotic feature
D. Cyclothymia
E. Dysthymia

15. Intense nihilism, somatization and agitation in old age are the hallmark symptoms of:

A. Involutional melancholia
B. Atypical depression
C. Somatized depression
D. Depressive stupor

16. True about major depressive disorder: *(PGI 2003)*
A. Commonly seen in female
B. Recovery is complete after treatment
C. Associated with hypothyroidism
D. Family history of major depression

17. Dysthymia is: *(DNB NEET 2014-15)*
A. Chronic mild depression
B. Chronic severe depression
C. Bipolar disorder
D. Personality disorder

18. Most common type of postpuerperal psychosis is: *(PGI 1999)*
A. Depression B. Anxiety
C. Mania D. Suicide

Clinical Vignettes

19. A 41-year-old woman presented with a history of aches and pains all over the body and generalized weakness for four years. She cannot sleep because of the illness and has lost her appetite as well. She has lack of interest in work and doesn't like to meet friends and relatives. She denies feelings of sadness. Her most likely diagnosis is: *(AIIMS Nov 2002)*
A. Somatoform pain disorder
B. Major depression
C. Somatization disorder
D. Dissociative disorder

20. A 60-year-old male is brought by his wife. He thinks that he had committed sins throughout his life. He is very much depressed and has considered committing suicide but has not taken any such steps. He is also taking sessions with a spiritual guru. He does not get convinced when his wife tells him that he has led a pious life. How will you treat him:
A. Antipsychotic plus antidepressant
B. Antidepressant with cognitive behavioral therapy
C. Guidance and recounselling with guru plus antidepressant
D. Antidepressant alone

21. An 18-year-old student complaints of lack of interest in studies for last 6 months. He has frequent quarrels with his parents and has frequent headaches. The most appropriate clinical approach would be: *(AI 2005)*
A. Leave him as normal adolescent problem
B. Rule out depression
C. Rule out migraine
D. Rule out an oppositional defiant disorder

22. A 40-years-old female patient presents with history of depressed mood, loss of appetite, insomnia and lack of interest in surroundings for past one year. These symptoms followed soon after a business loss one year back. Which of the following statements is true regarding the management of this patient:
A. No treatment is necessary as it is due to business loss
B. SSRI is the most efficacious of the available drugs
C. Antidepressant treatment is based on the side effect profile of the drugs
D. Combination therapy of two antidepressant should be given

23. A patient presents with depressed mood, loss of sleep, loss of hope, feeling of worthlessness and diminished concentration for last 1 month. Which of the following is the drug of choice in this patient? *(DNB NEET 2014-15)*
A. SSRIs
B. Atypical antidepressants
C. Lithium
D. Tricyclic antidepressants

24. A woman has mild depressive symptoms after few days of delivery which disappeared after 2 week in postpartum period. The most likely cause is: *(PGI May 2015)*
A. Postpartum blue B. Mania
C. Postpartum depression D. Mild depression
E. Postpartum psychosis

25. A patient presents to the emergency department with self harm and indicates suicidal intent. Which of the following conditions does not warrant an immediate specialist assessment: *(AI 2010)*
A. Formal thought disorder
B. Acute alcohol intoxication
C. Chronic severe physical illness
D. Social isolation

26. A 50-year-old male presents with a three year history of irritability, low mood, lack of interest in surroundings and general dissatisfaction with

everything. There is no significant disruption in sleep and appetite. He is likely to be suffering from:

A. Major depression
B. No psychiatric disorder
C. Dysthymia
D. Chronic fatigue syndrome

27. A patient is depressed for past 3 years, does not go out of his house much and is cut off from the society. But with normal sleep and normal weight. Most probable diagnosis is? *(DNB December 2011)*

A. Major depression
B. Dysthymia
C. Chronic fatigue syndrome
D. No psychiatric illness

Treatment

28. Which is not a serotonin norepinephrine reuptake inhibitor: *(PGI Nov 2009)*

A. Paroxetine
B. Mirtazapine
C. Escitalopram
D. Venlafaxine

29. SSRIs should be carefully used in the young for the management of depression due to increase in: *(DNB NEET 2014-15)*

A. Nihilism ideation
B. Guilt ideation
C. Suicidal ideation
D. Envious ideation

30. Features of serotonin syndrome associated with SSRIs, and MOAIs are all *except*: *(DNB NEET 2014-15)*

A. Tremors
B. Agitation
C. Cardiovascular collapse
D. Hypothermia

31. The clinical effects of the antidepressant drugs is mainly based on: *(DNB NEET 2014-15)*

A. Change in neurotransmitter receptor sensitivity
B. Decreased levels of neurotransmitters
C. Change in efficacy of neurotransmitters
D. None of the above

32. Mechanism of action of bupropion is: *(DNB NEET 2014-15)*

A. Increased levels of GABA
B. Increased levels of norepinephrine in the synaptic cleft
C. Increased levels of dopamine in the synaptic cleft
D. Both B and C

33. Repetitive transcranial magnetic stimulation (rTMS) is approved by USFDA for the treatment of: *(AI 2012)*

A. Resistant schizophrenia
B. Obsessive compulsive disorder
C. Acute psychosis
D. Depression

34. A young female on antidepressants presents to the emergency with altered sensorium and hypotension. ECG reveals wide QRS complexes and right axis deviation. What is the next best step? *(AIIMS Nov 2015)*

A. Sodium bicarbonate
B. Hemodialysis
C. Fomepizole
D. Flumazenil

35. Rathi, 26-years-old female has been diagnosed to be suffering from depression. Now for the past 2 days she has suicidal tendency, thought and ideas. The best treatment is: *(AIIMS 2001)*

A. Amitriptyline
B. Selegiline
C. Haloperidol + chlorpromazine
D. ECT

36. A patient comes in stuporous condition. Patient's parents give history of patient being continually sad and suicidal attempts and not eating and sleeping for most of the time. The treatment is: *(AIIMS 2000)*

A. ECT
B. Antidepressant
C. Antipsychotic
D. Sedative

37. A patient on antidepressant therapy developed sudden hypertension on consuming cheese. The antidepressant is possibly: *(PGI 1999)*

A. Amitriptyline
B. Tranylcypromine
C. Fluoxetine
D. Sertraline

38. Tricyclic antidepressants have all of the following actions *except*: *(PGI 1999)*

A. Anticholinergic action
B. Anti MAO (monoamine acid oxidase) action
C. Blocks 5 HT (serotonin) or NE (norepinephrine) reuptake
D. Causes sedation

39. A patient on treatment for psychiatric disorder takes overdose of a drug, develops bradycardia, hypotension, decreased sweating and salivation. The likely drug is: *(AIIMS 1999)*

A. Amitriptyline
B. Lithium
C. Selegiline
D. Amphetamine

40. Tricyclic antidepressant are contraindicated in: *(DNB 1997, AI 1991)*
A. Glucoma
B. Brain tumor
C. Bronchial asthma
D. Hypertension

41. Following drugs have abuse liability *except*: *(DNB 2003)*
A. Buprenorphine
B. Alprazolam
C. Fluoxetine
D. Dextropropoxyphene

42. Tianeptine acts by: *(AIIMS 1998)*
A. MAO inhibitor
B. Serotonin uptake inhibitor
C. Serotonin uptake enhancer
D. 5-HT agonist

43. What is/are the side effects of SSRI:
A. Insomnia
B. Sedation
C. Nausea
D. Seizure precipitation
E. Weight gain

44. Not true regarding serotonin syndrome is:
A. It is predictable and not idiosyncratic
B. SSRIs and MAOIs cause it
C. IV dantrolene is the treatment of choice
D. Hypertension, hyperthermia and hyperreflexia are the signs

45. Stimulation of which of the following nerve cause elevation of mood: *(AIIMS Nov 2009)*
A. Olfactory nerve
B. Optic nerve
C. Trigeminal nerve
D. Vagus nerve

46. Following are the somatic therapies used in depression, *except*: *(DNB NEET 2014-15)*
A. Electroconvulsive therapy
B. Deep brain stimulation
C. Transcranial magnetic stimulation
D. Ultrasound brain stem stimulation

47. The evidence-based psychological therapy of choice for depression is: *(AIIMS May 2014)*
A. Group discussion therapy
B. Counselling
C. Cognitive behavioral therapy
D. Psychological psychotherapy

48. Phototherapy is used to treat which of the following psychiatric condition: *(DNB NEET 2014-15)*
A. Depression
B. Mental retardation
C. Schizophrenia
D. Obsessive compulsive disorder

Suicide

49. Increased suicidal tendency is associated with: *(DNB NEET 2014-15)*
A. Increased noradrenaline
B. Decreased serotonin
C. Decreased dopamine
D. Increased GABA

50. Risk factor for suicide in depression are all *except*: *(DNB June 2011)*
A. Female
B. Male > 45 years
C. Child with conduct disorder
D. Family history

51. Suicidal tendencies are most common in: *(PGI 2000)*
A. Involutional depression
B. Reactive depression
C. Psychotic depression
D. Childhood depression

52. Emile Durkheim is linked with work on which of the following conditions in psychiatry? *(DNB NEET 2014-15)*
A. Suicide
B. Obsessive compulsive disorder
C. Anxiety disorder
D. Schizophrenia

53. Incidence of suicide in India is: *(PGI June 2005)*
A. 8-10/100 population
B. 8-10/1000 population
C. 8-10/10000 population
D. 8-10/100000 population

54. Suicidal tendencies are seen in: *(PGI 2002)*
A. Depression
B. Post-traumatic stress disorder
C. Schizophrenia
D. Substance abuse
E. Anxiety

Bipolar Disorder

Classification

55. Chromosome associated with bipolar disorder: *(PGI Dec 2005)*

A. Chromosome16
B. Chromosome 13
C. Chromosome 18
D. Chromosome 11
E. Chromosome 23

56. Bipolar II disorder includes: *(DNB NEET 2014-15, AIIMS 2011)*

A. Cyclothymic disorder
B. Dysthymia
C. Single manic episode
D. Major depression and hypomania

57. All of the following are included in diagnosis of bipolar disorder *except*: *(AI, 2007)*

A. Mania alone
B. Depression alone
C. Mania and depression
D. Mania and anxiety

58. Which of the following is/are included in bipolar disorders: *(PGI Nov 2010)*

A. Hypomania
B. Cyclothymia
C. Paranoid disorder
D. Hyperthymia
E. Kleptomania

59. The period of normalcy is seen between two psychosis. The diagnosis is: *(AI 1999)*

A. Schizophrenia
B. Manic depressive psyhosis
C. Alcoholism
D. Depression

Symptoms and Diagnosis

60. According to the ICD-10 revision, for establishing a diagnosis of mania, the symptoms should persist for at least: *(AIIMS May 2014, DNB 2010)*

A. 1 week
B. 2 weeks
C. 3 weeks
D. 4 weeks

61. The clinical features of mania include: *(PGI 2006, 2002)*

A. Anhedonia
B. Elated mood
C. Avolition
D. Delusion of grandiosity
E. Distractibility

62. Mania is characterized by: *(PGI 1999)*

A. Paranoid delusions
B. Loss of orientation
C. High self esteem
D. Loss of insight

63. Which of the following is not a symptom of mania: *(DNB NEET 2014-15)*

A. Distractibility
B. Elated mood
C. Delusion of grandeur
D. Increased sleep

Clinical Vignettes

64. A 20-year-old man has presented with increased alcohol consumption and sexual indulgence, irritability, lack of sleep, and not feeling fatigued even on prolonged periods of activity. All these changes have been present for 3 weeks. The most likely diagnosis is: *(AI 2003)*

A. Alcohol dependence
B. Schizophrenia
C. Mania
D. Impulsive control disorder

65. A 67-year-old lady is brought in by her 6 children saying that she has gone senile. Six months after her husband's death she has become more religious, spiritual and gives lots of money in donation. She is occupied in too many activities and sleeps less. She now believes that she has a goal to change the society. She does not like being brought to the hospital and is argumentative on being questioned on her doings. The diagnosis is: *(AI 2002)*

A. Depression
B. Schizophrenia
C. Mania
D. Impulse control disorder

66. A 42-year-old male with a past history of a manic episode presents with an illness of 1 month duration characterized by depressed mood, anhedonia and profound psychomotor retardation. The most appropriate management strategy is prescribing a combination of: *(AIIMS 2004)*

A. Antipsychotics and antidepressants
B. Antidepressants and mood stabilizers
C. Antipsychotics and mood stabilizers
D. Antidepressants and benzodiazepines

Treatment

67. Drug of choice in acute mania is: *(DNB NEET 2015)*

A. Lithium B. Chlorpromazine
C. Valproic acid D. Risperidone

68. Which of the following drugs is/are used in treatment of acute mania? *(DNB NEET 2014-15)*
A. Lithium B. Oxcarbazepine
C. Risperidone D. All the above

69. Treatment of bipolar disorder includes: *(PGI 2011)*
A. Antidepressant drugs
B. Aversion therapy
C. ECT
D. Lithium carbonate

70. Drug of choice for rapid cycling manic depressive psychosis (bipolar disorder) is: *(DNB 2004, AI 1999)*
A. Lithium B. Carbamazepine
C. Sodium valproate D. Haloperidol

71. Prophylactic maintenance serum levels of lithium is: *(AI 1994, DNB 1997)*
A. 0.2–0.8 mEq/L B. 0.7–1.2 mEq/L
C. 1.2–2.0 mEq/L D. 2.0–2.5 mEq/L

72. True about Lithium toxicity: *(PGI 2012)*
A. Causes ebstein anomaly
B. Decreases neutrophil count
C. Decreases eosinophil count
D. Optimum concentration is 0.2–0.6 mEq/L
E. Decreases sodium excretion

73. True about Lithium treatment in mania:
A. Commonest side effect is tremor
B. Toxic level is <1.5 mg/ dL serum level
C. Amyloid is DOC for Li induced diabetes insipidus
D. Lithium is 90% protein bound
E. Tremor is treated with propranolol

74. A patient is brought to the casualty in the state of altered sensorium. He was on lithium treatment for affective disorder and has suffered through an attack of epileptic fits. On examination he has worsening tremors, increased DTR's and incontinence of urine. He has also undergone an episode of severe gastroenteritis 2 days ago. The serum lithium was found to be 1.95 mEq/L. The probable cause for his present state is: *(AIIMS 2001)*
A. Lithium toxicity B. Dehydration
C. Manic episode D. Depressive stupor

75. Best use of lithium is in: *(DNB NEET 2014-15)*
A. Treatment of schizophrenia
B. Treatment of recurrent depression
C. Treatment of first depressive episode
D. Prevention of recurrence in bipolar mood disorder

76. A male patient with bipolar disorder is controlled on medications. Symptoms of mania start to appear whenever he himself tapers down the drugs. What type of treatment can improve compliance in this patient? *(AIIMS Nov 2015)*
A. Psychoeducation
B. CBT
C. Supportive psychotherapy
D. Insight oriented psychotherapy

77. All of the following are mood stabilizing drug in bipolar disorder *except*: *(PGI MAY 2013)*
A. Lithium B. Valproate
C. Carbamazepine D. Clonazepam
E. Lamotrigine

78. A 30-years-old pregnant woman comes to your clinic with decreased sleep, increased appetite and hyperactivity for last 2 weeks. A diagnosis of mania is made. Further probing reveals four episodes of major depression in the past two years. What drug will you prescribe to this patient? *(AIIMS Nov 2015)*
A. Haloperidol B. Lithium
C. Promethazine D. Clonazepam

ANSWERS

1. B.
2. B.
3. D.
4. A.
5. A, C and D.
6. A, C.
   Depression is the most common psychiatric illness associated with both hypothyroidism and hyperthyroidism. Also, in adrenal disorders like Cushing's syndrome and Addison's disease, depression is commonly associated.
7. A, B, C. In hypopituitarism, depression is commonly seen.
8. C. Few common medications which cause depression include antihypertensives (reserpine, methyldopa, beta blockers), steroids (corticosteroids, oral contraceptive pills), barbiturates and benzodiazepines (like clonazepam).

9. C.
10. B.
11. A. According to DSM-IV and DSM-5, to diagnose depression at least one of the following two symptoms should be present (1) depressed mood (2) loss of interest or pleasure.
12. C. There are characteristic disturbances of sleep (early morning insomnia and reduced latency of REM sleep) in depression.
13. A,B,C.
    Psychotic symptoms are seen more commonly in both endogenous and melancholic depression (depression in involutional stage). It can also be seen in double depression, though less commonly (double depression is depression superimposed over dysthymia).
14. A,C.
    The presence of psychotic symptoms itself makes a depression severe, hence psychotic symptoms are seen only in severe depression. The psychotic symptoms can be either mood congruent or mood incongruent.
15. A.
16. A, C and D.
    The recovery is often incomplete in patients with depression.
17. A.
18. A. The most common type of postpuerperal psychosis is depression.
19. B. In this case, patient has significant somatic symptoms such as aches and pain and generalized weakness. In a large number of patients, depression presents mostly with somatic complaints and patient may deny psychological symptoms such as sadness of mood. Further, in this patient there are sleep and appetite abnormalities along with loss of interest which clinches the diagnosis of depression.
20. A. This patient has depression with psychotic symptoms. The patient belief that he committed sins in his life, and the fact that despite his wife assurances he continues to hold the belief is suggestive of delusion. Hence, this patient should be treated with antidepressants and antipsychotics.
21. B. In children and adolescents, depression frequently presents with irritability, lack of interest and changes in behavior such as withdrawn behavior or quarrelsome behavior. Its important to rule out depression first.
22. C. The diagnosis in this case is depression. The depression can be precipitated by various stressors, and irrespective of what precipitated it, it should always be treated. Further, all the available antidepressants have similar efficacy and the choice of antidepressants is usually dictated by the side effect profile of the drug. SSRIs are usually used as the first antidepressants because of their favorable side effect profile.
23. A.
24. A. The postpartum blue includes transient symptoms such as irritability, tearfulness, sadness of mood, decreased sleep and appetite. These symptoms usually get resolved by 10th day postpartum.
25. B. The suicidal intent in a person with formal thought disorder (most likely a patient with schizophrenia), chronic severe physical illness and social isolation, should be taken very seriously and immediate measures taken must include assessment by a specialist. If patient has expressed suicidal intent in an inebriated state, it must still be ensured that he doesn't harm himself however a specialist assessment can be deferred till he is sober.
26. C. Long standing and less severe depressive symptoms along with normal sleep and appetite indicates dysthymia.
27. A. In this case, the better answer would be depression. Though the question, mentions that sleep and appetite is normal, however the fact that he is cut off from society indicates severe symptomatology and hence depression would be a better diagnosis than dysthymia here. Usually in patients with dysthymia, the overall functioning is minimally affected and that's an important clue for the diagnosis.
28. A,B,C.
29. C. The use of SSRIs can increase suicidal ideations. This side effect is more common in children and adolescents and hence these medications should be used cautiously in that age group.
30. D. In serotonin syndrome, hyperthermia is a feature.
31. A. The recent research has shown that its not the increase in neurotransmitters levels in synapse which causes antidepressant effect. Rather, secondary to increased neurotransmitter levels, the

receptor sensitivity changes over a course of time and that is responsible for antidepressant effect.

32. D.
33. D.
34. A. This patient was most likely on tricyclic antidepressants and it appears to be a case of tricyclic antidepressant over-dosage as the patient is experiencing arrhythmias, hypotension and has also developed altered sensorium. The mainstay of treatment in TCA induced cardiotoxicity is intravenous sodium bicarbonate. It is used if the QRS interval is prolonged (usually more than 100 milliseconds) and can reverse the toxic effects of TCAs. Because of large volume of distribution and high protein binding of TCAs, hemodialysis is not effective. Further flumazenil and fomepizole have no role.
35. D. In depression with suicide risk, ECT is the treatment of choice.
36. A. This patient most likely has depression with stupor. ECT is again the treatment of choice.
37. B. This is history of cheese reaction on MAO inhibitors.
38. B.
39. A. The symptoms are suggestive of tricyclic antidepressants overdose (anticholinergic side effects).
40. A. Due to anticholinergic action, TCAs should be avoided in glaucoma.
41. C. SSRIs do not have any abuse liability. Both opioids (buprenorphine, dextropropoxyphene) and benzodiazepines (alprazolam) have abuse liability.
42. C.
43. A,B,C,E.
    SSRIs can cause both sedation as well as insomnia. In long-term they can cause weight gain. Nausea, diarrhoea, anxiety and sweating are some common side effects.
44. C. Dantrolene is not the treatment of choice, though it is at times used to control the hyperthermia.
45. D. Vagal nerve stimulation can be used for treatment of depression.
46. D. ECT, deep brain stimulation as well as transcranial magnetic stimulation can be used for treatment of depression.
47. C.
48. A. Depression associated with a seasonal pattern can be treated with phototherapy.
49. B. Decreased levels of 5 HIAA (which is a metabolite of serotonin) are related to increased risk of suicide.
50. A. Males have higher suicide risk than females. Please remember that females make more suicide attempts than males, however males complete suicide more commonly than females. This difference is mostly due to method used, males tend to use more lethal methods such as gun and hence are more likely to complete suicide.
51. A, C.
    Endogenous depression, depression with psychotic symptoms (psychotic depression) and involutional depression (depression with melancholic features) are associated with higher suicide risk.
52. A. Emile Durkheim studied extensively the social factors associated with suicide.
53. D. The data for incidence of suicide is released by government every year. According to NCRB (National Crime Record Bureau), in 2014, the suicide rate in India was 10.6/lac of population.
54. A,C,D.
55. C.
56. D.
57. B. Even a single episode of mania is sufficient to make a diagnosis of bipolar disorder.
58. A,B.
59. B. Manic depressive psychosis was the older name for bipolar disorder. In bipolar disorder, in between the episodes, patient is usually normal.
60. A.
61. B,D,E.
62. C,D.
    Insight is absent in mania and usually high self esteem is also a clinical feature.
63. D. The sleep is usually decreased in mania
64. C. Please remember that in manic stages, the substance intake also frequently increases.
65. C. Kindly don't get confused with the fact that the symptoms are following husband's death. Even negative life events can precipitate manic episode. This patient has increased religiosity, overspending (giving excessive donation), increased activity levels, decreased sleep, new interests and goals (of changing society) and lack of insight (doesn't want to come to hospital). All these symptoms are suggestive of mania.

66. B. The patient had a manic episode in past and currently he is in severe depression (as suggested by profound psychomotor retardation). The complete diagnosis would be bipolar disorder (currently severe depressive episode). Hence, this patient should receive both mood stabilizers and antidepressants.
67. A. This question doesn't make much sense. There is no drug of choice in acute mania. The drug is chosen depending on the symptoms. If symptoms are severe and we need immediate improvement, a combination of mood stabilizers with antipsychotic would be preferred. If symptoms are less severe, either lithium, valproate or an antipsychotic can be used. Here, the answer is given as lithium as it is the prototypical drug used in mania and can be considered as a gold standard. It is true that lithium takes 1-3 weeks for its onset of action, but that doesn't mean that it can't be used in acute mania. In fact, all the guidelines start the treatment algorithm for acute mania with lithium only.
68. D.
69. A,C,D.
    Lithium and antidepressant are obviously used in bipolar disorders. In cases of severe mania which is not responding to medications, or in bipolar depression with high suicide risk, ECTs can also be used.
70. C.
71. B.
72. E > A.
    Dehydration as well as low sodium levels predispose to lithium toxicity. Ebstein anomaly is a teratogenic effect of lithium and as such is not a sign of lithium toxicity. Lithium causes neutrophilia and eosinophilia.
73. A, C, E.
74. A. The gastroenteritis causes dehydration and may result in lithium toxicity (the body handles lithium similarly to sodium. In presence of dehydration, sodium absorption is increased and lithium absorption is also increased in kidneys). The lithium toxicity may present with tremors, increased reflexes and seizure.
75. D.
76. A. Psychoeducation is a form of psychological intervention in which patient as well as family members are educated about various aspects of disease and its treatment. It involves discussion about the symptoms, the need for medications as well as maintenance of a regular life style. Psychoeducation decreases the chances of relapses in bipolar disorder.
77. D.
78. A. This is an interesting question and slightly controversial too. We need to consider various fact. First of all, since this patient had 4 episodes (mania + depression) in last 5 years, prior to the current manic episode, ideally she should already be on a prophylaxis. However we have not been provided with any information about the prophylaxis. Now, the question is asking about the management of acute manic episode. According to APA (American Psychiatric Association) practice guidelines, in a patient with severe mania a combination of mood stabilizers (like lithium or valproate) and antipsychotics should be used, whereas in mild to moderate mania, monotherapy with lithium, valproate or an antipsychotic (such as haloperidol) can be used. This is for all patients and not specifically for pregnancy. Further, APA guidelines mention that "in pregnancy, antipsychotics may represent an alternative to lithium for treating the symptoms of mania. In addition, there is no evidence of teratogenicity with exposure to haloperidol, perphenazine, thiothixene and trifluoperazine". It must also be remembered that lithium takes around 1-3 weeks to start acting whereas antipsychotics have a much faster onset, and in a patient who is in acute manic episode for last two weeks, we need faster response. Maudsley prescribing guidelines, which is another well accepted prescribing guideline says "In acute mania in pregnancy, use an antipsychotic, if ineffective, consider ECT". Hence, in view of these reference for acute management of mania in pregnancy, haloperidol would be a better answer than lithium.

Chapter

4 Neurotic, Stress Related and Somatoform Disorders

ANXIETY

Anxiety is a common experience. It is an alerting signal and helps a person to take measures to deal with a threat. It must be differentiated from fear. Fear is the response one would have if he sees a snake. The fear is a response to a known, external and definite threat. Anxiety is the response one would have before exams. It is the response to an unknown, internal and vague threat.

Manifestations of Anxiety:

- Feeling of nervousness
- Sweating, tachycardia, restlessness, tremors, mydriasis
- Diarrhea, urinary frequency
- **Cold clammy skin**[Q], hyperreflexia.

ANXIETY DISORDERS

Anxiety disorders are a group of related disorders which include:

- Panic disorder
- Agoraphobia
- Specific phobia
- Social anxiety disorder
- Generalized anxiety disorder.

Panic Disorder

Panic attack is an acute attack of intense anxiety accompanied by "**feeling of impending doom**". The symptoms during panic attack usually involve sudden onset of **palpitations**, **chest pain**, **choking sensations**, dizziness and feeling of unreality (depersonalization or derealization). Along with these physical symptoms there is also a **fear of dying**, **losing control** or **going mad**.

In panic disorder, the patients have recurrent panic attacks which are not restricted to any particular situation or setting. The patient is usually free from anxiety symptoms in between the attack however anticipatory anxiety (fear that next panic attack can occur anytime) is common. The mean age of presentation is around 25 years and females are two to three times more commonly affected than men. Panic disorder presents with a number of comorbid conditions, most commonly **agoraphobia**.

The neurotransmitters which have been implicated in panic disorders include **norepinephrine, serotonin and GABA**[Q]. Recently **cholecystokinin**[Q] has also been found as a mediating neurotransmitter in panic disorder.

Differential Diagnosis

Due to predominance of somatic symptoms, panic disorder must be differentiated from common physical disorders such as **myocardial infarction**[Q], **angina, mitral valve prolapse asthma, pulmonary embolism, pheochromocytoma, carcinoid syndrome, hypoglycemia, hyperthyroidism**.

Treatment

Usually a combination of pharmacotherapy and psychotherapy is used.

A. *Pharmacotherapy*: The drugs mostly used include **benzodiazepines**[Q] **and SSRIs**. Frequently, both benzodiazepines and SSRIs are started concurrently, followed by slow tapering of benzodiazepines. Other medications which are used include venlafaxine, buspirone and clomipramine.

B. *Psychotherapy*: **Cognitive behavioral therapy**[Q] is quite effective in management of panic disorder. Other less

commonly used therapies include Relaxation techniques and psychodynamic psychotherapy.

Agoraphobia

It is the fear of places from where **escape might be difficult**[Q]. This basic fear can manifest in various forms such as:

- Fear of being in open spaces[Q]
- Fear of crowded places[Q]
- Fear of enclosed places[Q]
- Fear of travelling alone[Q]
- Fear of using public transportations.

Agoraphobia and panic disorder usually coexist. Agoraphobia is the most disabling phobia and patient may become home bound.

Treatment

A. *Pharmacotherapy*: The pharmacotherapy usually includes benzodiazepines and SSRIs. Other medications which are used include venlafaxine, buspirone and clomipramine.

B. *Psychotherapy*: Cognitive behavioral therapy is frequently used. **Behavioral therapy (using techniques such as systematic desensitization, exposure and response prevention, flooding[Q])** is also effective. Less commonly used are **relaxation techniques** and **psychodynamic psychotherapy**.

Specific Phobias

A specific phobia is a strong, persistent and irrational fear of an object or a situation. The DSM-5 includes distinctive types of phobias:

1. Animal type (spiders, insects, dogs)
2. Natural environment type (storms, water, height, etc.)
3. Blood-injection-injury type (needles, invasive medical procedures)
4. Situational type (cars, elevators, planes)
5. Others.

Table 1: Common phobias.

Acrophobia	Fear of heights
Ailurophobia	Fear of cats
Hydrophobia	Fear of water
Claustrophobia	Fear of closed spaces
Cynophobia	Fear of dogs
Mysophobia	Fear of dirt and germs
Pyrophobia	Fear of fire
Xenophobia	Fear of strangers
Zoophobia	Fear of animals
Thanatophobia	Fear of death

Treatment

A. *Pharmacotherapy*: The pharmacotherapy is at best used as an adjunct to psychotherapy and includes benzodiazepines, beta blockers and, SSRIs.

B. *Psychotherapy:* Behavior therapy is the most **effective treatment**[Q] for phobias. A variety of behavioral techniques, all of which involve exposure to phobic stimulus, have been used, which are described as follows:

- *Systematic desensitization*: In this method, the patient is exposed to a series of anxiety provoking stimuli, starting with the least anxiety provoking stimulus. After the exposure, relaxation techniques (usually progressive muscle relaxation) are used to induce relaxation. As the patient masters the technique of relaxation in the presence of an anxiety provoking stimuli, he moves up to the next stimulus. This technique has **best evidence**[Q] in treatment of phobias.
- *Therapeutic graded exposure or in vivo exposure (or exposure and response prevention)*: It is similar to systematic desensitization except that no relaxation techniques are used. The patient learns to get habituated to anxiety.
- *Flooding (Implosion)*: Here, the patient is exposed to phobic stimulus in its most severe form. The patient experiences intense anxiety which gradually decreases.
- *Modeling* ***(Participant modeling[Q])***: Here, therapist himself makes the contact with phobic stimulus and demonstrates this to the patient. Patient learns by imitation, primarily by observation. Apart from behavioral therapy, other less commonly used psychotherapeutic techniques include Psychodynamic psychotherapy (Insight oriented psychotherapy), hypnosis, supportive therapy and family therapy.

Social Anxiety Disorder (Social Phobia)

It involves the fear of social situations, including situations that involve contact with strangers. Patients with this disorder are afraid of **embarrassing themselves** in a social situation. The treatment is usually similar to specific phobias.

Generalized Anxiety Disorder

This disorder is characterized by excessive anxiety which is generalized and persistent and is not restricted to any particular situation (also called "**freely floating" anxiety**) and **excessive worries**. The physical symptoms associated with anxiety are also present. The treatment includes pharmacotherapy (SSRIs, benzodiazepines, buspirone and venlafaxine) and psychotherapy (cognitive behavioral, insight oriented psychotherapy and supportive psychotherapy).

OBSESSIVE COMPULSIVE AND RELATED DISORDERS

Obsessive-Compulsive Disorder (OCD)

The essential feature of this disorder includes recurrent obsessional thoughts and compulsive acts.

Obsessions are defined by the following properties:

A. **Recurrent and intrusive** thoughts, images or impulses which cause marked anxiety or distress
B. The person recognizes that the obsessional thoughts, images or impulses are a **product of their own mind**[Q] (and not imposed by others such as is in thought insertion)
C. The person recognizes that the thoughts, images or impulses are **irrational** and **senseless**[Q] and experiences the obsessions and compulsions as **ego dystonic** (i.e. unwanted and unacceptable) **(in contrast a patient with a delusion, believes in the delusion and doesn't find it senseless or irrelevant)**
D. The person attempts to suppress or resist such thoughts, images or impulses or tries to neutralize them, with some other thoughts or actions.

Compulsions are defined by following properties:

A. Repetitive behaviors (such as hand washing, checking) or mental acts (such as counting, praying) that the person performs in response to an obsession.
B. The repetitive behaviors and mental acts are done to reduce the distress and anxiety caused by obsessions.

The symptoms of obsessions and compulsions should be present for at least **two weeks** for the diagnosis of OCD

The lifetime prevalence of OCD is around 2-3%. Depression is the most common comorbidity in OCD and both must be treated together.

Etiology

Serotonin dysregulation[Q] is considered to be involved in the **etiopathogenesis** of OCD. Less evidence exists for dysregulation of noradrenergic system in OCD.

The neuroanatomical model of OCD emphasizes the role of **cortico-striatal-thalamic-cortical circuitry (CSTC)**. This circuit starts with prefrontal cortex and projects to striatum which further projects to thalamus and then back to prefrontal cortex. Dysfunction in this circuit is considered to be responsible for the symptoms of OCD.

Symptoms

OCD has four major symptom patterns.

A. *Contamination*: Most commonly patients present with **obsession of contamination** followed by **washing behavior** and avoidance of situations which provoke obsessive thoughts. For example, a patient repeatedly gets thought that his hands are dirty, which causes anxiety, he understands that this thought is senseless and tries to stop this thought (obsessional thought) however is forced to repeatedly wash his hands (compulsive behavior) which decreases this thought for some time. He further avoids using public toilet as these thoughts get increased in a dirty environment (avoidance).
B. *Pathological doubt*: Second most common pattern is the **obsession of doubt** which is usually followed by **compulsion of checking**. For example, a patient would repeatedly doubt if he had locked the door properly (obsession) and would repeatedly check the lock (compulsion).
C. *Intrusive thoughts*: Here, patient gets **intrusive obsessional thoughts** without an observable compulsion, though mental compulsions are commonly present. The thoughts are usually with **sexual and aggressive content**[Q]. For example, a patient repeatedly gets the thought about having sex with god, this thought causes intense anxiety and patient understand that this thought is senseless and tries to stop the thought but is not able to do so (obsessional thought), to decrease the anxiety patient starts to chant prayers in his mind which decreases the anxiety temporarily (mental compulsions).
D. *Symmetry*: The patient has a **need for symmetry** or **precision**. This can result in **compulsion of slowness**.

For example, a patient would take hours while arranging pens on the table. He would ensure that all the pens are aligned exactly parallel to each other and are at exact same distance to each other.

Course and Prognosis

Around 50% of patients with OCD have a sudden onset of symptoms. The course is usually chronic. Around 20–30% of patients have significant improvement in their symptoms, around 40–50% have moderate improvement and remaining 20–40% have no improvement or further deterioration.

Treatment

A **combination**[Q] of pharmacotherapy and psychotherapy is the preferred approach.

A. *Pharmacotherapy*: The standard approach is to start treatment with an **SSRI**[Q]. Clomipramine is also considered the first line treatment however due to its adverse side effect profile, it is rarely used as a first drug. If treatment with SSRIs or clomipramine is unsuccessful, augmentation with antipsychotics (like **haloperidol**[Q], quetiapine, risperidone and olanzapine) is used. Other drugs which have been used include venlafaxine, lithium, valproate and **carbamazepine**[Q].

B. *Psychotherapy*: Cognitive behavioral therapy relying primarily on behavioral technique of **exposure and response prevention**[Q] (ERP) has the best evidence amongst all the psychotherapeutic techniques. Exposure and response prevention involves exposure of patient to a stimulus which is known to produce obsessional thoughts (**exposure**) followed by asking the patient to not indulge in the compulsive behavior (**response prevention**).

Other types of behavioral therapy such as desensitization, thought stopping, flooding, and aversive conditioning have also been used.

Psychodynamic psychotherapy, family therapy can also be used.

C. *Other treatment modalities*: In extreme cases that are treatment resistant electroconvulsive therapy and psychosurgery can be considered. The psychosurgical techniques usually include **cingulotomy** and **capsulotomy** (also known as sub **caudate tractotomy**).

TRAUMA AND STRESSOR RELATED DISORDERS

Post-traumatic Stress Disorder (PTSD) and Acute Stress Disorder (ASD)

These disorders follow significant traumatic events in which there is a serious injury or threat of serious injury to self or others and a feeling of helplessness and horror during the event. The traumatic events causing PTSD and ASD are sufficiently overwhelming to affect anyone (such as war, earthquake, floods, rape, serious accidents). The clinical symptoms are usually seen in the following three domains:

- *Intrusion symptoms*: These are characterized by **flashbacks**[Q] (individual may feel as if trauma is reoccurring) and **nightmares** (dreams about the trauma).
- ***Avoidance***: The patient avoids all those stimuli which can remind him of the trauma.
- *Arousal symptoms*: These include hypervigilance, exaggerated startle response, insomnia, poor concentration.

In addition, symptoms such as **emotional numbing**[Q], **emotional detachment**[Q] and **anhedonia**[Q] can also be present. The onset of symptoms may be delayed, if symptoms appear **6 months**[Q] after the trauma, it is diagnosed as PTSD with **delayed onset**[Q].

For a diagnosis of post-traumatic stress disorder, the above mentioned symptoms should be present for more than one month, if the duration of symptoms is less than one month, a diagnosis of acute stress disorder is made.

The area of brain involved in the pathogenesis of PTSD are **hippocampus** and **amygdala**[Q].

Treatment

Selective serotonin reuptake inhibitors **(SSRIs)**[Q] are the first line pharmacological treatment in PTSD. Psychotherapeutic interventions include **cognitive behavioral therapy**[Q] (treatment of choice), psychodynamic psychotherapy and eye movement desensitization and reprocessing (EMDR).

Adjustment Disorders

These disorders are characterized by emotional responses to stressful events like financial problems, medical illness, relationship problems or death of a loved one. The

symptom complex that develops usually involve anxiety and depressive symptoms. The symptoms of adjustment disorders include depressed mood, anxiety, worry, a feeling of inability to cope and some degree of disturbance in individuals daily functioning. It is at times difficult to differentiate adjustment disorder from depression (depression can also follow a negative life event). If the symptoms are severe and a diagnosis of depression can be made, the diagnosis of depression will always get precedence over the diagnosis of adjustment disorder. Also, one needs to differentiate adjustment disorder from uncomplicated bereavement/grief reactions (in uncomplicated bereavement, the symptoms and dysfunctions which develop after death of a loved one are within expected limits, whereas in adjustment disorder the symptoms and dysfunction are beyond the expectable reaction to the stressor). Other differential diagnosis of adjustment disorder includes depression, PTSD and brief psychotic disorders. These diagnoses should be given precedence if their diagnostic criterion are met, irrespective of the presence of stressors.

Treatment

Psychotherapy is the treatment of choice. Supportive psychotherapy is commonly used. The medications are used as an adjuvant to psychotherapy and include antidepressants and antianxiety drugs.

DISSOCIATIVE DISORDERS (CONVERSION DISORDERS)

These disorders were previously classified as "hysteria" however that term is no longer used. Dissociative disorders are characterized by disturbances in one or more of mental functions such as memory, identity, perception, consciousness and motor behavior. These symptoms are produced by the "psyche" (mind) to deal with the unconscious conflicts that are producing anxiety. These symptoms are produced unconsciously and help the patient to get attention. The symptoms appear suddenly and are caused by psychological trauma (such as stressful events or disturbed relationship). Quite often, the genesis of dissociative disorders is explained in terms of primary, secondary and tertiary gains. All these gains function unconsciously.

Primary gain: It refers to internal psychological motivation. For example, a person might be feeling guilty as he is not able to perform a task, however if he suddenly develops paralysis, now his guilt will decrease, as it is understood that paralyzed patient can't work. So, this patients psyche is unconsciously producing symptoms of paralysis to reduce the unpleasant guilt feelings.

Secondary gain: It refers to external psychological motivation. For example, this patient who developed sudden paralysis is now not expected to work outside or make money for the family and he is relieved of his duties.

Tertiary gain: It refers to the gain that a third person derives because of patients symptoms. For example, the wife of this paralyzed patient starts to get lots of money from her parents as they feel sympathetic towards her.

Types

A. *Dissociative amnesia*: Here, the main feature is loss of memory. The amnesia is usually for traumatic events of **personal significance**Q (such as accidents or unexpected bereavements). For example, a rape survivor is not able to recall any thing about her rape.

B. *Dissociative fugue*: It is characterized by a **sudden, unexpected travel**Q away from home or work place, with inability to recall some or all of one's past. The **basic self care is maintained**Q during the travel and patients behavior during this time may appear completely normal to independent observers. Alongside when asked, the patient may be confused about his personal identity or may even assume a new identity (e.g. a doctor may claim that he is in fact a cab driver and give a different name when asked).

> In DSM-5, dissociative fugue is not a separate diagnosis. Instead it has been made a specifier (special kind of) of dissociative amnesia.

C. *Dissociative stupor*: Here, the patient is in stupor which is caused by psychological factors.

D. *Dissociative trance and possession disorder*: It is characterized by loss of sense of identity and full awareness of the surroundings. The patient behaves as if taken over by another personality such as a goddess or a spirit. For example, a middle aged women claimed that she has been possessed by a goddess and demanded that everybody should pray in front of her.

E. *Dissociative disorders of movement and sensation*: Here the patient presents with symptoms that suggest deficit in motor or sensory functions, however there is no evidence of any physical disorder. The symptoms

are instead caused by psychological factors. Depending on the symptoms, patient may be diagnosed with dissociative motor disorder (e.g. paralysis, ataxia), dissociative convulsions (e.g. pseudoseizures) and dissociative anaesthesia and sensory loss (e.g. sensory losses, visual disturbance). The symptoms often **do not confirm**[Q] with **anatomical** and **physiological principles** (e.g. sensory loss which doesn't confirm to any nerve lesion).

> The DSM-4 had the diagnosis of "depersonalization disorder", in DSM-5 the name has been changed to Depersonalization/Derealization disorder.

The DSM-5 uses the diagnosis of **conversion disorder**[Q] (functional neurological symptom disorder) specifically for this category and classifies it along with the somatoform disorders. In ICD-10, the term conversion disorder is synonymous with dissociative disorder. In the questions given at the end of this chapter, the diagnosis of "conversion disorder" refers to the DSM-5 diagnosis. ***La belle indifference***[Q] is a phrase used to describe the feeling of indifference which patients of conversion disorders have towards their symptoms. For example, if a person suddenly has a sensory loss, say loss of vision, he would be expected to get extremely concerned about it, however the patient of conversion disorder looks completely unconcerned and this unconcern/indifference towards their symptoms is called **"*la belle indifference*"**[Q].

F. *Depersonalization/derealization disorder*: In depersonalization patient has a **feeling of unreality of self**. He feels "as if" he has changed. The patients frequently report that they feel as if they have detached from their body and are watching themselves like in a movie. The depersonalization is often accompanied by derealization, which is a feeling of unreality of the external world, as if the world is unreal.

G. *Dissociative identity disorder (multiple personality disorder)*: Here, two or more distinct personalities exist within an individual, with only one of them being evident at any particular time. The different personalities are known as **"alters"** and the personalities are unaware of each others existence.

H. *Other dissociative disorders*: This category includes **Ganser's**[Q] **syndrome**. The characteristic symptom is **approximate answers**[Q] **(vorbeigehen)**. The approximate answer are the answers which are not correct, but bear an obvious relation to the question, indicating that the question was understood. For example, when asked the color of sky, patient may answer it red. Although, the answer is not correct but it is obvious that patient understood that the question was about color. Other symptoms include **clouding of consciousness**[Q], **auditory and visual hallucinations**[Q] and other dissociative symptoms. Ganser's syndrome is frequently seen in **prisoners**, however is **not confined only to them**[Q] and can be seen in other populations also.

Treatment

Usually psychological modalities are used in the treatment of dissociative disorders. It is important that patient is not encouraged to assume a "sick-role" and it must be emphasized that the patient is normal. The secondary and tertiary gains should not be allowed otherwise the symptoms tend to become persistent. The treatment modalities include behavioral therapy, **abreaction**[Q] (in abreaction, attempt is made to bring the unconscious memories and emotions, into conscious awareness using hypnosis, medications and other techniques) and psychoanalysis.

The use of drugs is limited. Benzodiazepines, thiopentone and amytal have been used for abreaction.

SOMATOFORM DISORDERS

The patients with somatoform disorders typically present with physical symptoms which cannot be explained by any known medical condition. These patients persistently request for investigations despite repeated negative findings and reassurances by doctors. The symptoms are significantly distressing to the patient and cause impairment in social and occupational functioning.

> The DSM-5 has replaced the diagnosis of somatoform disorders with "somatic symptom and related disorders".

There are various types of somatoform disorders:

A. ***Somatization disorder***: The main feature is presence of multiple physical symptoms for which no medical cause can be ascertained. According to DSM-IV, for a diagnosis of somatization disorder, the following symptoms should be present:

> In DSM-5, the diagnosis of somatization disorder has been removed and these patients are given the diagnosis of "somatic symptom disorder". The criterion of somatic symptoms disorder include the presence of somatic symptoms and also excessive thoughts, feelings and behaviors related to these somatic symptoms.

- **Four pain symptoms** (pain at four different sites)
- **Two gastrointestinal symptoms** (such as nausea, vomiting, belching)
- **One sexual symptoms** (such as erectile or ejaculatory dysfunction)
- **One pseudoneurological symptom** (such as weakness, visual disturbance, etc).

The patient usually refuses to accept the advice or reassurance of the doctors that there is no physical cause of the symptoms. The onset and progression of symptoms usually bears a close relationship to unpleasant life events and psychological stressors.

Treatment usually involves psychotherapy. The patient should be made aware that the physical symptoms are expression of underlying emotions and should be helped to cope with the symptoms and underlying emotions.

B. ***Undifferentiated somatoform disorder***: This diagnosis is used when multiple physical symptoms are present but full picture of somatization disorder is not fulfilled.

> In DSM-5, the diagnosis of undifferentiated somatoform disorder has been removed and these patients would also get the broader diagnosis of "somatic symptom disorder".

C. ***Hypochondriasis***: This disorder is characterized by a **preoccupation** with the fear of having, or the idea that one has one or more **serious physical illnesses**[Q]. The preoccupation persists despite **normal investigation**[Q] results as well as doctors reassurances.

> In DSM-5, the diagnosis of hypochondriasis has been replaced by "illness anxiety disorder".

It is important to differentiate hypochondriasis from somatization disorder. The emphasis in hypochondriasis is on the diagnosis whereas the emphasis in somatization disorder is on the symptoms.

Also, hypochondriasis must be differentiated from delusional disorder (somatic type). In patients with hypochondriasis the belief is not as fixed as it is in delusional disorder. The patient with hypochondriasis may doubt his belief atleast for short-term, after a normal investigation or medical reassurance. In contrast in delusional disorder, the belief is fixed and totally unshakeable.

D. ***Body dysmorphic disorder***: It is characterized by the preoccupation with an **imagined defect**[Q] in body appearance. In case a slight physical anomaly is present, patient's concern for the same is exaggerated. The location of the imagined defect is usually hair, nose and skin.

> In DSM-5, the diagnosis of body dysmorphic disorder has been reordered. It is now considered as a type of OCD and related disorders and has been removed from the category of somatoform disorders (somatic symptoms and related disorders).

DSM-IV considers body dysmorphic disorder as a separate entity and a type of somatoform disorder. However ICD-10 clubs this diagnosis under the broader diagnosis of hypochondriasis.

E. ***Somatoform autonomic dysfunction***: This type is characterized by specific and unexplained autonomic symptoms such as palpitations, tremors, sweating, belching, etc.

F. ***Persistent somatoform pain disorder***: Here, the main complaint is persistent and unexplained pain. In DSM-5, this category has been subsumed under the new diagnosis of "somatic symptom disorder".

G. ***Pseudocyesis***: It is a type of somatoform disorder in which the patient has a **false belief that she is pregnant**[Q]. There are associated objective signs of pregnancy like abdominal enlargement (although umbilicus does not become everted), reduced menstrual flow or amenorrhea, subjective sense of fetal movements, breast engorgement and labour pains at the expected date of delivery. Some endocrine changes may also be present.

OTHER NEUROTIC DISORDERS

A. ***Neurasthenia***: This disorder is characterized by complaints of increased mental and physical fatigue after mild efforts. The patient is often concerned about lowered physical and mental efficiency. Associated symptoms include muscular aches and pain, sleep disturbances, irritability, dyspepsia, headache and inability to relax. The ICD-10 includes the diagnosis of fatigue syndromes under the category of neurasthenia.

B. ***Chronic fatigue syndrome (myalgic encephalomyelitis)***: This syndrome is frequently diagnosed in western countries. The symptoms are severe, debilitating fatigue, malaise, headaches, pharyngitis, low grade fever, cognitive complaints, gastrointestinal symptoms and tender lymph nodes. The diagnosis of chronic fatigue syndrome is not covered by either ICD-10 or DSM-5, however the symptoms have some resemblance to neurasthenia.

C. ***Culture bound syndrome***: These are limited to a particular culture and are not seen world wide. It is believed that local cultural beliefs and patterns of behavior have strong influence on the presentation of these syndromes. Few common culture bound syndromes are:
   - ***Dhat syndrome***[Q]: It is prevalent in Indian subcontinent. The patient has a belief that he is passing semen in urine and this is resulting in physical and mental weakness.
   - ***Koro***[Q]: The patient has a fear that his penis will retract into the abdomen and would result in death
   - *Latah*: This is characterized by automatic obedience, echolalia and echopraxia.

D. ***Factitious disorder (munchausen syndrome***[Q]***)***: Factitious disorder (also known as **hospital addiction**) is a disorder in which patients produces fake symptoms with the sole aim of obtaining medical attention (hence called **professional patients**[Q]). Unlike malingering, in which the motive is usually financial gains or avoidance of duty, the patients with factitious disorders have no recognizable motives apart from wish to get medical attention. These patients distort the history and make stories (**pseudologia fantastica**) to convince the doctors. The patients are often from the **medical and related fields**[Q] and have basic understanding of symptoms/signs of various disorders.

PSYCHOLOGICAL FACTORS AFFECTING OTHER MEDICAL CONDITIONS

The concept of psychosomatic disorders (physical disorders caused by or aggravated by psychological factors) has been known for a long time. It is clear that stress can result in many somatic symptoms. Stress is described as any circumstance, that disturbs or is likely to disturb, the normal physiological or psychological functioning of an individual.

Hans Selye described a model of stress that is known as **general adaptation syndrome**[Q]. According to this model, body reacts to stress in three stages.

Stage 1, the alarm reaction: This is the immediate response characterized by fight or flight response.

Stage 2, the stage of resistance: This is also known as stage of adaptation. Here, the body adapts to the stress. For example, if the stress is starvation, body reduces the energy consumption and decreases physical activity.

Stage 3, the stage of exhaustion: If the stress continues, the resistance of body gradually decreases and finally collapses.

Almost all the organ systems may be involved in psychosomatic disorders. The important ones include:

A. *Gastrointestinal system*: A large number of GI disorders such as peptic ulcers, Crohn's disease, ulcerative colitis are affected by psychological causes. Irritable bowel syndrome, which is characterized by symptoms such as abdominal pain, cramps, alteration of bowel habits (diarrhea or constipation) is a well known example of psychosomatic disorder.

B. *Respiratory system*: Asthma, COPD and hyperventilation syndrome are known to have psychological component. Hyperventilation syndrome is characterized by rapid and deep breathing for several minutes and accompanying symptoms of suffocation, giddiness, paraesthesia and syncope due to falling PCO_2 levels in blood.

C. *Cardiovascular system*: Cardiovascular disorders such as hypertension, coronary artery diseases, cardiac arrhythmias are known to be affected by psychological causes. Of particular interest is the association of so called **type A personality with coronary artery disease**[Q]. The type A personality is characterized by easily aroused anger, impatience, aggression, competitive striving and hostility. Type A pattern is associated with a nearly two fold risk of MI and CAD related mortality. In comparison type B-personality is characterized by calmness, relaxed attitude, low competitiveness and lesser chances of coronary artery diseases.

D. *Musculoskeletal system*: Disorders like rheumatoid arthritis, systemic lupus erythematosus are known to have psychological components. Of particular note is fibromyalgia, a disease characterized by pain and stiffness of soft tissues such as muscle and ligaments. The patient often reports of local areas of tenderness, also known as "trigger points". There might be associated symptoms such as anxiety, fatigue and inability to sleep.

E. Other disorders such as endocrinological disorders, skin disorders, headaches also have psychological contributions.

Treatment: Patients with all forms of somatoform disorders usually resist psychiatric treatment. The treatment is usually focused on helping the patient understand the effect of psychological factors in the genesis of symptoms while acknowledging that the symptoms are real and distressing to the patient. Psychotherapeutic techniques like

group psychotherapy, insight oriented psychotherapy, behavior therapy, cognitive therapy and hypnosis may be useful. Relaxation techniques and stress management training may also be required.

DEATH AND DYING

When an individual is informed about his impending death, he usually goes through a series of responses. These stages of death and dying, were proposed by **Elizabeth Kubler-Ross**[Q].

Stage 1: *Denial and shock*—This is characterized by refusal to accept the diagnosis and a reaction of shock.

Stage 2: *Anger*—In this stage patients become irritable and angry at family members, friends , doctors and even God.

Stage 3: *Bargaining*—In this stage patient try to bargain with family members and even God. For example, they may pledge to god that they will regularly go to temples if god cures them.

Stage 4: *Depression*—The patient now start showing symptoms of depression such as sadness of mood, withdrawal and suicidal thoughts

Stage 5: *Acceptance*—Finally patient accepts that death is inevitable and their feelings may change to neutral or even happiness.

Grief, Bereavement and Mourning

Although these terms have been used interchangeably, they have specific meanings. **Bereavement** means the **state** of being deprived of someone due to death. **Grief reaction** is the **psychological feeling** precipitated by the death of a loved one. **Mourning** is the **process** through which grief is resolved. Mourning involves societal practices like funerals, burial and memorial services.

Complicated Bereavement (Complicated Grief Reactions)

Complicated bereavement includes **prolonged grief reactions (chronic grief)** or extraordinarily intense grief reactions **(hypertrophic grief)** or delayed grief reactions **(delayed grief)**. **Traumatic Bereavement** refers to grief that is both chronic and hypertrophic.

Bereavement and Depression

Grief is a complex experience in which both positive emotions (happy memories of the deceased) and negative emotions (sadness) coexist and alternate. In depression, the negative emotions predominate and do not change. Also the symptoms in depression are severe and cause significant dysfunction.

QUESTIONS AND ANSWERS

QUESTIONS

General

1. All of the following are seen in anxiety *except*: *(Kerala 1996)*

A. Decreased sweating
B. Hyperventilation
C. Cold extremities
D. Palpitations
E. Pupillary dilatation

2. General adaptation syndrome (GAS) is seen in: *(AI 2012)*

A. Panic attacks
B. Depression
C. Anxiety
D. Stressful situations

3. General adaptation syndrome relates to: *(AI2012)*

A. How we achieve homeostasis
B. How well we adapt to new situations
C. Pattern of psychological response to stress
D. Pattern of autonomic nervous system (ANS) and physiological response when we are aroused by a stressful situation

4. Which of the following is the most common psychiatric disorder? *(DNB NEET 2014-15)*

A. Anxiety disorder
B. Schizophrenia
C. Depression
D. Mania

Generalized Anxiety Disorders

5. All are seen in generalized anxiety disorder *except*: *(DNB June 2009)*

A. Muscle tension

B. Irritability
C. Fear of impending doom
D. Restlessness

6. Drug of choice for generalized anxiety disorder is: *(DNB NEET 2014-15)*
A. Alprazolam
B. Buspirone
C. Venlafaxine
D. Beta-blockers

7. A 25-year-old lady presented with sadness, palpitation, loss of appetite and insomnia. There is no complaint of hopelessness, suicidal thoughts and there is no past history of any precipitating event. She is remarkably well in other areas of life. She is doing her office job normally and her social life is also normal. What is the probable diagnosis in this case? *(AI 2010)*
A. Generalized anxiety disorder
B. Mixed anxiety depression
C. Adjustment disorder
D. Mild depressive episode

Panic Disorder

8. A 30-year-old lady presents with sudden onset breathlessness, anxiety, palpitation and feeling of impending doom. Physical examination does not reveal any abnormality. What is the probable diagnosis in this case? *(AIIMS Nov 2010)*
A. Panic attack
B. Anxiety disorder
C. Conversion disorder
D. Acute psychosis

9. Panic attack is associated with a disturbance in all of the following neurotransmitters *except*: *(AIIMS Nov 2011)*
A. Serotonin
B. GABA
C. Glutamate
D. Dopamine, CCK, pentagastrin

10. Differential diagnosis of panic disorder are: *(PGI June 2004)*
A. Pheochromocytoma
B. Myocardial infarction
C. Mitral valve prolapse
D. Depression
E. Carcinoid syndrome

11. Which of the following is the most appropriate treatment for panic disorder? *(AIIMS 2009)*
A. Buspirone plus benzodiazepines
B. Benzodiazepines plus supportive therapy
C. Short-term benzodiazepine plus SSRI plus CBT
D. Long-term benzodiazepine plus venlafaxine

Phobic Anxiety Disorders

12. Agoraphobia is: *(SGPGI 2003)*
A. Fear of getting caught in places from where escape would be difficult
B. Fear of heights
C. Fear of animals
D. Fear of closed spaces

13. True about social phobia is: *(UP 2001)*
A. Fear of closed spaces
B. Irrational fear of situation
C. Irrational fear of activities
D. Irrational fear of specified objects

14. A middle aged person reported to psychiatric OPD with the complaints of fear of leaving home, fear of travelling alone and fear of being in a crowd. He develops marked anxiety with palpitations and sweating if he is in these situations. He often avoids public transport to go to his place of work. The most likely diagnosis is: *(AIIMS May 2006)*
A. Generalized anxiety disorder
B. Schizophrenia
C. Personality disorder
D. Agoraphobia

15. A medical student could not deliver seminar, fearing his seniors despite knowing that they are supportive. He further has difficulty speaking in front of others and also avoids going to the parties. The most likely diagnosis is: *(AIIMS 1999, MH 2008)*
A. Agoraphobia
B. Claustrophobia
C. Social phobia
D. Acrophobia

16. A fifty-year-old male feels uncomfortable in using lift, being in crowded places and traveling. The most appropriate line of treatment is: *(AIIMS Nov 2005)*
A. Counseling
B. Relaxation therapy
C. Exposure and response prevention
D. Covert sensitization

17. Treatment of choice in phobic disorder is : *(AIIMS 1994), (Assam 1999)*
A. Psychotherapy

B. Benzodiazepines
C. Behavior therapy
D. 5-HT reuptake inhibitor

18. Agoraphobia is treated with: *(PGI Dec 2007)*
A. Systematic desensitization
B. Psychodynamic therapy
C. Exposure therapy
D. Relaxation therapy
E. Behavior therapy

Obsessive Compulsive Disorder

19. Feeling of uncertainty and excessive sense of responsibility is seen in: *(AIIMS May 2015)*
A. Generalized anxiety disorder
B. OCD
C. Phobia
D. Personality disorder

20. Abnormal thought possession is found in: *(AI 1994)*
A. Organic brain syndrome
B. Hysteria
C. Obsessive compulsive disorder
D. Neurasthenia

21. True statements about obsession: *(PGI 2003)*
A. It is a repetitive thought or image
B. Patient believes that the images or thoughts are imposed by others
C. Content of obsession are about sex or God
D. Patient gets disturbed when unable to remove the ideas or thoughts

22. Which of the following statements differentiates obsessional idea from delusion: *(DNB NEET 2014-15, AIIMS Nov 2005)*
A. Obsessional idea is not a conventional belief
B. Obsessional idea is held in spite of evidence to the contrary
C. Obsessional idea is regarded as senseless by patient
D. Obsessional idea is held on inadequate ground

23. Following are the major symptoms of obsessive compulsive disorder: *(DNB NEET 2014-15)*
A. Doubts of contamination
B. Pathological doubts
C. Intrusive thoughts
D. All of the above

24. True about obsessive compulsive disorders are all *except*: *(DNB NEET 2014-15)*
A. Obsessions are ego-alien
B. Patient tries to resist against obsessions and compulsions
C. Obsessions are egosyntonic
D. Insight is present

25. Most common major symptom in obsessive compulsive disorder is: *(DNB NEET 2014-15)*
A. Compulsive washing of hand
B. Obsessive thoughts of contamination
C. Compulsive checking
D. Obsessive precision

26. Transmitters mainly involved in OCD is: *(AIIMS 1995)*
A. GABA
B. Norepinephrine
C. Dopamine
D. Serotonin

27. A 15-year-old boy feels that the dirt has hung onto him whenever he passes through the dirty street. This repetitive thought causes much distress and anxiety. He knows that there is actually no such thing after he has cleaned once but he is not satisfied and is compelled to think so. This has led to social withdrawal. He spends much of his time thinking about the dirt and contamination. This has affected his studies also. The most likely diagnosis is: *(AI 2003)*
A. Obsessive compulsive disorder
B. Conduct disorder
C. Agoraphobia
D. Adjustment disorder

28. An obsessive compulsive neurosis patient is likely to develop: *(AIIMS 1993)*
A. Hallucination
B. Depression
C. Delusion
D. Schizophrenia

29. Drug of choice for OCD is: *(DNB June 2009)*
A. Clomipramine
B. Fluoxetine
C. Carbamazepine
D. Chlorpromazine

30. In obsessive-compulsive disorder, which is not given: *(DNB 2002, Jharkhand 2006)*
A. Clomipramine
B. Haloperidol
C. Sertraline
D. Carbamazepine

31. All drugs are used for treatment of OCD *except*: *(ONB 2009, PCI 1999), (JIPMEr 2002) (MAHE 2003)*
A. Carbamazepine B. Lithium
C. Fluoxetine D. Diazepam

32. Drug used for long-term treatment of OCD includes: *(PGI May 2013)*
A. Clomipramine B. Fluoxetine
C. Fluvoxamine D. Citalopram
E. Trifluperidol

33. Treatment of obsessive-compulsive disorder includes: *(PGI Dec 2008)*
A. Exposure and response prevention
B. Flooding
C. Psychoanalytic therapy
D. Supportive psychotherapy involving family members
E. Systematic desensitization

34. Treatment of choice for OCD is: *(DNB 2004, MP 2006)*
A. Behavior therapy
B. Drug therapy
C. Psychosurgery
D. Combination of behavior and drug therapy

35. A 35-year-female has been diagnosed with obsessive compulsive disorder and she washes her hands many times a day. Which would be the best CBT technique for her treatment? *(AI 2012)*
A. Thought stopping B. Responseprevention
C. Relaxation D. Exposure

36. Exposure and response prevention technique is/are used in: *(PGI May 2015)*
A. Schizophrenia B. OCD
C. Phobia D. Mania
E. Depression

37. A woman comes to psychiatrist with history of spending a lot of time in washing her hands. She is distressed about it but says that she is not able to stop washing. This has started to affect her social life as well. What is the best mode of treatment for her? *(AIIMS May 2015)*
A. Cognitive behavioral therapy
B. Exposure and response prevention
C. Systematic desensitization
D. Pharmacological agents

Post-traumatic Stress Disorder

38. Most common disorder(s) after trauma is: *(PGI May 2015)*
A. Major depression B. Mania
C. Schizophrenia D. PTSD
E. Acute stress reaction

39. Which of the following is not a clinical feature of post-traumatic stress disorder (PTSD)? *(AI 2008)*
A. Flashbacks B. Hyperarousal
C. Hallucinations D. Emotional numbing

40. Post-traumatic stress-disorder is associated with all *except*: *(PGI 2000)*
A. Flashback
B. Severe traumatic injury
C. Re-experiencing of stressful event
D. Anhedonia
E. It does not develop after 6 months of stress

41. False statement about post-traumatic stress disorder: *(DNB NEET 2014-15)*
A. Symptoms develop immediately after the event
B. Symptoms include insomnia, poor concentration
C. It is the response to an exceptionally stressful or catastrophic stimuli
D. Anxiolytics are given only, if anxiety develops

42. True for PTSD are all *except*: *(PGI 2001)*
A. Patients have past history of psychiatric illness
B. Women are more predisposed
C. Occur in intellectuals
D. Feeling of numbness
E. Feeling of detachment

43. Post-traumatic stress disorder (PTSD) is differentiated from other disorders by presence of: *(AIIMS May 2012)*
A. Nightmares about events
B. Autonomic arousal and anxiety
C. Recall of events and avoidance of similar experiences
D. Depression

44. All are true for PTSD *except*: *(PGI 2002)*
A. Hippocampus and amygdala are the brain areas involved in PTSD
B. Anhedonia
C. Depression and guilt
D. Insomnia and poor concentration
E. Anxiolytics are the treatment of choice

45. Three years back a woman suffered during an earthquake and she was successfully saved. After recovery she has nightmares about the episode and she also gets up in the night and feels terrified. The most probable diagnosis is: *(AIIMS May 2002)*

A. Major depression
B. Post-traumatic stress disorder
C. Mania
D. Schizophrenia

46. Which of the following is the most effective treatment modality for post-traumatic stress disorder (PTSD)? *(AIIMS Nov 2014)*

A. Cognitive behavioral therapy
B. Eye movement desensitization and reprocessing
C. Hypnosis
D. Rational and emotive therapy

47. SSRI are first line treatment for: *(PGI 2010)*

A. OCD
B. Panic disorder
C. Social phobia
D. Post-traumatic stress disorder
E. Adjustment disorder

Grief and Adjustment Disorder

48. A man coming from mountain whose wife died 6 months prior says that his wife appeared to him and asked him to join her. The diagnosis is: *(AIIMS 2000)*

A. Normal grief
B. Grief psychosis
C. Bereavement reaction
D. Supernatural phenomenon

49. Which of the following is not a part of Kubler-Ross's stages of impeding death? *(DNB Dec 2010)*

A. Depression
B. Bargain
C. Aggression
D. Anger

50. An elderly house wife lost her husband who died suddenly of myocardial infarction couple of years ago. They had been staying alone for almost a decade with infrequent visits from her son and grandchildren. About a week after the death she heard his voice clearly talking to her as he would in a routine manner from the next room. She went to check but saw nothing. Subsequently she often heard his voice conversing with her and she would also discuss her daily matters with him. This however, provoked anxiety and sadness of mood when she would remain preoccupied with thoughts about him. She should be treated with: *(AIIMS May 2003)*

A. Clomipramine
B. Alprazolam
C. Electroconvulsive therapy
D. Haloperidol.

51. Ms. B. a 27-year-old nurse had extracurricular interests in trekking and painting. She broke up relationship with her boyfriend. Two months later she lost interest in her hobbies and was convinced that she would not be able to work again. She thought life was not worth living and consumed 60 tablets of phenobarbitone to end her life. She is most likely suffering from: *(AI 2004)*

A. Adjustment disorder
B. Acute stress disorder
C. Depressive disorder
D. Post-traumatic stress disorder

52. Two months after knowing that his son was suffering from leukemia, a 45-year-old father presents with sleep deprivation, lethargy, headache, and low mood. He interacts reasonably well with others, but has absented himself from work. The most probable diagnosis is: *(AI 2008)*

A. Depression
B. Psychogenic headache
C. Adjustment disorder
D. Somatization disorder

Somatoform and Factitious Disorders

53. Which of the following is/are the form/subtype of somatoform disorder(s)? *(PGI May 2012)*

A. Post-traumatic stress disorder
B. Depersonalization
C. Somatic passivity
D. Conversion disorder
E. Hypochondriasis

54. Which of the following is not a specific somatoform disorder? *(AIIMS Nov 2011)*

A. Somatization disorder
B. Chronic fatigue syndrome
C. Irritable bowel syndrome
D. Fibromyalgia

55. A 45-year-old male presents with history of headache, and vague body pains, off and on diarrhea and constipation, impotence and tingling and paresthesia in glove stocking pattern. The most probable diagnosis is:
(AI 2K, JIPMER 2002, DNB 2004)
A. Hypochondriasis
B. Somatization disorder
C. Conversion disorder
D. Factitious disorder

56. A 41-year-old married female presented with headache for the last 6 months. She had several consultations. All her investigations were found to be within normal limits. She still insists that there is something wrong in her head and seeks another consultation. The most likely diagnosis is:
(AI 2003)
A. Phobia
B. Psychogenic headache
C. Hypochondriasis
D. Depression

57. Hypochondriasis is: *(AI 1994)*
A. Normal preoccupation with abnormal body function
B. Abnormal preoccupation with abnormal body function
C. Normal preoccupation with normal body function
D. Abnormal preoccupation with normal body function

58. A man with intermittent hiccups feels that he is about to die because he is suffering from gastric cancer. All his radiological investigations prove the contrary. Which is the most probable diagnosis? *(DNB NEET 2014-15)*
A. Somatization disorder B. Hypochondriasis
C. Conversion disorder D. Delusional disorder

59. A 35-year-old male, with premorbid anxious traits and heavy smoker believes that he has been suffering from 'lung carcinoma' for a year. No significant clinical finding is detected on examination and relevant investigations. In the process, he has spent a huge amount of money, time and energy in getting himself unduly investigated. He is most likely suffering from: *(AIIMS Nov 2004)*
A. Carcinoma lung
B. Hypochondriacal disorder
C. Delusional disorder
D. Malingering

60. A young 20-year-old girl presents with complaints of pain in legs, intermittent vomiting, and headache since 2 months. Her physical examination was normal. What is the most possible diagnosis?
(AIIMS Nov 2009)
A. Generalized anxiety disorder
B. Conversion disorder
C. Somatoform pain disorder
D. Somatization disorder

61. A 40-year-old male is admitted with complaints of abdominal pain and headache. General physical examination revealed six scars on the abdomen from previous surgeries. He seems to maintain a sick role and seeks attention from the nurses. He demands multiple diagnostic tests including a liver biopsy. The treating team failed to diagnose any major physical illness in the patient. His mental status examination did not reveal any major psychopathology. One of the treating staff recognized him to have appeared in several other hospitals with abdominal pain and some other vague complaints. He is most likely suffering from:
(AIIMS Nov 2003)
A. Schizophrenia B. Malingering
C. Somatization disorder D. Factitious disorder

62. A 30-year-old lady presented to physician with complaints of hematuria. On evaluation RBCs were found in urine but no cause was found. On further enquiry it was found that she has gone to many doctors with the same complaints and would demand in patient care. She would prick her finger and mix blood in urine sample. Her diagnosis is:
(Karnataka 2011)
A. Malingering
B. Factitious illness
C. Dissociative disorder
D. Hypochondriasis

63. Munchausen's syndrome by proxy involves:
(MH 2011)
A. Drug abuse
B. Toxin mediated neuropsychiatric disorder

C. Illness caused by care giver
D. All of the above

64. Maintaining sick role by any means is a characteristic feature of:
(JIPMER 2002, Mahe 2004, Rohtak 2002, DNB 2003)
A. Hypochondriasis
B. Somatization disorder
C. Conversion disorder
D. Factitious disorder

Dissociative Disorders (Conversion Disorders)

65. La belle indifference is seen in:
(DNB NEET 2014-15, AIIMS 1998)
A. Conversion disorder B. Schizophrenia
C. Mania D. Depression

66. In conversion disorder, all of the following statements are true *except*: *(DNB NEET 2014-15)*
A. Autonomic nervous system is involved
B. There is primary and secondary gain
C. La belle indifference is a feature
D. Patient does not intentionally produce symptoms

67. All are true about conversion disorder *except*:
(DNB June 2011)
A. Presence of secondary gain
B. Onset in late age
C. Patient does not consciously produce symptom
D. Relation with stress

68. Which of the following is a conversion disorder?
(DNB June 2009)
A. Hysterical fits B. Derealization
C. Depersonalization D. Amnesia

69. In conversion disorders, all are found *except*:
(DNB NEET 2014-15)
A. Jealousy B. Paralysis
C. Anesthesia D. Abnormal gait

70. Following are included in dissociative disorder:
(PGI June 2007, 2003)
A. Multiple personality disorder
B. Fugue
C. Hypochondriasis
D. Somatization disorder
E. Obsession
F. Borderline personality

71. Which of the following can differentiate hysterical fits from epileptic fits? *(DPG 2009, Calcutta 2002)*
A. Occur in sleep B. Injuries to person
C. Incontinence D. Occur when people are watching

72. The most common form of dissociative hysteria is: *(MH 2000)*
A. Fugue B. Amnesia
C. Multiple personality D. Somnambulism

73. Psychogenic amnesia is characterized by:
(AIIMS 1997)
A. Anterograde amnesia
B. Retrograde amnesia
C. Both with confabulation
D. Patchy impairment of personal memories

74. A person missing from home is found wandering purposefully. He is well-groomed and denies remembering how he reached at the new place. Most likely diagnosis is: *(AI 2001)*
A. Dementia B. Dissociative amnesia
C. Dissociative fugue D. Schizophrenia

75. An 18-year-old boy came to psychiatry OPD with a complaint of feeling as, if he is changed from inside. He reports feeling strange as, if he is different from his normal self. He was very tense and anxious yet could not point out the precise change in him. This phenomena is best called as:
(AI 2005)
A. Delusional mood
B. Depersonalization
C. Autochthonous delusion
D. Overvalued idea

76. Regarding Ganser's syndrome, which of the following statement is true: *(AIIMS 1998)*
A. Repeated lying
B. Approximate answers
C. Unconscious episodes
D. Malingering

77. All are true about Ganser's syndrome *except*:
(JIPMER/UP 2K, PGI 1999, DNB 1998)
A. Approximate answer
B. Apparent clouding of consciousness
C. Only found in prisoners
D. Hallucinations

78. Ganser syndrome is a type of: *(DNB NEET 2014-15)*
A. Dementia
B. Malingering
C. Dissociative disorder
D. Personality disorder

79. All is true about pseudocyesis *except*: *(DNB NEET 2014-15)*
A. Abdominal enlargement
B. Patient is pregnant
C. Labor pains at expected date of delivery
D. Amenorrhea

80. The difference between malingering and hysteria is: *(AI 1994, DNB 2006)*
A. Hypnosis
B. Malingering has poor prognosis
C. Hysteria is more common in females
D. Conscious motive in malingering

81. Differential diagnosis of premenstrual tension includes all of the following *except*: *(AIIMS Nov 2002)*
A. Psychiatric depressive disorder
B. Panic disorder
C. Generalized anxiety disorder
D. Chronic fatigue syndrome

ANSWERS

1. A.
2. D.
3. D.
4. A. As a group anxiety disorders are the most common psychiatric disorders.
5. C. Fear of impending doom is typically seen in panic attacks.
6. A. Benzodiazepines are the drug of choice for generalized anxiety disorder. However, it must be remembered that benzodiazepines can cause dependence. The other drugs which can be used include SSRIs, buspirone and venla-faxine.
7. B. In this patient the best answer would be "mixed anxiety depression". This patient has some depressive symptoms (sadness, loss of appetite and insomnia), however the question explicitly mentions that there is no hopelessness, no suicidal thoughts and that her job and social life is normal. The question goes on to add that "she is doing remarkable well in other areas of life". Please remember that even in a patient with mild depression, it is expected that there would be at least some disturbance in professional and social life. Further her symptoms are not enough to make a diagnosis of depression. In view of the above, the diagnosis of mild depression cannot be made. This patient doesn't have any history of precipitating event hence the diagnosis of adjustment disorder can be easily ruled out. Few guides are giving the answer as generalized anxiety disorder which does not make any sense as the only anxiety symptom mentioned here is palpitation. The core feature of generalized anxiety disorder i.e "generalized and persistent anxiety" is not there. Hence, we are left with mixed anxiety depression. The diagnosis of mixed anxiety depression is made when there are "symptoms of both anxiety and depression, but neither set of symptoms is severe enough to make an independent anxiety or depressive disorder diagnosis". This description suits best to the clinical scenario provided here.
8. A.
9. C. Serotonin, norepinephrine and GABA are the major neurotransmitters involved. Cholecystokinin and pentagastrin (which acts on CCK receptors) are known to cause panic attacks.
10. A, B, C, E.
11. C.
12. A.
13. B. Social phobia is defined as irrational fear of social situations. Though it can be said that it also includes certain activities, however please remember that it's the context (situation) that is central to social phobia and not the activity. For example, many patients with social phobia have difficulty eating in a restaurant. However, they have no problem doing the same activity (i.e eating) when alone. It's the situation (i.e. the restaurant) that produces anxiety.
14. D.
15. C. Here the fear is performing in public and there is also avoidance of social situations (i.e. avoidance of parties).
16. C. The diagnosis here is agoraphobia as this gentleman is uncomfortable with closed places (lift), crowded places and also travelling alone. The best treatment option here is exposure and response prevention.
17. C.

18. A, B, C, D, E.
19. B. The cognitive theory of OCD says that the typical abnormalities in OCD include, "excessive or inflated sense of responsibility", "feeling of uncertainty" and "overestimation of threat". Few books are giving the answer as "generalized anxiety disorder" which is incorrect.
20. C. Obsessions are disturbances of thought possession.
21. A, C, D.
    Obsessions are repetitive thoughts, images or impulses. Often the content of thoughts is about sex or god and patient tries to stop these anxiety provoking thoughts unsuccessfully. Please remember, that a patient with obsession identifies the repetitive thought as his "own thought" and not something that is imposed by others. Also remember, if the patient indeed believes that the thought has been imposed by others, it would then be diagnosed as "thought insertion" and not an obsession.
22. C. Obsessions are considered senseless by the patient whereas patient has full belief in the delusions. For example, a patient who gets obsessive thoughts that "his hands are unclean" understands that his thought is not true and gets bothered by this repetitive thought whereas a patient with "delusion of infidelity" actually believes that his wife is cheating on him and continues to believe so irrespective of what others say.
23. D.
24. C. Obsessions are ego dystonic and not ego syntonic.
25. B.
26. D. If we have to choose one, it would be serotonin.
27. A.
28. B. Most of the patients with OCD, develop secondary depression.
29. B. Both SSRIs and clomipramine are considered first line treatment, however due to better side effect profile, SSRIs are preferred.
30. D. Many guides are giving the answer as haloperidol but that is not the right answer here. The American Psychiatric Association guidelines clearly state that, if patients do not respond to SSRIs and clomipramine, one of the treatment strategy is augmentation with antipsychotics. The best evidence is for haloperidol, risperidone, quetiapine and olanzapine. In comparison, carbamazepine is rarely used in OCD and has very weak evidence in comparison to haloperidol. Hence, the best answer here would be carbamazepine.
31. D. Again, we have to choose between carbamazepine and diazepam. Now, diazepam is a benzodiazepine and can improve anxiety temporarily however it doesn't act at core symptoms of OCD. Whereas, carbamazepine, though has minimal evidence, but it has been found to act on core symptoms of OCD.
32. A, B, C, D.
    SSRIs and clomipramine are first line agents. Trifluperidol doesn't have any evidence in management of OCD.
33. A, B, C, D and E.
34. D. A combination of pharmacotherapy and psychotherapy has the best evidence in the management of OCD.
35. B. The technique is actually exposure and response prevention. In OCD, the primary aim is to stop the compulsions; hence response prevention is the better answer here.
36. B, C.
37. B. According to american psychiatric association guidelines "The first line treatments for OCD are cognitive behavioral therapy that relies on behavioral technique of exposure and response prevention and serotonin reuptake inhibitors". Now, this question is just mentioning pharmacological agents without specifying anything about which agent. Also few studies have found, that exposure and response prevention has more lasting effect than pharmacological agents. Said that, the choice of treatment between ERP and pharmacological agents depends on patients characteristics, which have not been provided, hence its tough to choose. However in this case, exposure and response prevention appears to be the best answer.
38. A, D, E.
39. C.
40. E. PTSD may have a delayed onset, i.e after 6 months of trauma.
41. A.
42. C. The patients who have a past history of psychiatric illness are more predisposed and so are women. There is no such correlation with intellect.

43. C. Recall of events and avoidance is quite typical of PTSD. Nightmares, autonomic arousal and depressive symptoms can be seen in other disorders also.
44. E. The treatment of choice is cognitive behavioral therapy. All other statements are correct.
45. B. There is history of a traumatic event followed by intrusion symptoms (nightmares). The most likely diagnosis is post-traumatic stress disorder.
46. A.
47. A, B, C, D, E.
48. A. The answer here is debatable. First of all, lets review some facts. There is no clear cut duration in which grief should get resolved. The most accepted duration for grief is 6–12 months. However, every single textbook says that grief usually continues beyond that period. Second, brief hallucinations can be a part of normal grief, however continuous hallucinations are not seen. In this case the history is that the man reported that wife asked him to join her. The question has not mentioned if it was an auditory perception (i.e. he heard voice of wife) or visual perception (i.e. he saw his wife) , what was the state of consciousness (whether he was awake or sleeping). In view of above its difficult to even call this phenomenon as a hallucination. Even if we accept it as a hallucination, it appears to be a single episode. There is no history of any other associated symptoms. Hence, the better answer here would be normal grief. Also, please remember that grief and bereavement are often used interchangeably, however strictly speaking, bereavement is a state of loss, whereas grief is the emotional and behavioral response to loss. The question is talking about the behavioral and emotional response here. All in all, its a poorly framed and incomplete question.
49. C.
50. D. In this case, death happened "couple of years ago". The first time she had auditory hallucinations was after a week of his death and since then it has been happening. Now, in grief "brief hallucinations" can occur however here the hallucinations are often and patient is even discussing the daily matters with the "voice". This clearly shows presence of psychotic symptoms which should be diagnosed separately. Please remember patient can develop all kind of psychiatric disorders like depression, anxiety, PTSD in association with grief and if the symptoms are severe enough, they should receive separate diagnosis. This patient has psychotic symptoms (i.e. hallucinations) and should be treated with an antipsychotic, haloperidol. The treatment depends on symptoms, in case of occasional anxiety, alprazolam could have been used. In case of significant depressive symptoms antidepressant could have been used, but since the psychotic symptoms are prominent, we must use an antipsychotic.
51. C. This question has been answered wrongly by most of the guides. Please remember few basic things about adjustment disorder and depression. Adjustment disorder is always seen after a stressful event, which is usually a negative life event. The symptoms of adjustment disorder are quite similar to depression and include depressed mood, anxiety, worry, a feeling of inability to cope and some degree of disturbance in individuals daily functioning. Now, a negative life event can also precipitate the depressive episode. So, the presence of a stressor cannot be used to differentiate between adjustment disorder and depression. If a patient has the symptoms severe enough to qualify the diagnosis of depression, depression would always be diagnosed ahead of adjustment disorder, irrespective of whether there was a stressor or not. In this case patient has severe symptoms such as loss of interest, ideas of hopelessness (patient is convinced that she won't be able to work again) and most importantly suicide attempt, all of which are highly suggestive of depression. Hence, the diagnosis would be depressive disorder.
52. C. Here, the diagnosis is adjustment disorder. The symptoms are not severe enough to qualify for the diagnosis of depression and there is a clear history of a stressor (diagnosis of leukemia in son).
53. D, E.

    According to DSM-IV, the following are the somatoform disorders (1) somatization disorder (2) conversion disorder (3) hypochondriasis (4) body dysmorphic disorder (5) pain disorder (6) undifferentiated somatoform disorder (7)

somatoform disorder, not otherwise specified. Please remember that in DSM-5, the somatoform disorders are now referred as somatic symptom and related disorders.

54. A. The classification of somatoform disorders mentioned in the preceding answer is frequently not used by nonpsychiatrist practitioners. These practitioners use other diagnoses, which are frequently referred to as functional somatic syndromes. These include chronic fatigue syndrome, fibromyalgia and irritable bowel syndrome. Somatization disorder is not a part of functional somatic syndromes.
55. B. This patient has pain symptoms, gastrointestinal symptoms, sexual symptoms and pseudoneurological symptoms.
56. C. The patient had multiple normal investigations but continues to believe that there is something wrong in her head and continues to seek multiple consultations. The most likely diagnosis is hypochondriasis.
57. D.
58. B.
59. B.
60. D. The best answer here is somatization disorder. The patient has pain symptoms and gastrointestinal symptoms. Going by strict definition of DSM-IV, there should be 4 pain symptoms, 2 GI symptoms, 1 sexual symptom and 1 pseudoneurological symptoms. However the ICD-10, simply says that there should be "multiple and variable physical symptoms for which no adequate explanation has been found". The other plausible option is somatoform pain disorder however it is characterized by only pain symptoms whereas in this patient intermittent vomiting is also present.
61. D. The history of multiple scars from previous surgeries, seeking attention from nurses, maintenance of sick role, demands for multiple diagnostic tests and identification by a staff all suggest a factitious disorder.
62. B.
63. C.
64. D. Sick role means that the patient wants others to accept him as "sick" and treat him accordingly by giving attention and care. Patients with factitious disorders frequently fake symptoms to get the "sick role".
65. A. La belle indifference is a phrase used to describe the feeling of indifference which patients of conversion disorders have towards their symptoms.
66. A. Sensory and motor system are involved and not the autonomic nervous system.
67. B. The onset of conversion disorder is usually seen in late childhood to early adulthood and is rare after 35 years of age.
68. A. The term "hysterical fits" is no longer used in modern terminology. The current classificatory system will use the diagnosis of conversion disorder with seizure The DSM diagnosis of conversion disorder can present with either motor symptoms, sensory symptoms or convulsions. Please remember that in ICD-10 , conversion disorder is another name for dissociative disorders. So, if we follow ICD-10, all four options are true. But usually, in exams the term conversion disorder refers to the DSM diagnosis and not the ICD.
69. A. Jealousy is not a neurological sign, the rest three are.
70. A, B.
71. D. Hysterical fits or dissociative convulsions/seizures or conversion disorders with convulsions/seizures do not occur in sleep, are not associated with any injuries, are not associated with any incontinence and there is no postseizure amnesia or confusion. They usually occur when others are watching.
72. B. Dissociative amnesia is the most common type of dissociative disorder.
73. D. In psychogenic amnesia (or dissociative amnesia), usually memory is lost for events which have some personal significance, whereas memories for neutral events (e.g. national events) is intact. Hence, the memory loss is patchy and mostly for personal memories.
74. C.
75. B.
76. B.
77. C. Though Ganser syndrome is usually seen in prisoners but it is not exclusive to them.
78. C.
79. B. Patient is not pregnant is pseudocyesis. Though she falsely believes that and there are also associated changes suggestive of pregnancy.

80. D. The symptoms is malingering are produced consciously for some conscious motive (e.g. monetary gain). In hysteria (dissociative disorders) the symptoms are produces unconsciously and the motive is also unconscious (e.g. attention or love from others).
81. D. Premenstrual tension or Premenstrual syndrome is characterized by depressive and anxiety symptoms one week before the onset of menses, and their resolution after the onset of menses or within few days of onset of menses. These symptoms are not present during the other period of menstrual cycles. If the depressive and anxiety symptoms are present throughout the cycle the differential diagnose is depression, anxiety disorders like generalized anxiety disorder, panic disorder. Chronic fatigue syndrome is not a differential here.

Chapter

5 Substance Related and Addictive Disorders

The substance related disorders encompass 10 separate classes of drugs which includes alcohol, caffeine, cannabis, hallucinogens, inhalants, opioids, sedatives and hypnotics, stimulants, tobacco and other substances.

Terminology

A. ***Dependence***: It is defined as a pattern in which the use of a substance or a class of substances takes on a much higher priority for a given individual than other behaviors that once had a greater value. It encompasses **behavioral dependence (substance seeking behaviors)**, **physical dependence (physiological effects of multiple episodes of substance use)** and **psychological dependence (continuous or intermittent craving)**.

According to ICD-10, the presence of three or more of the following in past one year is required for diagnosis of dependence on a substance:

- Strong desire or sense of compulsion to take a substance **(craving)**
- Difficulty in controlling substance taking behavior in terms of its onset, termination or levels of use
- **Withdrawal symptoms** (typical physiological symptoms that develop when substance use is reduced or stopped)
- **Tolerance** (increased doses of substance is required to achieve the effects originally produced by lower doses)
- Progressive neglect of alternative pleasures or interests because of substance use
- Persistence with substance use despite clear evidence of harmful consequences.

B. ***Harmful use***: It is a state where substance use is causing harm but still criterion of dependence are not met. According to ICD-10, the harmful use is defined as a pattern of substance use which is causing damage to **physical health** (e.g. hepatitis due to alcohol use) or **mental health** (e.g. episode of depression secondary to heavy alcohol consumption).

C. ***Abuse***: The DSM-IV, does not use the concept of "harmful use". It instead uses the concept of **"abuse"** which is defined as a pattern of substance use that leads to one or more of the following (1) **failure to fulfil obligations** at work, school or home (2) substance use in situations in which it is **physically hazardous (such as while driving)** (3) **legal problems** and (4) **social** or **interpersonal problems**.

D. ***Intoxication***: A transient condition that develops following administration of a substance, in which various mental functions such as consciousness, thinking, perception or behavior are altered.

E. ***Withdrawal***: Specific symptoms that occur after stopping or reducing the amount of substance that has been used regularly over a prolonged period.

Etiology

The development of substance use disorders is best explained by a **biopsychosocial model**. It means that there is an interaction of biological factors, psychological factors

DSM-5 Update: In DSM-5, the categories of "dependence" and "abuse" have been removed and clubbed under a single diagnostic category of "substance use disorders".

DSM-5 Update: Pathological gambling has been included along with substance related disorders under the diagnostic entity of "gambling disorder".

and social factors which results in development of substance use disorders (dependence, harmful use or abuse).

The drugs act on particular receptors and brain pathways and these receptors and pathways have been found to play a central role in development of substance use disorders. Of particular importance are the dopaminergic neutrons in the ventral tegmental area which project to cortical and limbic regions, especially the nucleus accumbens. This pathway is involved in the sensation of reward (or pleasure) and is believed to be the major mediator of effects of substances. This pathway is also known as **"brain reward pathway"**.

The major neurotransmitters involved in development of substance used disorders include opioids, catecholamines (particularly dopamine) and γ-aminobutyric acid (GABA).

The evidence from studies of twin, adoptees and siblings has also suggested the role of genetic factors in development of substance abuse.

Apart from biological factors, learning and conditioning is also known to contribute to development of the substance use disorder. The use of substance can result in an intense sense of euphoria, it also frequently alleviates the negative emotions (such as sadness, anxiety). This results in reinforcement of substance taking behavior. Other factors like peer pressure, social acceptance, easy availability and the personality type of the individual also contribute to the development of substance use disorders.

ALCOHOL

Ethyl alcohol is the active ingredient of alcoholic drinks. The concentration of ethyl alcohol (ethanol) varies across the preparations. The standard drink or a unit of alcohol corresponds to 10 mL of absolute alcohol or 7.8 gram of absolute alcohol (specific gravity of alcohol = 0.78).

One standard drink = 1 peg (30 mL) of spirits = 1 glass (125 mL) of wine = 1 glass (60 mL) of fortified wine = 1/2 packet of arrack = 1/2 bottle of standard beer = 1/4 bottle of strong beer.

Arrack is the country made liquor. Fortified wines are prepared by adding brandy to wine.

Absorption: About 10% of alcohol is absorbed from stomach and remainder from **small intestine**[Q]. Peak blood alcohol concentration is reached in 30–90 minutes, depending on whether the alcohol was ingested on an empty stomach (absorption is faster) or with food (absorption is slower).

Table 1: Absolute alcohol concentration in various preparations.

Preparation	*Concentration of alcohol by volume (% ABV)*
Spirits (whiskey, rum, gin, vodka, brandy, etc.)	40
Arrack	33
Fortified wines	14–20
Wines	5–13
Beer (strong)	8–11
Beer (standard)	3–4

Mellanby effect[Q]: Studies have shown that intoxicating effects of alcohol are greater at a given blood alcohol level when BAC (blood alcohol concentration) is increasing than for the same BAC when the blood alcohol level is falling.

Reverse tolerance: This refers to the phenomenon where the intoxicating effects of alcohol are seen progressively with **lower dosages**[Q]. A patient may report that he gets intoxicated with much smaller amounts of alcohol now in comparison to the past. It is believed to be secondary to decreasing levels of alcohol metabolizing enzymes secondary to progressive liver dysfunction. A similar concept of **"sensitization"** is seen in cocaine, amphetamines, opioids and cannabis where in augmented stimulant response is observed with repeated, intermittent exposure to a specific drug. It is believed to be due to changes in the brain reward pathways.

Metabolism: About 90% of absorbed alcohol is metabolized through oxidation in the liver, the remaining 10% is excreted unchanged by the kidneys and the lungs. The alcohol in alveolar air is in equilibrium with alcohol in blood passing through pulmonary capillaries, hence determining the alcohol levels in breath by breath analyzer gives a good estimate of blood alcohol levels.

The rate of oxidation by the liver is constant and is around 7–10 gram an hour (which equals to amount of alcohol in one standard drink). Alcohol is converted by activity of enzyme alcohol dehydrogenase into acetaldehyde, which is further oxidized by aldehyde dehydrogenase into acetate. Acetate is converted to carbon dioxide and water.

Acute Intoxication

Alcohol is a depressant of the central nervous system. The excitement that follows alcohol use is due to decrease in conscious self control. The symptoms and signs of alcohol intoxication depends on the blood alcohol concentration. Following symptoms develop:

Blood levels	*Symptoms*
20-30 mg/dL:	Slowness of motor performance and decreased thinking ability. **30 mg/dL**[Q] is the legal limit for driving in India
30-80 mg/dL:	Worsening of motor performance and further decrease in thinking ability
80-200 mg/dL:	Incoordination, judgment errors, mood lability
200-300 mg/dL:	Nystagmus, slurring of speech, **alcoholic blackouts**[Q]
>300 mg/dL:	Impaired vital signs and possible death

Alcoholic blackout: It refers to **anterograde amnesia**[Q] seen during intoxication. The person is unable to recall the events that happened when his blood alcohol levels were between 200-300 mg/dL.

Alcohol Withdrawal

It refers to the symptoms which develop after cessation of alcohol intake. In most patients the following sequence is seen, though all symptoms do not necessarily occur in all patients.

After 6-8 hours: The classic and most common sign of alcohol withdrawal is **tremulousness (coarse tremors)**[Q]. Other symptoms include gastrointestinal symptoms (like nausea and vomiting), sympathetic autonomic hyperactivity including arousal, anxiety, sweating, hypertension, mydriasis and tachycardia.

After 12-24 hours: **Alcoholic hallucinosis**[Q]. It refers to hallucinations in the absence of any disturbances of consciousness. Usually auditory hallucinations are present.

After 24-48 hours: Alcohol withdrawal seizures. The seizures are usually generalized and tonic-clonic. Usually patients have more than one seizures in a span of 3-6 hours, hence often the term **cluster seizures** is used for alcohol withdrawal seizures.

After 48-72 hours: Delirium tremens. Alcohol withdrawal delirium is a medical emergency and if untreated the mortality rate is around 20%. The symptoms and signs include disturbances of consciousness, disorientation to time, place and person, hallucinations (most commonly visual) coarse tremors and autonomic hyperactivity.

Alcohol Induced Disorders

The use of alcohol may be associated with development of various mental disorders. Usually alcohol induced disorders, resolve within one month of cessation of alcohol intake. If the symptoms of mental disorder persist beyond that, the possibility of an independent mental disorder should be entertained. The following disorders have been described:

1. Alcohol induced psychotic disorders
2. Alcohol induced bipolar disorders
3. Alcohol induced depressive disorders
4. Alcohol induced anxiety disorders, alcohol induced sleep disorder
5. Alcohol induced sexual dysfunction
6. Alcohol induced neurocognitive disorders.

Alcohol induced neurocognitive disorders: Long-term alcohol use can cause amnestic disorders characterized by disturbances in short-term memory. The classic names for alcohol induced amnestic disorders are **Wernicke's encephalopathy** and **Korsakoffs syndrome**.

A. ***Wernicke's encephalopathy***: It is the acute neurological complication characterized by the following symptoms (pneumonic GOA):
   - G: Global **confusion**[Q]
   - O: **Ophthalmoplegia,**[Q] usually 6th nerve palsy (second most common is 3rd nerve palsy) causing, horizontal nystagmus and gaze palsy)
   - A: **Ataxia**[Q]

   Although Wernicke's encephalopathy can be **completely reversed** with treatment, often **residual ataxia**[Q] and horizontal nystagmus remain despite treatment. Wernicke's encephalopathy may clear spontaneously in days to weeks or progress to Korsakoff's syndrome.

B. ***Korsakoff's syndrome***: It is the **chronic** neurological complication of long-term alcohol use. It is characterized by impaired recent memory, **anterograde amnesia**[Q] (inability to form new memory), **retrograde amnesia**[Q] (inability to recall old memories) and **confabulations**[Q] (making of false stories to fill memory gaps, which is unintentional). The anterograde amnesia is much more prominent than the retrograde amnesia.

The pathophysiology for both Wernicke's syndrome and Korsakoff's syndrome is **thiamine deficiency**[Q]. The neuropathological lesions are usually symmetrical and involve **mammillary bodies**[Q]. Other sites of lesion include thalamus, hypothalamus, midbrain, pons, medulla, fornix and cerebellum.

The treatment of Wernicke's encephalopathy is high dose of parenteral thiamine. Treatment of Korsakoff syndrome is oral thiamine for 3–12 months. Only around 20% of patients with Korsakoff syndrome recover.

C. ***Marchiafava bignami disease***: It is a rare neurological complication of long-term alcohol use. It is characterized by epilepsy, ataxia, dysarthria, hallucinations and intellectual deterioration. The pathophysiology is demyelination of **corpus callosum**, optic tracts and cerebellar peduncles.

Evaluation

A. ***Screening test***: One of the most commonly used screening test is **CAGE questionnaire**[Q], which includes the following four questions:
   - Have you ever felt that you should **C**ut down on your drinking?
   - Have people **A**nnoyed you by criticizing your drinking?
   - Have you ever felt bad or **G**uilty about your drinking?
   - Have you ever had a drink first thing in the morning to steady your nerves or to get rid of hangover (**E**ye opener)?

A positive response on **two or more** than two of the above questions, is suggestive of alcohol use disorder.

Another commonly used screening test is **AUDIT** (**alcohol use disorders identification** test). Others tests such as **SADQ (severity of alcohol dependence questionnaire)** are used to determine the severity of dependence.

B. ***Diagnostic markers***: Apart from the screening tests, the blood test may also help in the identification of heavy drinkers who are susceptible to development of alcohol use disorders.
   - *Blood alcohol concentration*: It can be used to judge tolerance to alcohol. For example, if a person has high blood alcohol concentration without showing any signs of intoxication, it indicates the presence of tolerance and high chances of presence of alcohol use disorders.

     Blood alcohol concentration is usually measured using breath analyzers. It can also be estimated by using **Widmark formula**, if the amount of alcohol consumed and body weight is known.
   - *Carbohydrate deficit transferrin (CDT)*: The **most sensitive** and **specific** laboratory test for the identification of heavy drinking is elevated blood levels of carbohydrate deficit transferrin.
   - *Gamma-glutamyl transferase (GGT)*: Elevated levels of GGT are again suggestive of heavy drinking. The levels of both CDT and GGT return towards normal within days to weeks of stopping drinking.
   - *Mean corpuscular volume*: MCV is frequently elevated in individuals who indulge in heavy drinking.
   - Other test include elevated levels of ALT (alanine aminotransferase) and alkaline phosphatase, which indicate liver injury secondary to heavy drinking.

Treatment

The treatment of alcohol dependence is done in the following phases.

A. *Detoxification*: It is the first phase of treatment which involves management of withdrawal symptoms. The usual duration of detoxification is 7-14 days. **Benzodiazepines**[Q] are the drugs of choice (particularly **chlordiazepoxide**[Q]) for all the withdrawal symptoms ranging from common ones like tremors and nausea to severe withdrawal symptoms like alcohol withdrawal seizures and delirium tremens. In addition vitamins (particularly thiamine) must be given as patients usually are deficient in vitamins.

   Carbamazepine can also be used in place of benzodiazepines however other anticonvulsants do not have any role. The antipsychotics can be used in patients with delirium tremens and alcoholic hallucinosis.

B. *Maintenance of abstinence*: After the completion of detoxification, the next phase involves long-term treatment to maintain the abstinence. It involves both pharmacological and nonpharmacological treatment.
   - *Pharmacological treatment*: The drugs used are of two types:
     a. *Deterrent agents*: The most commonly used deterrent agent is **disulfiram**[Q]. It is an irreversible inhibitor of aldehyde dehydrogenase, the enzyme which metabolites acetaldehyde. Acetaldehyde is the first breakdown product of alcohol. If a patient who is on disulfiram, consumes alcohol, it results in accumulation of toxic

levels of acetaldehyde and causes a number of unpleasant signs and symptoms, termed as **disulfiram ethanol reaction (DER)**.

Other deterrent agents include citrated calcium carbimide and metronidazole.

b. *Anticraving agents*: These agent reduce craving, which is an important reason for relapse. The anticraving agents include **naltrexone**[Q], **acamprosate**[Q], topiramate, serotonergic agents like fluoxetine and baclofen.

- *Nonpharmacological treatment*: These are psychosocial treatment methods and include:
  a. *Cognitive behavioral therapies*: A large number of therapies have been found to have efficacy in maintaining abstinence. These include **motivational enhancement therapy**, relapse prevention model and cognitive therapy.
  b. *Alcoholic anonymous*: It is a self help group, which follows 12 steps to quit alcohol use. The members include patients who have recovered from alcoholism, current alcohol users and also volunteers.
  c. Family therapy
  d. Group therapy

OPIOIDS

The term **opiates** is used to describe the psychoactive alkaloids (like morphine and codeine) which are present in opium (derived from papaver somniferum, the poppy plant). The term **opioids** is a broader term which also includes synthetic compounds like heroin and methadone, which share the action and effects of opiates.

Heroin (diacetyl morphine) is the **most commonly**[Q] abused opioid. Since, it is more lipid soluble than morphine, it crosses blood brain barrier faster and has a more rapid onset of action. Heroin was initially used as a treatment for morphine addiction, however, it was realized that dependence forming potential of heroin is higher than morphine. The street names of heroin includes **"smack"** and "brown sugar" amongst others. The street forms are often impure and have adulterants like starch (fructose and sucrose), quinine, chalk powder, paracetamol and talcum powder, etc.

Opioids can be taken orally, snorted intranasally (also called chasing the dragon), and injected intravenously or subcutaneously. The intravenous users tend to gradually shift from peripheral veins to larger veins (a phenomenon called **mainlining**[Q]). The user may progress to subcutaneous administration, once he is not able to find any patent vein. The subcutaneous route is known as **"skin popping"**.

Intoxication

Opioids when taken (especially intravenously) produce a feeling of intense euphoria. The other symptoms include a feeling of warmth, heaviness of extremities and facial flushing. This initial euphoria is followed by a period of sedation (known as "nodding off").

Opioids overdose can be lethal due to respiratory depression. The symptoms of overdose include coma, slow respiration, hypothermia, **hypotension**[Q], bradycardia, pin point pupils, cyanosis.

Withdrawal Symptoms

The sudden stopping of opioids after prolonged use or intake of opioid antagonists like naltrexone can produce withdrawal symptoms. The short-term use of opioids decreases the activity of noradrenergic neurons and the long-term use results in compensatory hyperactivity. When opioids are suddenly stopped, there are symptoms of rebound noradrenergic hyperactivity. This hypothesis also explains the mechanism of action of clonidine (alpha-2 adrenergic receptor agonist, which decreases norepinephrine release) in management of opioid withdrawal.

The withdrawal symptoms usually appear around **6–8 hours**[Q] after the last dose, peak during the second or third day and subside during the next 7–10 days. The withdrawal from opioids produces a **flu-like syndrome**[Q] with the following symptoms.

1. **Lacrimation**[Q], **rhinorrhea**[Q], sweating, **diarrhea**[Q]
2. **Yawning** and **piloerection**[Q]
3. **Pupillary dilation**[Q]
4. Muscle cramps and generalized bodyache
5. **Insomnia**[Q], anxiety, hypertension and tachycardia
6. Nausea, vomiting and anorexia.

Treatment

A. ***Detoxification***: In this stage, the main focus is on the management of withdrawal symptoms. The medications used are usually long acting opioids like **methadone**[Q] or **buprenorphine**. Both medications, in view of their agonist action at opioid receptors, suppress the withdrawal symptoms. Other opioids

like dextropropoxyphene can also be used. Usually detoxification medicines are required for 2-3 weeks.

Another method is use of **clonidine**[Q] for detoxification. However, clonidine provides considerably less reduction in symptoms in comparison to buprenorphine or methadone. Clonidine is thus mostly used as an adjunct to methadone or buprenorphine during detoxification.

Accelerated detoxification: In this method, initially low doses of naltrexone is given to patient. Naltrexone being an opioid antagonist, produces severe withdrawal symptoms. After that, clonidine is used to control the symptoms. This method reduces the detoxification period to 4-5 days.

B. ***Maintenance treatment***: It follows the detoxification and the aim is to prevent the relapse. There are two different pharmacological approaches for maintenance phase.
   - ***Opioid substitution therapy***: In this method, the illicit, parenterally administered and short acting opioids (like heroin) are replaced by medically safe, orally taken and long acting opioids. The long acting opioids such as **methadone**, buprenorphine are mostly used. Levo alpha acetylmethadol was also used in past, however it has since been stopped as it is known to cause torsades de pointes.

     These orally used opioids are given at government approved centres. Though the patient continues to remain dependent, however he is protected from medical consequence of parenteral opioids (like HBV, HIV infection) and does not need to indulge in criminal activities to fund the illicit opioid use.
   - *Opioid antagonist treatment*: **Naltrexone**[Q] can be given to the patient after detoxification is complete. The rationale is that naltrexone will block the opioid receptors and any opioid use would fail to produce the euphoric response and hence would not be repeated.
   - Nonpharmacological approaches like cognitive behavioral therapy, narcotic anonymous (12 step self help groups), family therapy and group therapy are also useful.

C. ***Overdose treatment***: The opioids are lethal in overdose. The drug of choice for treatment of opioid overdose is i.v. **naloxone**[Q] (short acting opioid antagonist).

CANNABIS

Cannabis is derived from the hemp plant, ***cannabis sativa***. The plant has several varieties named after the regions where it is found (e.g. cannabis sativa indica in India, cannabis sativa americana in USA). Cannabis is the **most commonly used illegal drug**[Q] in the world and in India. The street names include joints, marijuana, grass, pot, weed, etc.

The active ingredient, which is responsible for the psychoactive effects of cannabis is **δ-9 tetrahydrocannabinol (THC)**[Q]. The various preparations of cannabis includes.

Table 2: THC concentration in various cannabis preparations.

Cannabis preparation	*THC content (%)*
Bhang (derived from dried leaves)	1
Ganja (derived from inflorescence)	1–2
Hashish/Charas (derived from resinous exudates)	8–14
Hash oil (lipid soluble plant extract)	15–40

The cannabis can be ingested orally or is more commonly smoked. It is unsuitable for intravenous use because of poor solubility in water and risk of anaphylaxis due to undissolved particulate matter.

Intoxication

It is characterized by euphoria, subjective sense of slowing of time, sense of floating in air, **reddening of conjunctiva**[Q] (due to dilatation of conjunctival blood vessels), **increased appetite** and dryness of mouth. Other symptoms include depersonalization, derealization, **synesthesia**[Q] (cross over of sensory perceptions. For example, patient may report that he is "seeing" music and "hearing" lights).

Sometimes, after consumption of cannabis, the person might feel restless, fearful, extremely anxious (similar to panic attack) and may feel that he is about to go crazy. This unpleasant experience is known as **"bad trip"**[Q].

Withdrawal Symptoms

It was earlier believed that cannabis doesn't cause physical dependence and produces no withdrawal symptoms, however recent studies have shown that there are mild withdrawal symptoms within 1-2 weeks of cessation and include insomnia, anxiety, decreased appetite, irritability, etc.

Cannabis Related Disorders

1. *Cannabis induced psychotic disorder*: It is also sometimes referred to as "hemp insanity". The patient has psychotic symptoms such as delusions and hallucinations.
2. *Cannabis induced anxiety disorders*.
3. ***Flash back phenomenon***[Q]: It is characterized by a recurrence of cannabis use experience in the absence of current cannabis use.
4. ***Running amok***[Q]: It is described as development of rage following cannabis use, in which person may hurt or even kill others in an indiscriminate fashion.
5. ***Amotivational syndrome***[Q]: It is characterized by an unwillingness to persist in any task, whether at school or at work. The patient appears uninterested, lethargic and apathetic.

Treatment

As withdrawal symptoms are mild, no medications are usually used. If required, benzodiazepines can be used for short-term.

Long-term treatment usually involves the psychotherapeutic approach and patient may be offered cognitive behavioral therapy, family therapy or group therapies.

HALLUCINOGENS

This class includes a variety of drugs like LSD (Lysergic acid diethylamide), mescaline, psilocybin, methylenedioxyamphetamine (MDMA, also called ecstasy), phencyclidine (angel dust) and ketamine.

Intoxication

The characteristic symptoms of LSD (and other hallucinogens) intoxication are depersonalization, derealization, **synesthesia**[Q] (also called as reflex hallucinations wherein patient may report cross over of sensory perceptions), illusions and hallucinations, autonomic hyperactivity features such as pupillary dilatation, tachycardia, sweating, palpitations, tremors, etc.

Similar to cannabis,at times, patient may become restless, fearful and may develop panic reaction **(bad trip)**[Q]. Usually patient can be calmed down by reassurance. However in cases with extreme agitation, benzodiazepines or antipsychotics may be required.

Withdrawal Symptoms

Hallucinogens do not cause any physical dependence, hence tolerance and withdrawal symptoms are not seen.

The use of hallucinogens like LSD can be associated with **flashback phenomenon**[Q] which refers to recurrence of LSD use experience in the absence of current LSD use.

Treatment

Mostly psychotherapeutic techniques are used to prevent relapse.

STIMULANTS

Cocaine

Cocaine is derived from the plant **erythroxylum coca**. **Sigmund Freud**[Q] had studied its pharmacological effects and is also believed to be addicted to cocaine for a long time. Coca cola used to contain cocaine till 1903 after which it ceased to be an ingredient.

Cocaine was initially used as a **local anesthetic**[Q] and still is used in **eye, nose and throat surgery**[Q]. The local anesthetic effect is mediated by blockade of fast, sodium channels.

Cocaine acts primarily by **blocking dopamine receptors**[Q] (D1 and D2) and **increasing dopamine concentration** in synaptic cleft. It is also an inhibitor of uptake of norepinephrine and hence has significant sympathomimetic effect. It causes marked vasoconstriction of peripheral arteries, which results in **hypertension**[Q], further, vasoconstriction of the epicardial coronary arteries, can lead to **ischemic myocardial injury**. Cocaine use can also cause seizures. Cocaine (most common) and amphetamines (second most common) are the substances mostly associated with seizures.

Cocaine is usually inhaled (known as snorting). Due to its vasoconstrictive properties nasal inhalation of cocaine causes nasal congestion and can even result in **nasal septal perforation**[Q]. Long-term use can also cause **jet black pigmentation of tongue**[Q].

Other methods of intake are smoking (known as **freebasing**[Q]) and subcutaneous or intravenous injections. Freebasing involves mixing street cocaine (which usually has procaine or sugar as adulterants) with freebase (chemically extracted pure cocaine). A particular potent way is consumption of cocaine and heroin (called speedball) together.

Crack, is a freebase form of cocaine which is smoked. It is extremely potent and even a single use can cause intense craving.

Intoxication: The intoxication is characterized by euphoria, pupillary dilatation, tachycardia, hypertension and sweating. Acute intoxication with moderate to high dose of cocaine may be associated with **paranoid ideations**, **auditory hallucinations**[Q] and visual illusions. The patients also occasionally report of tactile hallucinations (feeling of insects crawling under the skin), also known as **cocaine bugs**. (also known as **formication** and **magnan phenomenon**[Q]).

Withdrawal symptoms: Cocaine causes **strong psychological dependence**[Q] however physiological dependence (tolerance and withdrawal symptoms) is **mild**[Q] in comparison. The withdrawal symptoms includes feeling low, exhaustion, lethargy, fatigue, insatiable hunger. The most severe withdrawal symptom is depression, which can be associated with suicidal ideation.

Cocaine induced psychotic disorder: It is most commonly seen with intravenous use and crack users. The hallmark is **paranoid delusions (delusion of persecution)** and **auditory hallucinations**[Q]. Visual and tactile hallucinations (cocaine bugs) can also be present. The disorder is quite similar to **paranoid schizophrenia**[Q] in its presentation.

Treatment: The withdrawal symptoms are usually mild and no specific pharmacological agents reduces the intensity of withdrawal. Treatment mostly relies on psychotherapeutic interventions like cognitive behavioral therapy, group therapy, and support groups such as narcotic anonymous.

Amphetamines

The major amphetamines include dextroamphetamine, methamphetamine. Methylphenidate is also an amphetamine like compound. Amphetamines are used to increase performance and induce a euphoric feeling. Long-term use can result in amphetamine induced psychotic disorder, whose hallmark is presence of **paranoid delusions (delusion of persecution**[Q]**)** and auditory **hallucinations**[Q].

TOBACCO

It is the most commonly used substance in India (caffeine not considered) and is used in a variety of ways which includes smoking, chewing, applying, sucking and gargling. Beedi smoking is the most common form followed by cigarette smoking. The active ingredient of tobacco, which causes addiction is nicotine. The constituents responsible for cardiovascular disorders are **nicotine** and carbon monoxide.

Nicotine has a stimulant action and improves the attention, learning, reaction time and problem solving ability.

The withdrawal symptoms can develop within two hours of smoking the last cigarette and peak in 24-48 hours. These symptoms include craving for nicotine, irritability, anxiety, difficulty concentrating, **bradycardia**[Q], drowsiness and paradoxical trouble sleeping, increased appetite and weight gain.

Treatment

Pharmacotherapy

1. *Nicotine replacement therapy*: It is used to relieve the withdrawal symptoms by substituting nicotine in tobacco with nicotine in safer forms as they do not contain other harmful constituents present in tobacco. The various preparations include nicotine gums, nicotine lozenges, nicotine patches, nicotine inhalers and nicotine spray).
2. Medications which can be used include **bupropion (first line**[Q]**)** and clonidine and nortriptyline (second line). **Varenicline** is a new medication which has been approved for use in tobacco dependence. Varenicline acts as an agonist at α 7 nicotinic acetylcholine receptors and partial agonist on $\alpha 4\beta 2$ receptors.

Apart from medications behavioral therapy is also considered beneficial.

OTHER DRUGS

1. ***Inhalants or volatile solvents***: These include gasoline (petrol), glues, thinners, industrial solvents. These solvents are soaked in a cloth and than are sniffed (vapors are inhaled). It is more common seen in children and adolescents. Long-term use may cause irreversible damage to livers and kidneys, peripheral neuropathy and brain damage.
2. ***Benzodiazepines and other sedative hypnotics***: Benzodiazepines can produces physical and psychological dependence. The withdrawal symptoms

usually include anxiety, irritability, insomnia and in some cases seizures. The treatment usually involves slow tapering and then stopping of benzodiazepines along with supportive measures.

3. ***Caffeine***: Caffeine is the most widely used psychoactive substance worldwide. Caffeine use is associated with feeling of improved efficiency, increased energy levels and concentration. Excessive use can produce anxiety, restlessness, irritability. Caffeine can also produce physiological dependence and withdrawal symptoms include anxiety,irritability, mid depressive symptoms, nausea and vomiting.

QUESTIONS AND ANSWERS

QUESTIONS

Substance Use Disorders

1. Which of the following is not an important factor in development of substance dependence? *(AIIMS Nov 2009)*

A. Personality
B. Family history
C. Peer pressure
D. Intelligence

2. Not included in definition of substance abuse syndrome: *(PGI May 2011)*

A. Withdrawal symptom
B. Use despite knowing that it can cause physical/mental harm
C. Tolerance to drug
D. Recurrent substance abuse
E. Use despite substance related legal problems

3. All of the following are criteria for substance dependence *except*: *(AI 2012)*

A. Repeated unsuccessful attempts to quit the substance
B. Recurrent substance related legal problems/use of illegal substances
C. Characteristic withdrawal symptoms; substance taken to relieve withdrawal
D. Substance taken in larger amount and for longer than intended

4. Symptomatic treatment is not required in withdrawal of: *(AI 1998)*

A. Cannabis
B. Morphine
C. Alcohol
D. Cocaine

5. Drugs which cause both physical and psychological dependence are: *(DNB NEET 2014-15)*

A. Opioids
B. Alcohol
C. Nicotine
D. All of the above

Alcohol

6. Irresistible urge to drink alcohol is known as: *(DNB June 2011)*

A. Kleptomania
B. Pyromania
C. Dipsomania
D. Trichotillomania

7. All of the following statements are true about blackouts *except*: *(AIIMS May 2014)*

A. The person appears confused to the onlookers
B. Remote memory is relatively intact during the blackout
C. It is a discrete episode of anterograde amnesia
D. It is associated with alcohol intoxication.

8. A patient taking 120 mL alcohol everyday since last 12 years is brought to the hospital by his wife and is diagnosed to have alcohol dependence syndrome. Which of the following drug should be avoided in the management? *(AIIMS Nov 2014)*

A. Phenytoin
B. Disulfiram
C. Naltrexone
D. Acamprosate

9. All of the following are true about alcohol dependence syndrome *except*: *(DNB NEET 2014-15)*

A. No tolerance
B. Withdrawal symptoms
C. CAGE questionnaire
D. Physical dependence

10. First symptom to appear in alcohol withdrawal is: *(AIIMS May 2015)*

A. Visual hallucinations
B. Sleep disturbance
C. Tremors
D. Delirium

11. Most common symptom of alcohol withdrawal is: *(DNB NEET 2014-15, AI 2007)*

A. Bodyache B. Tremor
C. Diarrhea D. Rhinorrhea

12. Which of the following is characteristic of alcohol withdrawal? *(AIIMS 1991)*
A. Hallucination B. Illusion
C. Delusion D. Drowsiness

13. Widmark formula is used for: *(AIIMS 1993)*
A. Opium B. Cannabis
C. Alcohol D. Amphetamine

14. Male started drinking alcohol at age of 20 years, presently taking 3 quarters daily over 30 years, complains that now he gets the kick in 1 quarter. Probable diagnosis is: *(AIIMS Nov 2012)*
A. Withdrawal
B. Mellanby phenomenon
C. Reverse tolerance
D. Cross tolerance

15. Psychiatric complications of alcohol dependence are: *(PGI 2001)*
A. Anxiety B. Suicide
C. Depression D. Schizophrenia
E. Mania

16. Not a feature of delirium tremens is: *(AI 2011)*
A. Confusion (clouding of consciousness)
B. Visual hallucinations
C. Coarse tremors
D. Oculomotor nerve palsy (ophthalmoplegia)

17. True about delirium tremens: *(PGI June 2005)*
A. Clouding of consciousness
B. Coarse tremors
C. Chronic delirious behavior
D. Hallucination
E. Autonomic dysfunction

18. Wernicke's encephalopathy involves which part of central nervous system: *(PGI 2000)*
A. Mammillary body B. Thalamus
C. Frontal lobe D. Arcuate fasciculus

19. A 45-year male with a history of alcohol dependence presents with confusion, nystagmus and ataxia. Examination reveals 6th cranial nerve weakness. He is most likely to be suffering from:
A. Korsakoff's psychosis. *(AI 2005)*
B. Wernicke encephalopathy.
C. De Clerambault syndrome.
D. Delirium tremens.

20. Wernicke's encephalopathy is due to deficiency of: *(DNB NEET 2014-15)*
A. Folic acid B. Thiamine
C. Ascorbic acid D. Pyridoxine

21. Which of the following is included in the classical triad of Wernicke's encephalopathy? *(DNB NEET 2014-15)*
A. Peripheral neuropathy
B. Autonomic dysfunction
C. Ataxia
D. Abdominal pain

22. Not affected in Wernicke's disease: *(DNB NEET 2014-15)*
A. Hypothalamus B. Thalamus
C. Hippocampus D. Mammillary bodies

23. An alcoholic patient comes to your office, he can't tell his name. There is gross incoordination in walking, and his eyes are deviated to one side. What is the probable diagnosis? *(Bihar 2006)*
A. Wernicke's encephalopathy
B. Korsakoff's psychosis
C. Alcoholic hallucinosis
D. Delirium tremens

24. Feature(s) of Korsakoff psychosis: *(PGI NOV 2014)*
A. Confabulation B. Retrograde amnesia
C. Ophthalmoplegia D. Delirium

25. Korsakoff syndrome true is/are: *(DNB NEET 2014-15)*
A. Can be seen in chronic alcoholics
B. Absence of intellectual decline
C. Chronic amnestic syndrome
D. All of the above

26. All are relatively normal in Korsakoff's psychosis *except*: *(MAHE 2003, KA 2003; J & K 2000)*
A. Implicit memory B. Intelligence
C. Language D. Learning

27. True statement about Korsakoff's psychosis is: *(Rohtak 2000; JIPMER 1999) (UP 1999; PGI 1997)*
A. Severe anterograde + Mild retrograde memory defect
B. Mild anterograde + severe retrograde memory defect
C. Only anterograde memory defect
D. Only retrograde memory defect

28. In Korsakoff psychosis all are seen *except*:
A. Loss of remote memory *(JIPMER 1998)*
B. Loss of intellectual function but preservation of memory
C. Lack of insight, unable to understand the disability
D. Reversible state

29. A 35-year-old male comes with h/o 10-years of alcoholism and past history of ataxia with bilateral rectus palsy. He was admitted and treated. What changes can be expected to be seen in such condition? *(PGI June 2008)*
A. Progression to Korasakoff's psychosis
B. Residual ataxia in 50% of patients
C. Extraocular palsy disappears in hours
D. Immediate relief from symptoms

30. A 30-year-old male with history of alcohol abuse for 15 years is brought to the hospital emergency with 'complaints of fearfulness, misrecognition, talking to self, aggressive behavior, tremulousness and seeing snakes and reptiles that are not visible to others around him. There is history of last drinking alcohol two days prior to the onset of the present complaints. He is most likely suffering from: *(AIIMS Nov 2003)*
A. Delirium tremens
B. Alcoholic hallucinosis
C. Schizophrenia
D. Seizure disorder

31. A 40-year-old man presents to casualty with history of regular and heavy use of alcohol for ten years and morning drinking for one year. The last alcohol intake was three days back. There is no history of head injury or seizures. On examination, there is no icterus, sign of hepatic encephalopathy or focal neurological sign. The patient had coarse tremors, visual hallucinations and haddisorientation to time. Which of the following is the best medicine to be prescribed for such a patient? *(AI 2004)*
A. Diazepam B. Haloperidol
C. Imipramine D. Naltrexone

32. A chronic alcoholic patient stopped alcohol intake for 2 days due to religious reasons, developed symptoms of withdrawal on first day. On second day he had GTCS followed by another episode of GTCS after few hours. Drug which should be given to control the symptoms: *(AIIMS May 2013)*
A. Sodium valproate B. Phenytoin
C. Diazepam D. Clonidine

33. In alcohol withdrawal drug of choice is: *(DNB NEET 2014-15, PGI June 2007, AIIMS 1990)*
A. Haloperidol B. Chlordiazepoxide
C. Naltrexone D. Disulfiram

34. Drugs used for treatment of delirium tremens is/are: *(DNB NEET 2014-15, MCI screening)*
A. Diazepam B. Quetiapine
C. Chlordiazepoxide D. Both A and C

35. All of the following agents are used in the treatment of alcohol dependence *except*: *(DNB NEET 2014-15, AI 2011)*
A. Flumazenil B. Acamprosate
C. Naltrexone D. Disulfiram

36. In patients of substance-abuse, drugs used are: *(PGI 2002)*
A. Naltrexone B. Naloxone
C. Clonidine D. Lithium
E. Disulfiram

37. All are anticraving agent for alcohol *except*: *(AIIMS May 2009)*
A. Lorazepam B. Naltrexone
C. Topiramate D. Acamprosate

38. Which of the following is not used in delirium? *(PGI Dec 2005)*
A. Haloperidol B. Lithium
C. Diazepam D. Olanzapine
E. Risperidone

Opioid

39. Which of the following is not an opioid peptide? *(AIlMS May 2005)*
A. Endorphins B. Epinephrine
C. Leu-enkephalins D. Met-enkephalins

40. All are seen in morphine poisoning *except*:
A. Cyanosis *(AI 1997)*
B. Pinpoint pupil
C. Hypertension
D. Respiratory depression

41. Opioids can cause which of the following?
A. Physical dependence *(DNB NEET 2014-15)*
B. Psychological dependence
C. Both A and B
D. None of the above

42. Usual sign of morphine withdrawal are all *except*: *(PGI May 2013, 1999, 1993)*
A. Dryness of secretion
B. Constipation
C. Miosis
D. Lacrimation, diarrhea, rhinorrhea
E. Generally occur after 6-8 hours of last use

43. Withdrawal of which of the following causes yawning and piloerection ? *(DNB NEET 2014-15)*
A. Morphine B. Cannabis
C. Smoking D. Alcohol

44. A boy is having diarrhea, rhinorrhea, sweating and lacrimation. What is the most probable diagnosis?
A. Cocaine withdrawal *(AIIMS Nov 2010)*
B. Heroin withdrawal
C. Alcohol withdrawal
D. LSD withdrawal

45. Treatment of opioid dependence includes: *(PGI May 2011)*
A. Naloxone B. Naltrexone
C. Acamprosate D. Buprenorphine
E. Topiramate

46. Which drug is most commonly used worldwide in maintenance treatment for opioid dependence? *(AI 2011)*
A. Naltrexone B. Methadone
C. Imipramine D. Disulfiram

47. Which of the following is an alternative to methadone for maintenance treatment of opiate dependence? *(AIIMS May 2005)*
A. Diazepam
B. Chlordiazepoxide
C. Buprenorphine
D. Dextropropoxyphene

48. Naltrexone is used in opioid addiction because: *(AIIMS May 2010, 2007, 2006, AI 2007)*
A. To treat withdrawal symptoms
B. To treat overdose of opioids and prevent respiratory depression
C. Prevent relapse
D. Has addiction potential; used for detoxification of opioid

Cannabis

49. After use of some drug, a person develops episodes of rage in which he runs about and indiscriminately injures a person who is encountered in way. He is probably addict of: *(AIIMS 1997)*
A. Alcohol B. Cannabis
C. Opium D. Cocaine

50. Which of the following substances is associated with flashback phenomenon? *(KA 1999)*
A. Cannabis
B. LSD
C. Psilocybin
D. All of the above

51. Amotivational syndrome is seen in: *(DNB NEET 2014-15, MH 2010, TN 1999)*
A. Cannabis B. Cocaine
C. Amphetamine D. Heroin

52. Which of the following substance intoxication causes conjunctival congestion, increased appetite, dry mouth, tachycardia and synesthesia? *(MH 2009)*
A. Cannabis B. Caffeine
C. Cocaine D. Codeine

53. Bad trip is seen with which of the following drugs: *(DNB NEET 2014-15)*
A. Cocaine B. Cannabis
C. LSD D. Heroin

Others

54. Correct statement about cocaine abuse: *(PGI May 2011)*
A. Block uptake of dopamine in CNS
B. Strong physical dependence
C. Increased BP
D. Severe tolerance
E. Cause impairment of nerve conduction

55. Paranoid delusions are associated with use of: *(AI 2012)*
A. Cocaine B. Heroine
C. Cannabis D. GHB

56. Jet black pigmentation of tongue with tactile hallucination and visual hallucinations is a feature of which substance use: *(RJ 1998)*
A. Cocaine B. Cannabis
C. Heroin D. LSD

57. Paranoid psychosis observed with cocaine abuse can be explained by: *(AI 2011, 2012)*
A. Tolerance B. Intoxication
C. Reverse tolerance D. Withdrawal

58. Formication and delusion of persecution, both are together seen in: *(AIIMS May 2011, 2009)*
A. LSD psychosis
B. Amphetamine psychosis
C. Cocaine psychosis
D. Cannabis psychosis

59. A 16-year-old boy suffering from drug abuse presents with crossover of sensory perceptions, such that, sounds can be seen and colors can be heard. Which of the following is the most likely agents responsible for drug abuse? *(AI 2012)*
A. Cocaine B. LSD
C. Marijuana D. PCP(phencyclidine)

60. Psychosis resulting due to chronic amphetamine intake most commonly resembles: *(Orissa 1999)*
A. Delirium
B. Mania
C. Paranoid schizophrenia
D. Dissociative disorder

61. Used for averting tobacco dependence is: *(DPG 2008)*
A. Buspirone B. Methadone
C. Bupropion D. Buprenorphine

62. Most common substance of abuse in India is: *(DNB NEET 2014-15, AIIMS May 2010, May 2007, AI 2007)*
A. Tobacco B. Cannabis
C. Alcohol D. Opium

63. Which is not a feature of nicotine withdrawal? *(DNB December 2011)*
A. Depression B. Headache
C. Tachycardia D. Anxiety

64. Which is not a feature of caffeine withdrawal? *(DNB December 2011)*
A. Headache B. Hallucination
C. Depression D. Weight gain

ANSWERS

1. D. The personality, family history and peer pressure all play a role in development of dependence. There is no correlation between intelligence and substance use.
2. A, C.
   The DSM-IV, diagnosis of substance abuse includes the following four criterion (1) recurrent use resulting in failure to fulfil major obligations at work, school or home. (2) recurrent use in situations in which it is physically hazardous (such as while driving) (3) substance use causing legal problems and (4) substance use causing social or interpersonal problems (e.g. fights with spouse). Withdrawal and tolerance are a criterion for "substance dependence" but not "substance abuse". Please remember in DSM-5, both these diagnosis of "substance dependence" and "substance abuse" have been removed and replaced by "substance use disorders".
3. B. Neither presence of legal problems related to substance use nor use of illegal substances, is a criterion for substance dependence.
4. A. Since cannabis causes very mild withdrawal symptoms hence, no symptomatic treatment is required. LSD and other hallucinogens also do not cause any withdrawal symptoms or tolerance.
5. D.
6. C. Dipsomania is compulsive drinking or an irresistible urge to drink alcohol.
7. A. In alcoholic balackouts, which is an anterograde amnesia, the person later doesn't remember, however at that time he appears to be totally in control and his behavior appears purposeful to others. He doesn't look confused to the onlookers.
8. B. Since this patient, has been taking alcohol every day, at the time of presentation, disulfiram should be avoided as it may precipitate a severe disulfiram like reaction. Disulfiram should not be used until person has abstained from alcohol for atleast 12 hours. Also, please remember that phenytoin doesn't have any role in the management of alcohol dependence. However, this question is specifically asking for the drug that should be avoided and hence disulfiram is the best answer.
9. A. Alcohol does produce tolerance.

10. C. Tremors usually appear 6-8 hours after last alcohol intake.
11. B. Tremor is the most common withdrawal symptom (excluding the hangover).
12. A. Alcoholic hallucinosis is a characteristic withdrawal symptom of alcohol. Delusion of infidelity (morbid jealousy) is also seen in chronic alcoholism but it is not related to withdrawal state.
13. C.
14. C. Reverse tolerance refers to the phenomenon where the intoxicating effects of alcohol are seen progressively with lower dosages.
15. A, B, C, E.
    See the list of alcohol induced disorders in the text.
16. D. Oculomotor nerve plays causing ophthalmoplegia is a feature of Wernicke's encephalopathy and not delirium tremens.
17. A, B, D, E.
    Delirium tremens is usually not a chronic condition.
18. A, B.
    Kindly *see* text.
19. B.
20. B.
21. C.
22. C. Kindly *see* text.
23. A. Here, there is history of ataxia (incoordination) and ophthalmoplegia. The inability to tell name might be because of confusional state. The likely diagnosis is Wernicke's encephalopathy.
24. A, B.
25. D. Korsakoff syndrome is due to thiamine deficiency. Apart from alcoholism, malnutrition can also cause it. Also it presents with amnesia and confabulations.
26. D. In Korsakoff psychosis, there is prominent anterograde amnesia. Whenever there is anterograde amnesia (i.e. new memories cannot be made), learning would be severely affected.
27. A.
28. A, B, D.
    There is some mistake in the language of question as only option C is correct and all other options are wrong statement. In Korsakoff, both remote memory and intellect remains preserved and the patient doesn't have insight into his symptoms.
29. A, B, C.
    The diagnosis in this patient is Wernicke's encephalopathy. The patients when treated adequately have the following course (1) Ophthalmoplegia starts to resolve within hours, though horizontal nystagmus often persists (2) Ataxia begins to improve within first week however around 50% of patient will be left with some residual abnormalities. (3) Global confusion begins to recover within 2-3 weeks and would usually clear completely in 1-2 months. Despite treatment, patient can progress to Korsakoff syndrome.
30. A. The onset of symptoms is after 2 days of last intake. There is history of chronic alcohol use. There is history of disorientation (misrecognition), visual hallucination (seeing snakes and reptiles), hyperactivity. All these put together is suggestive of delirium tremens.
31. A. The diagnosis is delirium tremens and the drug of choice is benzodiazepines like diazepam.
32. C. The diagnosis is alcohol withdrawal seizures and the drug of choice is benzodiazepines like diazepam.
33. B. Benzodiazepines are the drug of choice in alcohol withdrawal. If the question asks you to chose a specific benzodiazepine, the best choice would be chlordiazepoxide.
34. D. The best answer here is both diazepam and chlordiazepoxide as the benzodiazepines are the drugs of choice. However, please remember antipsychotics can also be used if patient is having excessive hallucinations or is excessively agitated and these symptoms are not responding to benzodiazepines alone.
35. A. Flumazenil has no role. It is used in benzodiazepine overdose.
36. A, B, C, E.
    Naltrexone is used in alcohol as well as opioid dependence. Naloxone is used in opioid overdose. Clonidine can be used in opioid withdrawal and disulfiram in alcohol dependence.
37. A. *See* text.
38. B. As explained above, benzodiazepines and antipsychotics can be used in delirium.
39. B. Epinephrine is not an opioid peptide. The endogenous opioid peptides include β endorphins, Met and Leu enkephalins and Dynorphins.
40. C. Hypotension is a feature and not hypertension.

41. C.
42. A, B, C.
43. A.
44. B.
45. B, D.
46. B. Methadone is used as methadone maintenance treatment, in long-term treatment of opioid dependence.
47. C. Methadone, buprenorphine, levo alpha acetylmethadol can be used for maintenance treatment of opiate dependence.
48. C. The only indication for naltrexone in opioid dependence is relapse prevention in highly motivated patients. For opioid overdose naloxone is used and not naltrexone.
49. B. The description is suggestive of run amok which is seen with cannabis use.
50. D. Cannabis and hallucinogens can cause flash back phenomenon.
51. A.
52. A.
53. B and C.
54. A, C and E.
    Cocaine causes strong psychological dependence however physiological dependence (tolerance and withdrawal symptoms) is mild in comparison. Cocaine blocks dopamine and norepinephrine uptake and hence causes hypertension. It blocks nerve conduction and is also used as an anesthetic agent.
55. A. Cocaine.
56. A.
57. B. The delusion of persecution and auditory hallucinations can be seen in cocaine intoxication.
58. C.
59. B. The sign here is synesthesia (sounds can be seen and colors can be heard) which is in with LSD and cannabis intoxication.
60. C. The symptoms of amphetamine induced psychotic disorder include delusion of persecution and auditory hallucinations and it resembles paranoid schizophrenia.
61. C.
62. C. This is a controversial question. Now, if the question was simply, most commonly used substance in India, the answer would have been tobacco without any controversy. Since the question mentions most common "substance abuse", the controversy arises. According to DSM-IV, there can be two types of substance use disorders (1) substance dependence (2) substance abuse. These two can be considered as two different levels of addiction, substance abuse is a lower level and substance dependence is higher level. Now, tobacco can cause dependence but not abuse i.e. DSM-IV provides criterion for tobacco dependence but says that "substance abuse" is not applicable for tobacco. Whereas for alcohol which is the second most commonly used substance in India, both "alcohol dependence" and "alcohol abuse" has been described.If this question is interpreted strictly in terms of DSM-IV diagnoses, of substance abuse, the answer becomes alcohol, as there is no diagnosis of "tobacco abuse". However if the term abuse is used literally, the answer becomes tobacco.

    The book published by AIIMS, on substance use disorders, says that "alcohol is the most frequently used substance as seen in the NHS and DAMS'. Here "NHS" and "DAMS" refers to name of surveys which were conducted by Indian government. Further, a table titled "major drugs of abuse in India" again mentions alcohol on the top and doesn't mention anything about tobacco. Since, this question has been asked by AIIMS, its likely that they will follow their own book. So, my advise is mark alcohol as the answer.
63. C. Bradycardia is a symptom of nicotine withdrawal and not tachycardia.
64. B. *See* text.

Chapter

6 Organic Mental Disorders

Organic mental disorders are caused by either a **demonstrable cerebral disease**, **brain injury** or other insults leading to **cerebral dysfunction**. Following are the common symptoms seen in organic mental disorders:

A. *Cognitive impairment*: The term "cognition" is used to describe all the mental processes that are utilized to gain knowledge. These processes include memory, language, orientation, judgment, performing actions (praxis) and problem solving. At times the term "cognition" is used to describe the thoughts. In organic mental disorders one or more of cognitive functions are impaired. Frequently patient presents with **disorientation (to time, place and person)**, **impaired attention** and concentration, disturbances in memory (especially recent memory resulting in anterograde amnesia), etc. As organic mental disorders commonly have disturbances of cognition, they are also known as **cognitive disorders**.

B. *Disturbances of consciousness*: The consciousness has different levels ranging from alertness to coma. Usually the term "alertness" is used when one is aware of the internal and external stimuli and can respond to them. The patients with organic mental disorders usually have disturbances of consciousness which can be of varying severity. The term "somnolence or lethargy" is used when patient tends to drift off to sleep when not actively stimulated. The next level is "obtundation" in which patient is difficult to arouse and when aroused appears confused. The next level is "stupor or semicoma" in which patient is mute and immobile. When stimulated persistently and vigorously he may groan or mumble. Finally, in "coma" , patient is totally unarousable and remain with their eyes closed. Various other terms such as "**confusional** state", **"clouding of consciousness"** and **"altered sensorium"** are used to describe the disturbances of consciousness in delirium.

C. *Hallucinations*: These patients most commonly have **visual hallucinations**[Q] although auditory, olfactory, gustatory and tactile hallucinations can also be present.

D. *Delusions*: The delusions are usually **transient**[Q]. Complex delusions are **rare**[Q].

The organic mental disorders are classified in the following groups:

A. Delirium
B. Dementia
C. Amnestic disorders

DELIRIUM

It is the **most common**[Q] organic mental disorder. It is characterized by an **acute onset**[Q] of symptoms and a **fluctuating course**[Q]. It is most commonly seen in elderly population. The patients who have been hospitalized for medical and surgical disorders frequently develop delirium. The patients with **hip fractures**[Q], **open heart surgeries**[Q], **severe burns**[Q], **pneumonia**[Q], **postoperative patients**[Q] and critically ill patients have high prevalence of delirium. The history of a medical disorder followed by sudden development of disturbances of consciousness, cognition and psychiatric symptoms such as hallucinations and delusions is strongly suggestive of delirium. The other causes includes use of multiple medications (especially those with anticholinergic actions). Withdrawal of psychoactive substances (such as alcohol and sedatives/hypnotics) is another common cause. Delirium can

develop in older patients wearing eye patches after cataract surgery (due to sensory deprivation), also known as **black-patch delirium**Q.

Symptoms

The clinical features of delirium are:

- **Disturbances of consciousness**Q (ranging from somnolence to coma)
- Impairment of attention
- **Disorientation** to time, place and person
- Memory disturbances (impairment of immediate and recent memory with **relatively intact remote memory**Q)
- Perceptual disturbances like illusions and hallucinations (**most commonly visual**Q) and transient delusions
- Hyperactivity or hypoactivity, agitation
- Autonomic disturbances
- Disturbances of sleep wake cycle (insomnia or reversal of sleep wake cycle)
- ***Sundowning***: It refers to diurnal variation of symptoms with worsening of symptoms in the evening (i.e. with downing of sun)
- *Floccillations (or carphologia)*: Aimless picking behavior, where patient appears to be picking at his clothes/bed
- *Occupational delirium*: Patient behaves as if he is still on his job, despite being in hospital (e.g. a tailor may ask for clothes and scissors, while lying on the bed of the hospital).

The neurotransmitter involved in delirium is **acetylcholine** and the neuroanatomical area involved is the **reticular formation** (kindly remember reticular ascending system is responsible for arousal in a person).

Diagnosis

The diagnosis of delirium is made **clinically**Q, on the basis of above mentioned symptoms. The sudden onset and fluctuations in symptoms are important pointers towards the diagnosis. Bedside examinations such as **mini mental status examination (MMSE)**Q and mental status examination (MSE) are used to provide a measure of cognitive impairment.

Generalized slowingQ on EEG is a common finding in patients with delirium, however delirium caused by alcohol or sedative-hypnotic withdrawal has low voltage fast activity on EEG.

Delirium versus dementia: The acute presentation and fluctuations of symptoms is suggestive of delirium. Dementia develops slowly and usually the symptoms are stable over time. Further, a patient with delirium presents with disturbances of consciousness whereas a patient with dementia doesn't have any consciousness disturbances. In some cases, a patient of dementia may develop superimposed delirium, a condition called as "beclouded dementia".

Delirium versus schizophrenia: A patient of delirium may have pronounced hallucinations and delusion and may resemble schizophrenia. However, in delirium the hallucinations are not constant and delusions are transient and not systematized (not organized) whereas in schizophrenia the hallucination are more constant and delusions are also better organized. Further, the patient of delirium has disturbances of attention and disturbed consciousness which is not seen in patient with schizophrenia.

Treatment

A. Treat the underlying cause.
B. **Antipsychotics** can be used for management of delusions, hallucinations and agitation seen in delirium.
C. **Benzodiazepines** are used for insomnia and are the drugs of choice in alcohol withdrawal delirium (delirium tremens).

DEMENTIA

Dementia is defined as a progressive impairment of cognitive functions in the **absence of any disturbances of consciousness**Q. The prevalence of dementia increases with age, with prevalence of around 5% in the population older than 65 years and prevalence of 20–40% in the population older than 85 years. The underlying cause of dementia can be permanent or reversible.

> DSM-5 Update: The DSM-4 diagnosis of dementia and amnestic disorder are sub-sumed under the newly named entity major neurocognitive disorders (NCD).

> DSM-5 Update: In DSM-5, a new diagnostic category of mild neurocognitive disorders (NCD) has been added, for the patients who present with milder cognitive impairment (which is not sever enough of diagnosis of dementia or major neurocognitive disorder).

Symptoms

The following are the symptoms of dementia:

A. *Cognitive impairment*: The cognitive impairment is characterized by 4 A's: amnesia, aphasia, apraxia and agnosia.

- **Amnesia** refers to the memory impairment. Initially the loss is of recent memory followed by immediate memory and lastly the remote memory. Another way of describing memory impairment is in terms of episodic (memory for events), semantic memory (memory for facts such as rules, words and language) and visuospatial deficits. In episodic memory, there is a gradient of loss with more recent events being lost before remote events. Semantic memory is preserved in the early course of disease and is gradually lost as the disease progresses. Visuospatial skills deficits manifests with symptoms of disorientation in strange environments and later, wandering and getting lost in even familiar environments.
- Aphasia refers to the disturbances of **language function**. The initial disturbance is usually "word-finding difficulties" which gradually progresses to more severe abnormalities.
- Apraxia is inability to perform learned motor functions. For example, patient may start having difficulties in functions like buttoning the shirt or combing the hair.
- Agnosia is inability to interpret a sensory stimulus. One of the common disturbance is "prosopagnosia"[Q] which is inability to identify the face. At times patient may be unable to identify his own face , a condition known as "autoprosopagnosia".
- Apart from the 4 A's, disturbances in executive functioning (i.e. planning, organizing, sequencing and abstracting) is another important cognitive impairment.

B . *Behavioral and psychological symptoms*: These may include:

- *Personality changes*: There might be a significant change in the personality. Patient may become introvert and seem to be unconcerned about others or patients may become hostile. The personality changes are mostly seen in patients with frontal and temporal lobe involvement.
- *Hallucinations and delusions*: Delusion mostly seen is delusion of persecution and delusion of theft.
- Depression, manic and anxiety symptoms.
- Apathy, agitation, aggression, wandering and circadian rhythm disturbances.
- *Catastrophic reaction*: The subjective awareness of intellectual deficits while in a stressful situation may result in an emotional outburst in a patient of dementia. This is known as **"catastrophic reaction"**[Q].

C. *Focal neurological signs and symptoms*: These are usually seen in vascular dementia (multi-infarct dementia) and correspond to the site of vascular insults. These include exaggerated tendon reflexes, extensor plantar response, gait abnormalities, etc.

Types

The dementia can be divided in to reversible and irreversible dementias. It is extremely important to do detailed work up of a patient of dementia as around 15% of cases are reversible. The **reversible causes of dementia**[Q] are:

A. Neurosurgical conditions (subdural hematoma, normal pressure hydrocephalus, intracranial tumors, intracranial abscess).
B. Infectious causes (meningitis, encephalitis, neurosyphilis, lyme disease).
C. Metabolic causes (vitamin B12 or folate deficiency, niacin deficiency, hypo and hyperthyroidism, hypo and hyperparathyroidism).
D. Others (drugs and toxins, alcohol abuse, autoimmune encephalitis).

Dementia can also be classified into cortical and subcortical types depending on the area of brain which is affected first by the dementing process.

Cortical dementias: These disorders are characterized by early involvement of cortical structures and hence early appearance of cortical dysfunction. These disorders have early and severe presentation of the As: amnesia, apraxia, aphasia, agnosia and acalculia (impaired mathematical skills) indicating cortical involvement. **Alzheimer's disease**[Q] is the prototype of cortical dementia. Others include Creutzfeldt-Jakob disease, Pick's disease and other frontotemporal dementias.

Subcortical dementia: These disorders are characterized by early involvement of subcortical structures like basal ganglia, brain stem nuclei and cerebellum. These disorders are characterized by early presentation of motor symptoms (abnormal movements like tics, chorea, dysarthria, etc), significant disturbances of executive functioning and prominent behavioral and psychological symptoms like apathy, depression, bradyphrenia (slowness of thinking). The examples include Parkinson's disease, Wilson's

disease, Huntington's disease, multiple sclerosis, progressive supra nuclear palsy, normal pressure hydrocephalus.

Some dementias such as vascular dementia, dementia with lewy body have mixed presentation.

Alzheimer's Disease (Dementia of Alzheimer's Type)

It is the **most common**[Q] cause of dementia. The prevalence of Alzheimers disease increases with age, the rates are around 5% for all those aged 65 years and older, increasing to around 20-30% for all those aged above 85 years. The Alzheimers disease can be divided into early onset (presenile), if the age of onset is 65 years or earlier; or late onset (senile), if the age of onset is after 65 years. At all ages, females outnumber males by a ratio of 2 or 3:1 except in early onset familial forms (inherited as autosomal dominant disorder) in which sex ratio is 1. The onset is usually insidious and progression is gradual. The **insight**[Q] (awareness of illness) is lost relatively early in the course of illness. In the initial phase symptoms include memory disturbances, gradually apraxia, agnosia, aphasia and acalculia develop and executive functions are lost. In the later stages neurological disabilities like tremors, rigidity and spasticity may develop.

Pathophysiology: The classical gross neuroanatomical finding in Alzheimers disease is **diffuse atrophy** with **flattened cortical** sulci and **enlarged cerebral ventricles**.

The classical microscopic findings are **neuritic (senile) plaques**[Q] and **neurofibrillary tangles**[Q]. Senile plaques, also referred to as amyloid plaques are composed of a particular protein Aβ. This protein is derived from **amyloid precursor protein (APP)** by the action of β- and γ-secretase enzymes. The Aβ protein combines to form fibrils. The senile plaques are **extracellular** deposits of Aβ and are found in all cortical areas and also in striatum and cerebellum. The amyloid-β peptide not only deposits in the brain parenchyma in the form of amyloid plaques but also in the vessel walls in the form of **cerebral amyloid angiopathy (CAA)**[Q].

The senile plaques can also be seen in elderlies who do not have Alzheimer's and their number increases with age. Hence senile plaques are **not specific** for Alzheimer disease. The amyloid plaques are not correlated with the severity of dementia.

The neurofibrillary tangles (NFTs) are **intraneuronal** aggregates of tau protein. The tau protein present in tangles is in a highly phosphorylated form and has abnormal functioning. Normally, tau protein binds and stabilizes microtubules, which are essential for axonal transport, however in Alzheimer's this function is deranged. The neurofibrillary tangles are widely distributed in cortical structures and hippocampus, but always spare **cerebellum**[Q]. Multiple studies have established that **amount and distribution of NFTs correlates with the duration and severity of dementia**[Q].

Both senile plaques and neurofibrillary tangles can be present in elderlies without any dementia. However in patients with dementia, these findings are extensive and wide spread. The neuropathological diagnosis of Alzheimer disease requires extensive presence of both senile plaques (extracellular deposits) and neurofibrillary tangles (intracellular inclusions).

Granulovacuolar degeneration (GVD)[Q] and **Hirano bodies**[Q] (eosinophilic inclusions) are abnormalities seen in the cytoplasm of hippocampal neurons in patients with Alzheimer disease. Both of them are present in elderlies without dementia, however they are much more severe and widespread in Alzheimers disease.

Amyloid cascade hypothesis: According to this hypothesis, mutation in APP gene near cleavage site favor the cleavage by β and γ secretase, resulting in the production of Aβ. The Aβ peptides form Aβ oligomers which in turn induce tau phosphorylation, producing neurofibrillary tangles. The tau protein in this highly phosphorylated form is not able to stabilize microtubules, resulting in granulovascular degeneration of neurons, neuronal loss and synaptic loss.

Neurochemistry: Alzheimer's disease is predominantly a disorder of **cholinergic neurons**[Q] and loss of cholinergic neurons in nucleus basalis of meynert is a consistent finding. Apart from acetylcholine, norepinephrine and serotonin have also been implicated in some cases.

Genetics: Alzheimer's disease has shown linkage to chromosome **1,14 and 21**. A small number of cases of Alzheimer disease are early onset and familial and are inherited in autosomal dominant fashion. Mutations in three genes, **amyloid precursor protein**[Q] (chromosome 21), **presenilin-1**[Q] (chromosome 14) and **presenilin-2**[Q] (chromosome 1) have been found in most cases with familial Alzheimer's disease. The majority of cases are however sporadic and late onset. ***Apo E4* gene**[Q] is associated with the risk of development of Alzheimers disease, however its testing is not recommended as it is neither sensitive nor specific for Alzheimer's disease.

The patients with **Down's syndrome**[Q] have significantly higher risk for development of Alzheimer's disease. The gene for APP (amyloid precursor protein) is located on chromosome 21.

Risk factors: Age is the most important risk factors. Other risk factors include head injury, hypertension, insulin resistance, depression. Few studies have claimed that **smoking**[Q] is a protective factor against Alzheimer's but this finding has been contradicted by other studies. High education levels and remaining physically and mentally active till late in life are protective factors against Alzheimer's disease.

Vascular Dementia or Multi-infarct Dementia

This is the second most common type of dementia. Occurrence of **multiple cerebral infarctions** (caused by occlusion of cerebral vessels by arteriosclerotic plaques or thromboemboli) results in progressive deterioration of brain functions, finally resulting in dementia. There are acute exacerbations which correspond to the new infarcts, and result is stepwise deterioration of symptoms **(step-ladder pattern)**. The general symptoms of dementia are present. In addition patient has focal neurological deficits which correspond to site of infarction. There is usually history of previous stroke or transient ischemic attacks. The patients usually have hypertension and other cardiovascular risk factors. The treatment involves management of risk factors and cholinesterase inhibitors.

Binswanger's disease[Q]: It is also known as subcortical arteriosclerotic encephalopathy, and is characterized by multiple small white matter infarctions and can produce symptoms of subcortical dementia.

Lewy Body Disease (Dementia with Lewy Body)

The clinical signs and symptoms are similar to Alzheimer disease. Apart these patients also have fluctuating levels of attention and alertness, recurrent visual hallucinations and parkinsonian features (tremors, rigidity and bradykinesia). Antipsychotic medications should be avoided as these patients are extremely sensitive to antipsychotics and can develop drug induced parkinsonism.

Huntington's Disease, Parkinson's Disease, Wilson's Disease and Multiple Sclerosis

These predominantly motor diseases are associated with the development of dementia. The dementia seen is of subcortical type with more motor abnormalities and less of amnesia, apraxia, aphasia and agnosia.

HIV Related Dementia

The diagnosis of HIV dementia (AIDS dementia complex) is made by lab evidence of systemic HIV infection, cognitive deficits, presence of motor abnormalities or personality changes. Personality changes are characterized by apathy, emotional lability or disinhibition.

Head Trauma Related Dementia

Dementia can develop as a sequelae of head trauma. Dementia pugilistica (punch drunk syndrome) can develop in boxers after repeated head trauma.

Frontotemporal Dementia (FTD)

Frontotemporal dementias are a group which have similar presentation but may be caused by a variety of neuropathological substrates. **Pick's disease**[Q] is one pathological variant of FTD, and is characterized by presence of **pick's bodies**. The frontotemporal dementia's have an **earlier onset**[Q], around 45-65 years and mainly present with behavioral symptoms and change in personality with relative preservation of memory. Three distinctive forms of FTD have been described on the basis of clinical presentation.

A. ***Frontal variant FTD***: The symptoms are primarily of loss of frontal lobe function. The classical feature is stereotyped behavior, disinhibition and apathy.
B. ***Semantic dementia***: The symptoms are primarily of loss of temporal lobe functions and is characterized by complaints of loss of memory for words.
C. ***Progressive nonfluent aphasia***: It presents with speech dysfluency and word finding difficulties.

Pseudodementia

The depression in elderly patients may mimic symptoms of dementia and hence is known as **pseudodementia**[Q]. A depressed patient may get a low score on MMSE, as depressed individual lacks motivation to solve the questions. Hence low score on MMSE should be carefully interpreted, if depression is suspected.

Management of Dementia

The evaluation of cognitive functions is usually done using the screening test of **mini mental status examination (MMSE)**[Q]. A score of less than 24 (out of a maximum 30) is suggestive of dementia. In accordance with the cholinergic

hypothesis, **cholinesterase inhibitors** are widely used for treatment of cognitive deficits in Alzheimer's disease. Donepezil, rivastigmine, galantamine and tacrine are few of the drugs belonging to this category.

Memantine, a NMDA receptor antagonist has also been approved for the treatment. For behavioral and psychological symptoms of dementia, symptomatic treatment is used and may include antidepressants, antipsychotics and benzodiazepines.

AMNESTIC DISORDERS

Amnestic disorder is a broad category that includes a variety of conditions which present with amnestic syndrome. Amnestic syndrome is characterized by inability to form new memories (anterograde amnesia) and the inability to recall previously remembered knowledge (retrograde amnesia). Short-term and recent memory are usually impaired with preservation of remote and immediate memory. The **major causes**[Q] of amnestic disorders are:

A. Thiamine deficiency (Korsakoff syndrome)
B. Hypoglycemia
C. Primary brain conditions (head trauma, seizures, cerebral tumors, cerebrovascular disease, hypoxia, electroconvulsive therapy, multiple sclerosis)
D. Substance related disorders (alcohol, benzodiazepines).

QUESTIONS AND ANSWERS

QUESTIONS

Organic Mental Disorders

1. Which of the following behavioral problems would suggest an organic brain lesion? *(SGPGI 2005, DNB 2006)*
A. Formal thought disorder
B. Auditory hallucinations
C. Visual hallucinations
D. Depression

2. Organic mental disease is indicated by: *(AIIMS 1991, DNB 1993)*
A. Incoherence
B. Delusion
C. Flight of idea
D. Perseveration of speech

3. Mini mental status examination is: *(DNB 2004, JIPMER 2002)*
A. Method to investigate common psychiatric problem
B. 30 point program to evaluate cognitive functions
C. To evaluate schizophrenia
D. Instrument to measure delirium

4. Cognitive disorders are: *(PGI June 2006, 2007)*
A. Intellectualization
B. Depersonalization
C. Dementia
D. Delirium
E. Hallucination
F. Secondary gain

5. Disorientation occurs in: *(AI 1993)*
A. Schizophrenia
B. Organic brain syndrome
C. Depression
D. Mania

6. Which of the following suggest a psychotic rather than an organic disorder? *(DNB June 2009)*
A. Confusion
B. Complex delusions
C. Impairment of consciousness
D. Lack of insight

7. Feature(s) suggestive of schizophrenia rather than organic psychosis is/are: *(PGI June 2009)*
A. Third person hallucination
B. Split personality
C. Visual hallucination
D. Altered sensorium
E. Systematized delusion

8. In India psychiatric disorder in people above 60-year of age is mostly due to: *(DNB 2003, Calcutta 2K)*
A. Depression
B. Dementia
C. Hysteria
D. Schizophrenia

Delirium

9. Most important feature of delirium is: *(DNB NEET 2014-15)*

A. Impaired attention
B. Anxiety
C. Hyperactivity
D. Clouding of consciousness

10. Delirium is defined as: *(DNB NEET 2014-15)*
A. Acute onset of disturbed consciousness
B. Chronic onset of disturbed consciousness
C. Progressive generalized impairment of intellectual functions and memory without impairment of consciousness.
D. Disorientation without clouding of consciousness

11. Features of delirium: *(PGI Nov 2010, June 2008)*
A. Deficit of attention (attention deficit)
B. Autonomic instability (dysfunction)
C. Altered sleep wake pattern
D. Visual hallucination and clouding of consciousness
E. Delirium cannot be diagnosed clinically

12. Delirium and schizophrenia differ from each other by: *(DNB 2003, WB 2001, KA 2004)*
A. Change in mood
B. Clouding of consciousness
C. Tangential thinking
D. All of the above

13. Slow waves in EEG activity are seen in: *(PGI 1998)*
A. Depression
B. Delirium
C. Schizophrenia
D. Mania

14. A patient with pneumonia for 5 days is admitted to the hospital in altered sensorium. He suddenly ceases to recognize the doctor and staff. He thinks that he is in jail and complains of scorpion attacking him. His probable diagnosis is: *(AI 2001)*
A. Acute dementia
B. Acute delirium
C. Acute schizophrenia
D. Acute paranoia

15. A 60-year man had undergone cardiac bypass surgery 2 days back. Now he started forgetting things and was not able to recall names and phone numbers of his relatives. What is the probable diagnosis? *(AI 2010)*
A. Depression
B. Post-traumatic psychosis
C. Cognitive dysfunction
D. Alzheimer's disease

Amnestic Syndrome

16. Anterograde amnesia is seen in: *(AIIMS Nov 2010)*
A. Head injury
B. Stroke
C. Spinal cord injury (traumatic paraplegia)
D. Alzheimer's disease

17. Cause of organic amnestic syndrome include(s): *(PGI May 2013)*
A. Multiple sclerosis
B. Hypoglycemia
C. Hyperglycemia
D. Hypoxia
E. Hypercapnia

18. Not diagnostic/defining criteria for amnestic disorder: *(PGI Nov 2009)*
A. Visual hallucination
B. Transient delusion
C. Impaired concentration/attention
D. Good recall of recent events
E. Ability to form new memories

19. All are true *except*: *(PGI Feb 2008)*
A. Procedural learning is from past experiences
B. Implicit learning is procedural skill acquirement
C. Amnestic syndromes lose semantic memory
D. Implicit memory is declarative
E. Anterograde amnesia affects long-term memory more in amnestic syndrome

Dementia

20. Delirium and dementia can be differentiated by? *(DNB June 2010)*
A. Loss of memory
B. Apraxia
C. Delusion
D. Altered sensorium

21. Most common cause of dementia is: *(DNB NEET 2014-15)*
A. Alzheimer's disease
B. Vascular dementia
C. Wilson's disease
D. Pick's disease

22. True about dementia is all *except*: *(AI 1994)*
A. Often irreversible
B. Hallucinations are not common
C. Clouding of consciousness is common
D. Nootropics have limited role

23. Catastrophic reaction is a feature of: *(MH 2011)*
A. Dementia
B. Delirium
C. Schizophrenia
D. Anxiety

24. All are causes of subcortical dementia *except*: *(AIIMS May 2009)*
A. Alzheimer's disease
B. Parkinson's disease
C. Supranuclear palsy
D. HIV associated dementia

25. Dementia is/are present in all *except*:
A. Alzheimer's disease B. Pick's disease
C. Lewy body D. Binswanger's disease
E. Gansers syndrome

26. Reversible causes of dementia: *(PGI June 2004)*
A. Hypothyroidism
B. Alzheimer's disease
C. Vitamin B12 deficiency
D. Vitamin A deficiency

27. Treatable causes of dementia are: *(PGI 2001)*
A. Alzheimer's disease
B. Hypothyroidism
C. Multi-infarct dementia
D. subdural hematoma (SDH)
E. Hydrocephalus

28. Vascular dementia is characterized by: *(PGI 2003)*
A. Disorientation B. Memory deficit
C. Emotional lability D. Visual hallucination
E. Personality deterioration

29. A 65-year-old male is brought to the outpatient clinic with one year illness characterized by marked forgetfulness, visual hallucinations, suspiciousness, personality decline, poor self care and progressive deterioration in his condition. His Mini Mental Status Examination (MMSE) score is 21. His most likely diagnosis is: *(AIIMS Nov 2002)*
A. Dementia B. Schizophrenia
C. Mania D. Depression

30. Which of the following neurotransmitters are decreased in Alzheimer's disease? *(DNB NEET 2014-15)*
A. Acetylcholine B. Norepinephrine
C. Corticotropin D. All of the above

31. Protein involved in Alzheimer's disease: *(NIMHANS 2001, DNB 2002)*
A. APOE4 gene B. Presenilin-1
C. Amyloid protein D. All of the above

32. Following are predispositions to Alzheimer's disease *except*: *(DNB 1996, AI 1999)*
A. Down's syndrome
B. Head trauma
C. Smoking
D. Low education group

33. Dementia of Alzheimer's type is not associated with one of the following: *(AIIMS Nov 2005)*
A. Depressive symptoms
B. Delusions
C. Apraxia and aphasia
D. Cerebral infarcts

34. All the following are features of Alzheimer's disease *except*: *(DNB 1994, WB 2002)*
A. Cerebellar atrophy
B. Common in 5th and 6th decade
C. Atrophied gyri widened sulci
D. Progressive dementia

35. In Alzheimer's disease (AD) which of the following is not seen: *(AIIMS Nov 2011)*
A. Aphasia B. Acalculia
C. Agnosia D. Apraxia

36. False regarding Alzheimer's disease (AD) is:
A. Number of senile neural plaques correlates (increases) with age
B. Presence of tau protein suggest neurodegeneration
C. Number of neurofibrillary tangles is associated with the severity of dementia
D. Extracellular inclusions (lesions) can occur in the absence of intracellular inclusions to make pathological diagnosis of AD

37. Area of brain resistant to neurofibrillary tangles in Alzheimer's disease: *(AI 2012)*
A. Visual association area
B. Entorhinal cortex
C. Lateral geniculate body
D. Cuneal gyrus area VI/temporal lobe

38. Regarding Alzheimer's disease which is/are not true: *(PGI Dec 2008, June 2009) (AIIMS Nov 2011)*
A. Initial loss of long-term memory
B. Delayed loss of short-term memory
C. Step ladder pattern
D. Cognitive impairment
E. Judgment impaired

39. All are true regarding Alzheimer's disease *except*:
A. Gradually progressive *(PGI Feb 2008)*

B. Abrupt onset and acute exacerbations
C. Episodic memory can be affected
D. Frontotemporal disorder
E. Ubiquitin Lewy bodies

40. Frontotemporal dementias include all *except*: *(DNB 2003, UP 2007)*
A. Pick's disease
B. Nonfluent aphasia
C. Semantic dementia
D. Alzheimer's disease

41. A 70-year-old man presents with h/o prosopagnosia, loss of memory, 3rd person hallucinations since 1 month. On examination deep tendon reflexes are increased, mini-mental examination score is 20/30. What is most likely diagnosis? *(AIIMS 2001)*
A. Dissociated dementia
B. Schizophrenia
C. Alzheimer's disease
D. Psychotic disorder

42. Not a feature of Alzheimer's disease: *(PGI May 2013)*
A. Hirano bodies
B. Amyloid angiopathy
C. Granulovacuolar degeneration of neurons
D. Senile plaque
E. Cerebellar atrophy

43. Rivastigmine and Donepezil are drugs used predominantly in the management of: *(AI 2006)*
A. Depression
B. Dissociation
C. Delusion
D. Dementia

44. True regarding FTD are all *except*: *(AIIMS 2011, NEET 2013)*
A. Semantic dementia
B. Nonfluent aphasia
C. Apathetic, disinhibited personality
D. Rapid onset static course

45. All are true regarding frontotemporal dementia: *(AIIMS Nov 2012)*
A. Stereotypic behavior
B. Insight present
C. Age less than 65 years
D. Affective symptoms

46. The following are the psychiatric sequelae after stroke inelderly: *(PGI 2003)*
A. Depression
B. Post-traumatic stress disorder
C. Dementia
D. Anxiety

47. The psychiatric disorder most commonly associated with myxedema:
A. Depression
B. Mania
C. Phobia
D. Psychosis

48. Myxedema madness includes: *(DNB NEET 2014-15)*
A. Auditory hallucinations and paranoia
B. Visual hallucinations and depression
C. Auditory hallucinations and depression
D. Paranoia and depression

ANSWERS

1. C. If a patient presents with prominent visual hallucinations, organic mental disorders (organic brain lesions) should always be looked for.
2. D. Perseveration of speech is suggestive of organic mental disorders. Few books are giving the answer as delusion which is completely wrong.
3. B. Mini mental status examination is used to evaluate cognitive functions in illnesses like dementia and delirium.
4. C, D.
   As organic mental disorders commonly have disturbances of cognition, they are also known as cognitive disorders.
5. B. Presence of disturbances of consciousness and disorientation is suggestive of organic mental disorders.
6. B. The complex delusions are frequently seen in psychotic disorder. In organic mental disorders, the delusions are usually transient and fragmented. Presence of complex delusions in organic mental disorder is very rare. The lack of insight is a feature of both whereas confusion and impairment of consciousness is seen in organic mental disorders.
7. A, E.
   Third person hallucinations are quite suggestive of schizophrenia. Also systematized delusions (elaborate delusions) are much more likely in schizophrenia. Please remember that schizophrenia is not a disorder of personalty and hence there is no "split personality" in schizophrenia. Visual hallucinations and altered sensorium are more suggestive of organic mental disorders

although visual hallucinations can also be seen in schizophrenia.

8. B. In older age (>60 years) dementia is the most common psychiatric disorder followed by depression.
9. D. Please remember that the hallmark symptom of delirium is clouding of consciousness, which is associated with impairment of global cognitive functions, most importantly attention.
10. A.
11. A, B, C, D.
12. B. Delirium presents with clouding of consciousness whereas in schizophrenia consciousness is intact. The mood changes and tangential thinking cannot be used for differentiation.
13. B.
14. B. History of a medical disorder (pneumonia) followed by disturbances in consciousness (altered sensorium), disorientation (failure to recognize doctor and staff and thinking that he is in jail) and hallucinations (scorpions attacking) is suggestive of delirium.
15. C. The history of cardiac surgery 2 days prior followed by behavioral changes is suggestive of delirium. The question here is stressing on "disturbances of memory" which can be seen in delirium, however are usually restricted to short- term memory loss. The other important features such as clouding of consciousness and attention impairment has not been provided. Nonetheless, the most likely diagnosis appears to be delirium. As delirium has prominent cognitive dysfunction, that is the correct answer. Alzheimer disease does not have such sudden onset.
16. B. Anterograde amnesia is seen in stroke.
17. A, B,D.
    See text.
18. A, B, C, D, E.
    None of the options are included in diagnostic criterion for amnestic disorder. Amnestic syndrome is characterized by inability to form new memories (anterograde amnesia) and the inability to recall previously remembered knowledge (retrograde amnesia). Short-term and recent memory are usually impaired with preservation of remote and immediate memory.
19. C, D, E.
    Explicit memory (declarative memory) is the memory which is associated with awareness, whereas implicit memory (nondeclarative memory) doesn't involve awareness. For example, if you have to chose the correct option for a particular MCQ, you first try to remember the correct answer, i.e you try to bring the memory associated with MCQ into awareness , hence its an example of explicit memory. However, when you drive a car, you don't really try to remember everything every time. Changing clutches, pressing breaks and accelerator happens automatically and you don't have to remember anything, its an example of implicit memory.

    Explicit memory is further divided into ***episodic memory*** for events (e.g. the memory of your first day in medical college) and ***semantic memory*** for facts (e.g. memory for the most common , least common type of questions). Procedural memory (for procedures like driving) is a type of implicit memory. Now, looking at options. Option A is true, procedural learning depends on past experience. Initially we have to remember every detail about how to use clutch, break and accelerator however with repeated experience it becomes implicit. Option B is also correct as procedure learning is a type of implicit memory. Option C is wrong, in amnestic syndrome, episodic memory is lost more and not the semantic memory. Option D is wrong as implicit memory is nondeclarative. Option E is also wrong, in amnestic syndrome short-term and recent memory are more affected and not the long-term memory.
20. D. Please remember that the hallmark of delirium is disturbance of consciousness (altered sensorium) whereas in dementia, there is no disturbance of consciousness.
21. A.
22. C. There is no disturbance of consciousness in dementia. It is often irreversible. The hallucinations can be present but are not common. Nootropics (or cognitive enhancers) have very limited role in the management of dementia.
23. A. *See* text.
24. A. Alzheimer's disease is a cortical dementia.
25. E. Ganser's syndrome is a type of dissociative disorder. The other options are examples of dementia.
26. A, C.

27. B, D, E.
    Perhaps the use of word "treatable" is inappropriate here since all the types of dementia can be "treated". The examiner most likely wants to ask the types which can be "reversed" or "cured".
28. A, B, C, D.
    Vascular dementia presents with memory loss, mood changes (depression, irritability, emotional lability), delusions and hallucinations, confusion and disorientation.
29. A. Old age with history suggestive of a progressive impairment in memory, presence of behavioral and psychological symptoms (hallucinations, suspiciousness), poor self care and personality decline and a MMSE score <24, are all suggestive of dementia.
30. A.
31. D.
32. C. Smoking is considered to be one of the protective factors in Alzheimer's disease however this finding has been inconsistent across the studies.
33. D. Cerebral infarcts are a feature of vascular dementia and not dementia of Alzheimer's type (Alzheimer's disease).
34. A. In Alzheimer's , the disease process usually spares cerebellum. Especially neurofibrillary tangles are never seen in cerebellum.
35. B. The best answer here is B. In reality, all four options given here are seen in Alzheimer's however, the DSM criterion for Alzheimer's disease does not include acalculia as a symptom, while other three, aphasia, apraxia and agnosia have been included.
36. D. Please remember that the neuropathological diagnosis of Alzheimer's disease requires extensive presence of both senile plaques (extracellular deposits) and neurofibrillary tangles (intracellular inclusions).
37. C.
38. A, B, C.
    Short-term memory is lost first, long-term memory gets lost only in the later stages of illness. Step ladder pattern is typical of vascular dementia.
39. B, D, E.
    Alzheimer's has an insidious onset and gradual progression. Later in the course of disease episodic memory does get disturbed. Alzheimer's disease primarily involves parietal and temporal lobe.
40. D.
41. C. The presence of loss of memory, prosopagnosia (difficulty in identifying face) in a 70-year-old man is quite suggestive of Alzheimer's disease. Third person auditory hallucinations are usually seen in schizophrenia, however they can be present in Alzheimer's disease too. Further on examination, deep tendon reflexes are increased, which again can be seen in late stages of Alzheimer's disease. Finally MMSE score below 24 seals the diagnosis.
42. E. *See* text.
43. D.
44. D. The frontotemporal dementias have a progressive course and not static course.
45. B. Insight is usually lost.
46. A, C, D.
    The psychiatric sequelae of stroke includes dementia, depression, mania, apathy, psychosis, emotional instability.
47. A. The most common psychiatric disorder associated with hypothyroidism is cognitive slowing followed by depression.
48. A. Myxedematous madness has been described in a small number of patients with hypothyroidism. The characteristic symptoms include auditory hallucinations and paranoia (persecutory ideas).

Chapter

7 Personality Disorders

Personality is defined as the dynamic organization within the individual that determines his/her unique adjustment to his/her environment. The personality can be described under five broad dimensions. These five dimensions, also called **personality traits**[Q] can be remembered with the pneumonic, OCEAN.

1. ***Openness to experience***: It reflects the curiosity, **novelty seeking**[Q] and desire to have new experiences. Individuals with high openness to experience may indulge in activities such as skydiving, bungee jumping, gambling, etc.
2. ***Conscientiousness***: It reflects the tendency to be organized, disciplined and dutiful.
3. ***Extraversion***: It reflects the sociability, talkativeness and preference for group activities over solitary activities.
4. ***Agreeableness***: It reflects compassion and cooperation for others and a trusting and helpful nature.
5. ***Neuroticism***: It reflects the tendency to experience unpleasant emotions easily. It also refers to the degree of emotional stability.

If the personality of an individual deviates from social norms and is a cause of unhappiness and impairment, the individual is diagnosed with a personality disorder.

Personality disorder is defined as presence of abnormal behavior and subjective experiences which causes significant impairment. The prevalence of personality disorder is around 10–20% in the general population. The onset is in **adolescence or early adulthood**[Q], the symptoms remain stable throughout the adult life and **maturing**[Q] occurs by around **40 years**. Maturing means the resolution of abnormal patterns of behavior. The personality disorder are **"ego syntonic"**[Q] (**agreeable to self**). In other words, the individual with a personality disorder doesn't find anything wrong with himself and hence is often unwilling to take any treatment. DSM-5 has classified the personality disorders into three clusters.

Cluster A Personality Disorders

The following personality disorders are included in cluster A:

A. ***Paranoid personality disorder***: The characteristic feature is **excessive suspiciousness** and distrust of others. These patients may be **excessively sensitive**[Q] and may be quick to react angrily. They give **excessive importance to themselves** and believe in conspiracy theories. Psychotherapy is the treatment of choice. Medications like benzodiazepines and antipsychotics may be used for agitation and paranoia (excessive suspiciousness).

B. ***Schizoid personality disorder***: These patients are **detached**[Q] from social relationships and **prefer solitary activities**.They are **emotionally cold**[Q] and are indifferent to praise or criticism. They appear self absorbed and lost in day dreams and may be preoccupied with fantasies. Since they are uncomfortable with human interaction, they have little interest in sexual activities. The management revolves around psychotherapy. The medications which are occasionally used include antipsychotics, antidepressants and benzodiazepines.

C. ***Schizotypal personality disorder***: These patients have disturbances of thinking and communication. They frequently exhibit **odd beliefs or magical thinking**[Q] (e.g. superstitiousness, belief in telepathy or "sixth sense"). Their inner world may be like that of a child,

filled with fears and fantasies. They may have strange ways of communication making it difficult to understand. They may also report illusions and other perceptual disturbances. They usually don't have any close relationships and appear "odd and eccentric" to others. When in severe stress, they may decompensate and have psychotic symptoms, but these are usually brief. The management revolves around psychotherapy. The medications which are occasionally used include antipsychotics, antidepressants and benzodiazepines.

> In ICD-10, schizotypal disorder is not considered as a personality disorder, instead it is classified as a psychotic disorder along with schizophrenia.

The "cluster A" personality disorders (especially schizotypal personality disorder) are considered to be on a "schizophrenia continuum" which means that they lie somewhere in between the "normal" and "schizophrenia".

Cluster B Personality Disorders

The following personality disorders are included in cluster B:

A. ***Histrionic personality disorder***: These patients are excitable and overtly emotional and behave in a dramatic and extroverted way. They want to be the **center of attention** and exaggerate everything, making it sound more important than it really is. They tend to behave in a sexually seductive manner and use physical appearance to draw attention towards self. Management usually involves psychotherapy. Medications like antidepressants are occasionally useful.

B. ***Narcissistic personality disorder***: These patients have a heightened sense of **self importance**[Q]. They believe that they are special and very talented. They are preoccupied with fantasies of unlimited success and power. They want to be admired by others. If condemned, they may become very angry or they may show complete indifference to criticism. They have a fragile self esteem and are susceptible to development of depression, when faced with rejection. Management usually involves psychotherapy. Medications like antidepressants are occasionally useful.

C. ***Antisocial personality disorder (dissocial personality disorder)***: These patients don't have regard for rights of others and frequently violate them. They frequently get involved in **unlawful behaviors** such as theft, lying, truancy and conning. They have a lack of remorse or guilt for their actions. Substance use disorders are frequently present in these patients. Treatment usually is psychotherapy. Medications like carbamazepine, beta blockers are occasionally used.

D. ***Borderline personality disorder***: These patients are almost always in a state of crisis. They have significant **mood swings**. They may start feeling angry, anxious or frustrated without any reason. Their interpersonal relationships are intense and tumultuous. They swing from being excessively dependent to being hostile to persons close to them. Hence, they have a history of **unstable relationships**[Q]. Another characteristic feature is the repetitive **self destructive acts**[Q] such as slashing of wrists, or overdosage of medications. The patients indulge in these behaviors to elicit help from others, to express the anger or just to numb themselves to the overwhelming painful feelings they have. These patients are also **impulsive**[Q] in areas such as spending, sex and substance use. Finally, these patient excessively use the defense mechanism of **splitting** (wherein they consider each person to be either "all good" or "all bad"). Management involves psychotherapy. **"Dialectical behavior therapy"** is a therapy which has been designed for treatment of borderline personality disorder. Medications used include antipsychotics, antidepressant and mood stabilizers like carbamazepine. In ICD-10, the borderline personality disorder has been described as a subtype of a broader diagnosis of "emotionally unstable personality disorder".

Cluster C Personality Disorders

The following personality disorders are included in cluster C:

A. ***Avoidant personality disorder***: These patients are excessively **sensitive to rejection**. They are afraid that they would be criticized or rejected in social situations. Hence, they tend to remain socially withdrawn. These persons are usually unwilling to enter into a relationship unless they are given a strong guarantee of uncritical acceptance. The ICD-10, uses the diagnosis of anxious personality disorder for such patients. Management mostly involves psychotherapy. Beta blockers and selective serotonin reuptake inhibitors (SSRIs) are also useful.

B. ***Dependent personality disorder***: These patients are **dependent** on others for everyday decisions. All the major decisions in their lives are taken by someone else. They ask for excessive amount of advice and reassurance from others. They also have difficulty expressing disagreement with others because of fear of loss of support. They get very uncomfortable and helpless when alone and fear that they wont be able to take care of themselves. Management usually involves psychotherapy. Benzodiazepines and SSRIs can be used for symptomatic relief.

C. ***Obsessive compulsive personality disorder***: These patients are preoccupied with rules and regulations. They give excessive importance to details and show **perfectionism** that interferes with task completion (since they want everything to be perfect, it often results in significant delays). They are **inflexible** and insist that others agree to their demands. They are excessively devoted to work and may not have any time for leisure activities. They are formal and serious and often lack a sense of humor. The ICD-10 , used the diagnosis of **"anankastic personality disorder"** for these patients. Management usually involves psychotherapy.

Type A and B Personality

Another way of classifying personality is what is known as Type A and Type B personality. **Type A personality** is characterized by competitiveness, time urgency, hostility and anger. The people with Type A personality are ambitious, impatient and hard working workaholics. Many studies have suggested that Type A personality (especially the hostility and anger traits) is a risk factor for **coronary heart disease**[Q].

In comparison individuals with Type B personality are easy going and relaxed, they are not excessively competitive and may focus more on enjoyment and less on winning or losing. Recent studies have suggested a new personality type, **Type D personality**[Q] which is characterized by negative affectivity (a tendency to experience negative emotions) and social inhibition (tendency to inhibit expression of emotions). Individuals with Type D personality are predisposed to development of **coronary heart disease**[Q].

IMPULSE CONTROL DISORDERS

These disorders are characterized by irresistible impulses or temptations to perform a particular act which is harmful to self or others. Impulse is described by patients as a feeling of increasing tension and arousal that leads to performance of a certain behavior. The performance of the behavior gives a sense of relief and also gratification. After some time, however the person feels guilty or remorseful. The following are described as impulse control disorders. All of them are preceded by the irresistible impulses:

1. *Pyromania*: Recurrent and purposeful setting of fires.
2. ***Kleptomania***[Q]: Recurrent stealing of objects which are not needed for personal use or are of no monetary value.
3. *Intermittent explosive disorder*: It is characterized by episodes of aggression resulting in serious assault or destruction of properties.
4. *Pathological gambling*: Recurrent episodes of gambling which causes economic troubles and serious relationship problems.
5. *Trichotillomania*: Recurrent episodes of hair pulling.
6. *Others*: These include, Oniomania or compulsive buying: Recurrent episodes of buying or shopping despite the buying behavior causing significant monetary and socio occupational distress.

QUESTIONS AND ANSWERS

QUESTIONS

1. Which of the following is not a personality trait? *(AIIMS Nov 2009)*

A. Sensation seeking
B. Neuroticism
C. Open to experience
D. Problem solving

2. True about personality disorder: *(PGI June 2007)*

A. Onset in early childhood and adolescence
B. Matures around adulthood
C. Not associated with social norms
D. Direct result of disease or damage

3. Characteristic disorder that appears in late child hood and continues in adulthood: *(DNB NEET 2014-15)*

A. Somatoform disorder
B. Personality disorder
C. Anxiety disorder
D. Mood disorder

4. True about personality disorder: *(PGI 2003)*
A. Typically onset at early childhood and adolescence
B. Mature around at 30-40 years
C. Ego dystonic
D. Dramatic, emotional and erratic behavior in paranoid PD
E. Pervasive and maladaptive behavior

5. True about personality disorder: *(PGI June 2008)*
A. Onset in early childhood and adolescence
B. Matures around adulthood
C. Suspiciousness is seen in paranoid personality disorder
D. Excessive preoccupation with fantasy is seen in schizoid personality disorder

6. Oddities of speech, mannerism, odd clothing with magical thinking is seen in which type of personality disorder: *(DNB 2003, JIPMER-2K)*
A. Schizoid
B. Paranoid
C. Schizotypal
D. Borderline

7. Which personality disorder of DSM-IV is not classified as PD and is placed with schizophrenia in ICD 10? *(WB 1998, DNB 1997)*
A. Schizoid
B. Paranoid
C. Narcissistic
D. Schizotypal

8. Characteristic feature of schizoid personality disorder is: *(AIIMS 1999)*
A. Conversion reaction
B. Not concerned with disease
C. Check details of all things
D. Emotional coldness

9. Which personality disorder can be considered a part of autistic spectrum disorders? *(DNB NEET 2014-15)*
A. Schizoid
B. Schizotypal
C. Borderline
D. All of the above

10. Markedly inappropriate sensitivity, self importance and suspiciousness are clinical features of: *(DNB NEET 2014-15, DNB 2001, TN 1999, AMU 2002)*
A. Antisocial PD
B. Histrionic PD
C. Schizoid PD
D. Paranoid PD

11. Antisocial personality is associated with: *(PGI 1999)*
A. Drug abuse
B. Paranoid schizophrenia
C. Obsessive compulsive disorder
D. None

12. Features of borderline personality are: *(PGI May 2012)*
A. Impulsivity
B. Recurrent suicidal behavior
C. Anger and anxiety
D. Extreme suspiciousness
E. Pattern of unstable and intense interpersonal relationships

13. Cardinal feature of antisocial personality disorder is: *(DNB NEET 2014-15)*
A. Violation of rules of society
B. Attention-seeking behavior
C. Unstable interpersonal relationships
D. Grandiose behavior

14. A 16-year-old girl was brought to psychiatric emergency after she slashed her wrist in an attempt to commit suicide. On enquiry her father revealed that she had made several such attempts of wrist slashing in past, mostly in response to trivial fights in her house. Further she has marked fluctuations in her mood with a pervasive pattern of unstable interpersonal relationships. The most probable diagnosis is: *(AIIMS Nov 2002)*
A. Borderline personality disorder
B. Major depression
C. Histrionic personality disorder
D. Adjustment disorder

15. Patients who are grandiose and require admiration from others, have which type of personality? *(DNB NEET 2014-15)*
A. Narcissistic
B. Histrionic
C. Borderline
D. Antisocial

16. A young lady was admitted with h/o taking overdose of diazepam after broken affair. She has history of slitting her wrist previously. Most likely diagnosis is: *(AIIMS 2000)*
A. Narcissistic PD
B. Dependent PD
C. Borderline PD
D. Histrionic PD

17. A person has the habit of inflicting repeated injuries to self, what is the type of personality? *(PGI June 2004)*

A. Borderline
B. Schizoid
C. Histrionic
D. Narcissistic
E. Depressive

18. Pervasive pattern of instability of interpersonal relationships, self image and affect, with marked impulsivity that begins at early adulthood and present in varieties of context is characteristics of: *(Bihar 2006)*

A. Bipolar disorder
B. Schizoaffective disorder
C. Borderline personality disorder
D. Schizotypal personality disorder

19. A lady has changed multiple boyfriends in last 6 months, she keeps breaking her relationships, and she also has attempted suicide many times. Most likely diagnosis is: *(MP 2006)*

A. Borderline personality disorder
B. Post-traumatic stress
C. Acute depression
D. Acute panic attack

20. A person with shy, anxious avoidant personality comes under which cluster? *(AIIMS May 2015)*

A. Cluster A
B. Cluster B
C. Cluster C
D. Cluster D

21. Obsessive personality disorder is also called: *(DNB NEET 2014-15)*

A. Anankastic personality disorder
B. Dissocial personality disorder
C. Eccentric personality disorder
D. Histrionic personality disorder

22. True about treatment of personality disorder: *(PGI May 2010)*

A. Antipsychotics are used
B. SSRI are used
C. Behavior therapy is used
D. No need for treatment

23. False regarding Type A personality: *(AIIMS Nov 2007)*

A. Hostile
B. Time pressure
C. Competitiveness
D. Mood fluctuations

24. Individual with Type D personality are recently found to be at risk of developing: *(AIIMS Nov 2011)*

A. Coronary artery disease
B. Depression
C. Schizophrenia
D. Mania

Impulse Control Disorder

25. Kleptomania is: *(PGI May 2011, 2007)*

A. Delusional disorder
B. Obsession
C. Impulse disorder
D. Compulsion seclusion
E. Hallucination

26. One of the following is not a compulsive and habit forming disorder: *(KA 1995)*

A. Kleptomania
B. Pyromania
C. Nymphomania
D. Pathological gambling

ANSWERS

1. D. Sensation seeking is a part of "openness to experience". Problem solving is not a personality trait.
2. A,B,C.
   Personality disorders have onset in early childhood and adolescence and maturing occur in adulthood by 30-40 years of age. People with personality disorders tend to have conflicts with the societal norms (e.g. patients with antisocial personality disorders tend to break societal rules and regulations).
3. B.
4. A, B, E.
   Personality disorders are "ego syntonic" and not "ego dystonic". Option D is description of histrionic personality disorder.
5. A, B, C, D.
   See text
6. C. Odd behavior including odd speech, mannerisms and magical thinking is seen in schizotypal personality disorder.
7. D. In ICD-10, schizotypal PD is placed with schizophrenia spectrum and not in personality disorder.
8. D. *See* text.
9. A. The characteristic feature of autistic spectrum disorder (ASD) is impairment in social interaction

and communication. These features are also seen in schizoid personality disorder. There can be significant difficulty differentiating between schizoid PD and milder forms of ASD. It must be remembered that patients with ASD have more severe social impairment and also have stereotypical behaviors and interests.

10. D. *See* text.
11. A. Antisocial PD is frequently associated with substance use disorders.
12. A, B, C, E.
    See text.
13. A. People with antisocial PD characteristically disregards rights of others, don't follow norms of society and indulge in antisocial behaviors.
14. A. This patient has history suggestive of self harming behavior with mood fluctuations and pervasive unstable pattern of interpersonal relationships, all of which are features of borderline PD.
15. A.
16. C. The repetitive episodes of self harming behavior after stressors is suggestive of borderline personality disorder.
17. A.
18. C.
19. A.
20. C.
21. A.
22. A, B, C.
    The mainstay of treatment in personality disorders is psychotherapy. Medications used include SSRIs, antipsychotics and mood stabilizers.
23. D.
24. A.
25. C. Kleptomania is an impulse control disorder in which the patient has recurrent irresistible desire to steal objects, which he/she doesn't need for personal use or for monetary value.
26. C. Nymphomania is the condition of excessive sexual desire in females. It is not an impulse control disorder.

Chapter

8 Eating Disorders

ANOREXIA NERVOSA

Anorexia nervosa is most commonly seen in **adolescent females**. Initially, it was reported to be more common in upper class, however recent data doesn't support that fact. It must be noted that anorexia nervosa is a misnomer since the **appetite of these patients** is **usually normal**[Q] and hence there is no symptom of anorexia in anorexia nervosa.

It is characterized by the following signs and symptoms:

1. Disturbance of body image (patient perceives that she is fat despite being quite thin in reality).
2. Excessive fear of fatness and excessive emphasis on thinness.
3. Restriction of energy intake resulting in a **significantly less weight**[Q] than normal.
4. Medical symptoms secondary to starvation such as **amenorrhea**[Q], lanugo (appearance of neonatal hairs), hypothermia, dependent edema and bradycardia.

The adolescent patients often have **poor sexual development**[Q] whereas the adult patients usually report **low**[Q] **interest** in sexual activities. Patients often exhibit **peculiar behavior**[Q] about food such as hiding food in the house, trying to dispose food in napkins, cutting food into very small pieces and rearranging the food repeatedly around the plate. These patients are preoccupied with the thoughts about food and may spend a large amount of time collecting recipes or cooking food for others.

Patients are usually secretive and deny any symptoms and refuse for treatment.

Subtypes

Anorexia nervosa has the following two subtypes.

1. ***Restricting type***: This type is seen in around 50% of patients and is characterized by highly restricted food intake.
2. ***Binge eating/purging subtype***: It is seen in 25–50% of patients. In this type, patient alternates attempts at rigorous dieting with intermittent binging and purging episodes. The binging involves intake of a large amount of food in a short duration with an associated feeling of lack of self control during binge episode. The purging is a compensatory mechanism wherein patient tries to compensate for excess calories by self induced vomiting, laxative use, diuretic use or emetic use. The repeated vomiting episodes may cause **dental caries**, **parotitis**, and hypokalemic alkalosis.

Treatment

> DSM-5 Update: In DSM-4, amenorrhea was a necessary symptom for diagnosis of anorexia nervosa, however in DSM-5 this criterion has been removed and anorexia nervosa can be diagnosed in the absence of amenorrhea now.

The treatment may include hospitalization to restore patients nutritional status and manage complications like dehydration and electrolyte imbalances. The treatment focusses on a combination of behavioral management (praise for healthy eating habits, restriction of self induce vomiting), individual psychotherapy and family education. Medications such as cyproheptadine, tricyclic antidepressants (TCAs) and selective serotonin reuptake inhibitors (SSRIs) have been tried with varied success.

BULIMIA NERVOSA

Bulimia nervosa is characterized by **episodes of binge eating** combined with **inappropriate ways of preventing weight gain**. Bulimia nervosa is more common than anorexia nervosa, is usually seen in females, and the age of onset is mostly late adolescence. The following are the clinical features:

1. Episodes of binge eating in which large amount of food is usually consumed in a small duration with an associated feeling of lack of self control during binge episode.
2. Compensatory behavior after binge eating to prevent weight gain. These measures usually include purging behaviours like self induced vomiting, laxatives or diuretics abuse, use of emetics and in few patients excessive exercising (hyperglycemia) and dieting.
3. Like patients of anorexia nervosa, the patients with bulimia nervosa too have a morbid fear of gaining weight and give excessive emphasis to thinness.
4. Weight is usually **normal**[Q], and is an important differentiating factor between bulimia nervosa and anorexia nervosa.

The patients with bulimia nervosa usually tend to have features secondary to purging such as **enamel erosion**[Q] and **dental caries**[Q], salivary gland inflammations, **callus on knuckles**[Q] (as knuckles get injured against teeth during episodes of self induced vomiting). The patient may develop hypokalemia and hypochloremic alkalosis and rarely gastric and esophageal tear during forceful vomiting.

Patients have **normal sexual functioning**[Q] and are usually not secretive about their symptoms as p atients with anorexia nervosa.

Treatment

It is usually outpatient and involves psychotherapeutic techniques like cognitive behavioural therapy (first line) and dynamic psychotherapy. The medications mostly used are antidepressants like selective serotonin reuptake inhibitors.

QUESTIONS AND ANSWERS

QUESTIONS

1. Which of the following is not a common feature of anorexia nervosa? *(DNB 2007, AI 2006)*
A. Binge eating
B. Amenorrhea
C. Self perception of being fat
D. Under weight

2. Anorexia nervosa can be differentiated from bulimia by: *(AIIMS NOV 2008)*
A. Intense fear of weight gain
B. Disturbance of body image
C. Adolescent age
D. Peculiar patterns of food handling

3. Which of the following is not true about bulimia nervosa? *(UPSC 2009)*
A. Recurrent bouts of binge eating
B. Lack of self control over eating during binge
C. Self induced vomiting or dieting after binge
D. Weight gain

4. With regard to anorexia nervosa all of the following are true *except:* *(DNB NEET 14-15, DNB 03, Kerala 2K)*
A. Phobic avoidance of normal weight
B. Over perception of body image
C. Self induced vomiting
D. Menorrhagia
E. Excessive exercise

5. A young lady presents with h/o repeated episodes of over eating (binge) followed by purging using laxatives, she is probably suffering from: *(AI 2002, UP 2004, AIIMS 10,07, DNB 2009)*
A. Bulimia nervosa
B. Schizophrenia
C. Anorexia nervosa
D. Benign eating disorder

6. Which of the following is not true about bulimia nervosa? *(UPSC-1 08)*
A. Invariable weight loss with endocrine disorder

B. Occurrence of both binge eating and inappropriate compensatory behaviors at least twice weekly on an average for 3 months
C. Recurrent episodes of binge eating
D. Recurrent self induced vomiting

7. False regarding anorexia nervosa:
(DNB 2008, AI 2006)
A. Evident psychosis
B. Vigor exceeding physical well-being
C. Weight loss
D. Decreased appetite

8. False regarding anorexia nervosa:
(DNB NEET 2014-15)
A. Psychiatric symptoms such as depression may be associated
B. Excessive exercising can be a feature
C. Weight loss is a feature
D. Decreased appetite is a feature

9. Following are true about bulimia nervosa *except:*
(DNB NEET 2014-15)
A. Uncontrolled eating episodes
B. Overweight individuals
C. Depressive symptoms are present
D. Patients are sexually active

10. Not true about bulimia nervosa is:
(DNB NEET 2014-15)
A. Onset is in late adolescence
B. Dental caries/tooth decay is a finding
C. Amenorrhea is a common finding
D. Normal weight is usually seen

ANSWERS

1. A. All the four options are features of anorexia nervosa. However, if one has to chose, the best answer would be binge eating. Though binge eating is seen in almost 50% of patients with anorexia nervosa, however its not a core symptom of anorexia nervosa.
2. D. Unlike patients with bulimia, patients with anorexia remain preoccupied with food and show peculiar behavior like hiding food in the house, trying to dispose food in napkins, cutting food into very small pieces and rearranging the food repeatedly around the plate.
3. D. The patients with bulimia nervosa usually have normal weight.
4. D. Amenorrhea and not menorrhagia is the menstrual disturbance seen in anorexia.
5. A.
6. A. Weight loss and endocrine abnormality are seen in anorexia not bulimia nervosa.
7. A. There are no psychotic symptoms in anorexia nervosa.
8. D. The appetite of patients with anorexia is normal and as such there is no anorexia in anorexia nervosa.
9. B.
10. C. Presence of amenorrhea is a differentiating feature between anorexia and bulimia. It is seen only in patients with anorexia.

Chapter

9 Sleep Disorders

ELECTROENCEPHALOGRAM

It is the recording of electrical activity of the brain. It is recorded by placing electrodes on the scalp and recording the potential difference between various electrodes. A normal EEG has following types of rhythm.

Stages of Sleep

Sleep can be divided into two stages:

A. Nonrapid eye movement sleep (NREM) or slow wave sleep and
B. Rapid eye movement (REM) sleep or paradoxical sleep.

A. ***Nonrapid eye movement sleep***: It is further divided into following four stages:
   - ***Stage 1, NREM***: It is the first stage and the sleep is light (person can be easily aroused). The EEG shows, **loss of alpha waves** (which predominate when person has eyes closed but is still awake) and **predominance of theta waves**.
   - ***Stage 2, NREM***: It is the stage with **maximum duration**[Q]. It is characterized by two typical findings on electroencephalogram:
     a. ***Sleep spindles***[Q]: These are bursts of regular waves (frequency of 13–15 Hz, 50 microvolt) and
     b. ***K-complexes***[Q]: These are high voltage spikes which are seen intermittently.
   - ***Stage 3, NREM***: The sleep deepens and there is appearance of delta waves.
   - ***Stage 4, NREM***: This is deep sleep and is characterized by predominance of delta waves on EEG.

During the NREM sleep, there is pulsatile release of **gonadotropins** and **growth hormones**. Further, the blood pressure, heart rate and respiratory rate also decreases.

B. ***Rapid eye movement sleep***: It follows the NREM sleep. It is characterized by the following:
   - The EEG shows increased activity similar to awake state **(beta activity)** along with return of **alpha activity**
   - Presence of **rapid eye movements**
   - There is generalized **loss of muscle tone**.

Table 1: EEG rhythms.

EEG rhythm	*Frequency (Hz)*	*Amplitude (microvolt)*	*Salient points*	*Region*
Alpha (α)	8–12	50–100	Seen when individual is awake, at rest, eyes closed and mind wandering	Present maximally in occipital and parieto-occipital area
Beta (β)	14–30	5–10	Normal awake pattern, when attention is focussed beta waves appear	Predominantly in frontal area
Theta (θ)	4–7	10	Transition from wakefulness to sleep, early sleep	Parietal region and temporal region (hippocampus)
Delta (δ)	1–4	20–200	Deep sleep	

- **Increased rate**[Q] of metabolism in brain
- **Penile erection**[Q], autonomic hyperactivity (increase in pulse rate, respiratory rate and blood pressure)
- **Dreams**[Q], which can be recalled are seen during REM sleep.

Ponto geniculo occipital spikes[Q] (large phasic potentials that originate from cholinergic neurons in pons and pass rapidly to lateral geniculate body and then to occipital cortex) are a characteristic feature.

REM sleep is called **paradoxical sleep**[Q] because though the EEG is quite similar to awake state, its quite difficult to awaken the patient.

In a 8 hour sleep, maximum time (around 6-6.5 hours) is spent in NREM sleep and the rest (around 1.5 hours) in REM sleep. Most of the stage 4, NREM occurs in the first one-third of the night whereas most of REM sleep occurs in the last one-third of the night. The REM sleep occurs regularly after every 90-100 minutes with a total of around 4-5 REM sleeps in the entire night.

SLEEP DISORDERS

The various sleep disorders can be divided into two categories:

1. Dyssomnias
2. Parasomnias

Dyssomnias

These disorders are characterized by abnormality in the duration or quality of sleep. They include:

A. *Insomnia*: Primary Insomnia is diagnosed when no cause can be found for decreased sleep and may present with difficulty in initiation of sleep, difficulty in maintenance of sleep (frequent awakening during night or early morning awakening) or nonrestorative sleep (not feeling refreshed in the morning due to poor quality of sleep). The management usually involves use of benzodiazepines, zolpidem and other hypnotics.

Few other disorders which can present with insomnia include:

- *Periodic limb movement disorder*: It is characterized by sudden contraction of muscle groups (usually leg) while sleeping. This results in partial or complete awakening, repeatedly in the night. The patient is usually not aware of these sudden contractions, however the bed partner frequently gets disturbed. The patient may report non restorative sleep and day time sleepiness. The treatment usually involves benzodiazepines.
- *Restless leg syndrome (Ekbom syndrome)*: It is characterized by uncomfortable sensation in legs (such as insect crawling on the skin) which get relieved by **moving** the leg or **walking around**. This can cause difficulty in initiation of sleep as patient keeps on moving the leg. The only approved drug for treatment is **ropinirole**[Q] (a dopamine agonist).

B. *Hypersomnia*: Primary hypersomnia is diagnosed when no cause can be found for excessive sleepiness which can present with either prolonged sleep episodes or excessive day time sleep episodes.

Few other disorders which can present with hypersomnia include:

- *Narcolepsy*: This disorder is characterized by the following symptoms:
  a. *Sleep attacks*: The patient has irresistible urge for sleep which can occur at any time during the day.
  b. ***Cataplexy***[Q]: It is sudden loss of muscle tone, due to which patient can even have a fall.
  c. ***Hypnagogic hallucinations***[Q]: These are the hallucinations, which occur while going to sleep. Patient may also have **hypnopompic hallucinations**[Q] (hallucinations while getting up from sleep).
  d. *Sleep paralysis*: It usually occurs when the patient gets up in the morning. Though he has woken up, he is not able to move his body.

The hallmark of narcolepsy is **reduced latency of REM sleep**[Q]. Normally, it takes around 90 minutes to reach REM sleep (after crossing all the stages of NREM sleep) however in patients with narcolepsy, patient reaches REM sleep much earlier.

The management includes a regimen of forced naps at regular time. The medications used are **modafinil** and other stimulants like amphetamines.

- *Kleine-Levin syndrome*: This is a rare disorder which is characterized by episodes of **hypersomnia**[Q], hyperphagia and **hyper sexuality**[Q] (increased sexual activity). In between the episodes patient is essentially asymptomatic.

Parasomnias

These disorders are characterized by dysfunctional events associated with the sleep. These include:

A. *Stage 4, NREM sleep disorders*: These disorders occur during stage 4, NREM (also stage 3, NREM). Since most of the stage 4, NREM is present in first third of the sleep, these disorders are also seen in the same period. Also, the patient is not able to recall the events in the morning. These disorders are usually seen in children and include:

- *Night terror or sleep terror (**pavor nocturnus**[Q])*: The patient suddenly gets up screaming and has symptoms of intense anxiety such as tachycardia and sweating. The patient is not able to recall any dream or reasons for feeling scared.
- *Sleep walking (**somnambulism**[Q])*: The patients may carry out a range of activities for which he doesn't have any memory later on. It may include leaving the bed and walking about and also activities like dressing, moving around or even driving.
- *Sleep related enuresis*: The enuresis which is defined as voiding of urine at inappropriate places, is nocturnal in around 80% of cases. The most common cause of bed wetting are psychosocial such as sibling rivalry. The treatment of choice is **bed alarms**[Q], which start ringing, as soon as child passes urine. The medications which can be used include tricyclic antidepressants such as **imipramine**[Q], although their use is associated with severe side effects. Intranasal **desmopressin**[Q] is a better alternative.
- *Bruxism (**teeth grinding**[Q])*: The patient grinds his teeth making loud sounds and there may be damage to the enamel of teeth.
- *Sleep talking (somniloquy)*: Patient talks during stage 3 and 4, NREM and is unable to recall the same in the morning.

In most cases these disorders do not require any treatment and the parents must be reassured. In some cases, **benzodiazepines**[Q] are prescribed. As benzodiazepines decrease the duration of stage 4, NREM, they also decrease these episodes.

B. *Other sleep disorders*:

- *Nightmare*: It occurs during REM sleep, wherein patient has a bad dream and gets up scared and has behavioral signs of anxiety such as tachycardia and hypertension. In contrast to night terror, in nightmare, the patient is able to recall the dream. Agents that reduce duration of sleep, such as tricyclic antidepressants can be used for treatment.

QUESTIONS AND ANSWERS

QUESTIONS

1. Maximum duration of time spent is in which of the following NREM stage? *(NEET/DNB)*

A. I B. II
C. III D. IV

2. A middle aged man complains of lack of sleep during the night time. The duration of the time he is truly asleep or awake can be ascertained by which of the following? *(AIIMS Nov 2012)*

A. Barograph B. Kymograph
C. Actigraphy D. Plethysmography

3. Not a feature of paradoxical sleep is: *(PGI 1999)*

A. Decreased muscle tone
B. Rapid eye movements
C. Brain shows increased metabolism
D. EEG shows decreased activity

4. Slow wave in hippocampal area is: *(MP 00)*

A. Delta B. Theta
C. Beta D. Alpha

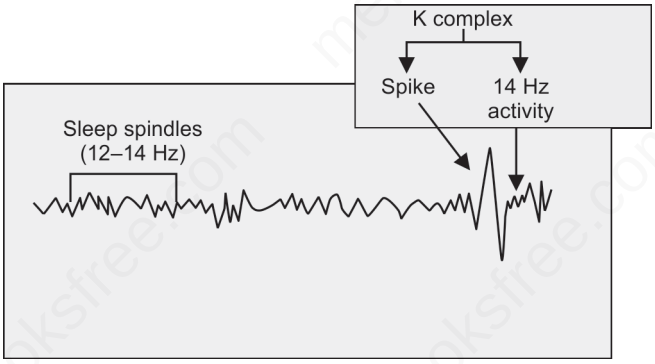
5. Alpha-rhythm is seen in: *(PGI 1997)*

A. Sleep with eyes closed with mind wandering
B. Mental activity
C. Awake with eyes open
D. REM sleep

6. Pontogeniculo occipital spike is characteristic of which of the following sleep stage? *(DNB NEET 2014-15)*

A. Stage 1 NREM B. Stage 2 NREM
C. Stage 3 NREM D. REM

7. The EEG recorded shown below is normally recordable during which stage of sleep: *(AI 2003)*



A. Stage I
B. Stage II
C. Stage III
D. Stage IV

8. What are the EEG waves recorded for parieto occipital region with subject awake and eyes closed? *(Kerala 1997)*

A. Alpha waves
B. Beta waves
C. Delta waves
D. Theta waves

9. Which one of the following phenomenon is closely associated with slow wave sleep? *(AIIMS Nov 2004)*

A. Dreaming
B. Sleep walking
C. Atonia
D. Irregular heart rate

10. Not true about nocturnal penile tumescence is:

A. Totals about 100 min/night *(AIIMS 1995)*
B. Normal phenomenon
C. Occurs in NREM sleep
D. Can be used to distinguish between psychological or organic impotence

11. Which of the following conditions are seen during NREM sleep? *(DNB NEET 2014-15)*

A. Teeth grinding
B. Night mares
C. Narcolepsy
D. Sleep paralysis

12. Pavor nocturnus is: *(APPG 1997)*

A. Sleep terror
B. Sleep apnea
C. Sleep bruxism
D. Somnambulism

13. Antidepressant drug used in nocturnal enuresis is: *(AI 2011)*

A. Imipramine
B. Fluoxetine
C. Trazodone
D. Sertraline

14. Drug of choice for night terrors: *(PGI 1998)*

A. Meprobamate
B. Tricyclic antidepressant
C. Clonazepam
D. Diazepam

15. Feature of narcolepsy include (s) all *except*: *(PGI May 2013)*

A. Disorder of REM sleep regulation
B. Disorder of NREM sleep regulation
C. Hypnagogic hallucination
D. Hypnopompic hallucinations
E. Cataplexy

16. Not true about narcolepsy: *(PGI Dec 2006)*

A. Sudden sleep
B. Long duration (>3 hrs) of sleep
C. Cataplexy
D. Presents in IInd decade

17. Modafinil is approved by FDA for treatment of all *except*: *(DNB 2006, AI 2009)*

A. Obstructive sleep apnea syndrome (OSAS)
B. Shift work syndrome (SWS)
C. Narcolepsy
D. Lethargy in depression

18. Following is true about ropinirole: *(DNB NEET 2014-15)*

A. Selective D2/3 receptor agonist
B. It is used in restless leg syndrome
C. Both A and B
D. None of the above

19. Regarding, Kleine-Levin syndrome which of the following is not true: *(DNB NEET 2014-15)*

A. Hypersomnia
B. Hyposexulity
C. Spontaneous resolution
D. Also called sleeping beauty syndrome

ANSWERS

1. B.
2. C. Actigraphy is the procedure which is used for studying the sleep patterns. It usually involves wearing a small sensor on the wrist, which detects the movements. However, the gold standard technique for studying sleep disorders is polysomnography.

3. D. In paradoxical sleep or REM sleep, the EEG shows increased activity, similar to awake state.
4. B.
5. B, D.
   Alpha rhythm is seen when a person is awake with eyes closed and his mind is wandering (having mental activity) and not when a person is sleeping with eyes closed. Also, alpha rhythm is seen in REM sleep.
6. D. *See* text.
7. B. The sleep spindles and K complexes are seen in stage II, NREM.
8. A.
9. B. Somnambulism is usually seen in NREM III and IV (slow wave sleep).
10. C. Nocturnal penile erections are a feature of REM sleep.
11. A. Teeth grinding or bruxism is seen in NREM III and IV.
12. A.
13. A. Remember its not the drug of choice. Desmopressin is the drug of choice and bed alarms are the treatment of choice.
14. C,D.
    Benzodiazepines can be used in night terrors though usually no treatment is required.
15. B.
16. B. The onset of narcolepsy is mostly in adolescence or young adulthood. There are sudden sleep attacks which last for 10–20 minutes (and not more than 3 hours) and cataplexy is a feature.
17. D. Modafinil is FDA approved for narcolepsy, shift work sleep disorder and as an adjunct in obstructive sleep apnea.
18. C. Ropinirole is a dopamine agonist (D2, D3 receptors) and is approved for restless leg syndrome.
19. B. There is hypersexuality and not hyposexuality.

Chapter

10 Sexual Disorders

Gender Identity Disorders

Gender is the sense of being a male or a female. Mostly the gender corresponds to the anatomical sex, (i.e. a man with male body organs, also psychologically considers himself as a male), however there might be a mismatch resulting in gender identity disorder. The following are types of gender identity disorder:

A. *Gender identity disorder of childhood*: It usually manifests in preschool years. The child shows preoccupation with the dress and activities of the opposite sex (e.g. the male child insists on wearing skirts and frocks and may play exclusively with dolls and reject the cars and other toys which are usually preferred by boys). The child expresses the desire to be of the opposite sex and rejects behaviors, attire and attributes of his anatomical sex. Usually, there is no feeling of rejection of the anatomical structures however in a small minority it may be present (e.g. the male child may repeatedly assert that the penis and testicles are disgusting and will disappear in due course of time).
B. *Transsexualism*: In adolescents and adults, the symptoms are quite similar to gender identity disorder of childhood. The patients manifest a **desire to live**[Q] and be treated as the other sex, usually accompanied by a **discomfort with one's anatomical sex**[Q] and a **desire to change**[Q] it with the help of a surgery or some other form of treatment. The patient frequently uses the phrases like "I am a man trapped in body of woman". The homosexual orientation is frequently present.
C. *Dual-role transvestism*: The patient wears the clothes of opposite sex, to enjoy the **temporary feeling**[Q] of belonging to the other sex. Unlike transsexualism, there is **no desire to permanently change the sex**[Q]. There is **no sexual arousal**[Q] associated with cross dressing. (Remember, in fetishistic transvestism, which is a type of paraphilia, the cross dressing is associated with sexual arousal).

Treatment: In patients who insist for sex change, **sex reassignment surgery** can be done. In a person born anatomically male, removal of penis, scrotum and testes and construction of labia and vagina is done. In a person born anatomically female, bilateral mastectomy, hysterectomy, removal of ovaries and construction of a neophallus (penis) is done. The hormonal treatment usually accompanies.

> DSM-5 Update: In DSM-5, the diagnosis of "gender dysphoria" is used in place of DSM-4 diagnosis of "gender identity disorder".

Disorders of Sexual Orientation

It must be remembered that homosexuality is not a psychiatric disorder (homosexuality is considered as a normal variant, if it is ego syntonic, i.e. the individual accepts his sexual orientation) however ego dystonic homosexuality (where in the individual doesn't accepts his sexual orientation and wants to change it) has been classified as a disorder.

Disorders of Sexual Response

Phases of Sexual Response Cycle

Normally sexual response has been divided into four phases.

A. *Desire*: It is characterized by a desire to have sex (hypoactive sexual desire disorder is a disorder of this phase).

B. *Excitement (arousal)*: This phase is characterized by penile erection and vaginal lubrication. Other changes such as nipple erection, enlargement of size of testes and elevation of testes, engorgement and thickening of labia minor and clitoris, and physiological changes like increased heart rate, blood pressure and respiratory rate are also seen. There is an associated subjective sense of pleasure (erectile dysfunction is a disorder of this phase).

C. *Orgasm*: There is a peaking of sexual pleasure, followed by release of sexual tension and ejaculation of semen. In females, orgasm is characterized by involuntary contraction of lower third of vagina and contractions from fundus downward to cervix. (premature ejaculation and anorgasmia are disorders of this phase).

D. *Resolution*: The body goes back to the resting state.

There are disorders specific to each phase of sexual cycle as described below:

A. *Sexual desire disorders*: It has been further subdivided into two categories: hypoactive sexual desire disorder, characterized by lack of desire for sexual activity and sexual aversion disorder, characterized by active aversion and avoidance of sexual activity. The only FDA approved drug for treatment of hypoactive sexual desire disorder in females is **flibanserin**, which got approval in August 2015. Due to risk of severe hypotension, flibanserin should not be taken concomitantly with alcohol.

> DSM-5 Update: In DSM-5, the diagnosis of sexual aversion disorder has been removed.

B. *Disorders of excitement (arousal) phase*:

- *Male erectile disorder (erectile dysfunction)*: It is characterized by recurrent or persistent inability to attain or to maintain the erection required for satisfactory sexual intercourse. Erectile dysfunction is usually caused by psychological factors such as anxiety and poor marital relation.

  The presence of **early morning erections** and erections during REM sleep (**nocturnal erections**[Q]) are suggestive of psychogenic erectile dysfunction. Investigation such as penile plethysmography and **nocturnal penile intumescence (NPT)**[Q] are used to record nocturnal erections.

  The physical causes include vascular and neurological disorders like arteriolosclerosis and autonomic neuropathy.

  Treatment: The medications with best evidence include **PDE-5 inhibitors**[Q] (phosphodiesterase-5 inhibitors like **sildenafil**, tadalafil and vardenafil, which facilitate blood flow into penis and enhance erection. The other medications which can be used include oral phentolamine (decreases sympathetic tone and relaxes smooth muscles of corpora cavernosa) and injectable and transurethral alprostadil. Alprostadil contains naturally occurring prostaglandin E and hence has vasodilator action. It can be injected into corpora cavernosa or administered intraurethrally.

  Apart from medications, psychotherapy also plays an important role. The most successful is **dual-sex therapy**[Q] (or simply sex therapy) which was developed by Masters and Johnson. This therapy treats the **"couple"**[Q] and **not the individual**[Q]. The couple is taught ways to improve their communication. The couple is also taught exercises which increases the sensory awareness. These exercises are called, sensate focus exercises. Initially, the couple is asked to touch, rub, kiss on each others body parts, excluding breasts and genitals (this stage is called nongenital sensate focus). In next stage, the same activities are done on breasts and genitals (called genital sensate focus). The whole purpose is to make the couple aware that pleasure can be given and received by methods other than sexual intercourse. The sex therapy is effective not only for erectile dysfunction but other sexual disorders like premature ejaculation.

  Other techniques such as behavioral therapy, hypnotherapy and psychoanalysis have also been used.

- *Female sexual arousal disorder*: It is characterized by inability to achieve adequate vaginal lubrication required for sexual intercourse. The management involves use of lubricants during the intercourse.

C. *Disorders of orgasm phase*:

- *Premature ejaculation*: It is characterized by a pattern of persistent or recurrent ejaculation with minimal sexual stimulation before or immediately after the vaginal penetration.

  The cause of premature ejaculation is usually psychogenic.

> In DSM-5, the criterion for premature ejaculation has been defined more clearly, and states that premature ejaculation is a pattern of ejaculation within approximately one minute following vaginal penetration.

Treatment: Specific techniques have been described for the management of premature ejaculation. These include:

a. ***Squeeze technique***[Q]: When the man gets the feeling of impending ejaculation, the female partner (or the man himself) squeezes the coronal ridge of glans, which results in inhibition of ejaculation.

b. *Stop-start technique* (***Semans technique***): Here, when the man gets the feeling of impending ejaculation, the sex is stopped for some time and once excitement has decreased, it is restarted.

Apart from these techniques, sex therapy (as described earlier) is also an effective method of treating premature ejaculation.

SSRIs (selective serotonin reuptake inhibitors) are also frequently used as they can delay the ejaculation.

- *Female orgasmic disorder (anorgasmia)*: It is characterized by recurrent delay or absence of orgasm in females. It is a common sexual disorder in females and the treatment involves psychotherapy.
- *Male orgasmic disorder (retarded ejaculation)*: It is characterized by recurrent delay or absence of orgasm in males. It is less common than premature ejaculation and is treated with psychotherapy.

D. *Other disorders*:

- *Dyspareunia*: It is recurrent or persistent genital pain in either men or women, before, during or after sexual intercourse.
- *Vaginismus*: It is involuntary muscle constriction of outer third of vagina which makes penile insertion difficult. Vaginismus and dyspareunia frequently coexist.
- ***Nymphomania***[Q]: It is the term used to describe excessive sexual desire in females.
- ***Satyriasis***[Q]: It is the term used to describe excessive sexual desire in males.

> DSM-5 Update: Genito-pelvic pain/penetration disorder is new in DSM-5 and represents a merging of the DSM-4 categories of vaginismus and dyspareunia, which were highly comorbid and difficult to distinguish.

QUESTIONS AND ANSWERS

QUESTIONS

1. Most accurate treatment of erectile dysfunction is: *(PGI 2002)*
A. Sildenafil
B. Master and Johnson technique
C. β-blockers
D. Papaverine

2. Excessive sexual desire in males in known as: *(AIIMS May 2008)*
A. Nymphomania B. Satyriasis
C. Tribadism D. Sadism

3. A homosexual person feels that he is imposed by a female body and has persistent discomfort with his sex. Most likely diagnosis is: *(PGI 2003)*
A. Gender identity disorder B. Transvestism
C. Voyeurism D. Paraphilias

4. How to differentiate between psychological and organic erectile dysfunction? *(NEET/DNB)*
A. Nocturnal penile tumescence
B. PIPE test
C. Sildenafil induced erection
D. Squeeze technique

5. Squeeze technique is used for: *(AI 2000)*
A. Impotence
B. Premature ejaculation
C. Infertility
D. Priapism

6. A 30-year-old male presents to OPD with erectile dysfunction. Basic screening evaluation is unremarkable. The next step in evaluation/management should be: *(AI 2008)*
A. Oral sildenafil titrate trial
B. Cavernosometry
C. Doppler study
D. Neurological testing

7. A 20-year-old girl Neelu enjoys wearing male clothes. Wearing male clothes gives her feeling of more confidence and after these episodes she is an absolutely normal girl. The likely diagnosis is: *(AIIMS 1997)*

A. Transsexualism
B. Fetishism
C. Dual role transvestism
D. Fetishistic transvestism

8. True about dual sex therapy is: *(DNB June 2011)*
A. Patient alone is not treated
B. Uses sildenafil
C. It treats sexual perversion
D. It is used for people with dual gender identities

ANSWERS

1. A, B.
   The pharmacological treatment with best evidence in erectile dysfunction is phosphodiesterase-5 inhibitors like sildenafil. The psychotherapeutic technique which is most commonly used is Master's and Johnson's technique.
2. B. Satyriasis is the condition of excessive sexual desire in males while the same in females is known as nymphomania.
3. A. As mentioned in the question the person is uncomfortable with his sex and feels that he is imposed by a female body (i.e. he is of another sex), both are characteristics of gender identity disorder. Most of the patients with gender identity disorder have homosexual orientation.
4. A. Presence of early morning erections and erections during REM sleep (nocturnal erections) are suggestive of psychogenic erectile dysfunction. As during sleep, there is no anxiety, hence a patient with psychogenic erectile dysfunction is able to have erections. Whereas, a patient with organic erectile dysfunction (due to vascular or neurological causes) won't have erections even during sleep. Investigation such as penile plethysmography and nocturnal penile intumescence (NPT) can be used to record nocturnal erections.
5. B. Squeeze technique and stop-start techniques are used for treatment of premature ejaculation.
6. A. In a young patient with negative screening, the most likely cause of erectile dysfunction is psychogenic erectile dysfunction. He should be given a trial of oral sildenafil.
7. C. Here the person only enjoys wearing clothes of opposite sex and there is no discomfort with her own sex and there is no desire to be of other sex. Hence, it is a case of dual role transvestism.
8. A. In dual sex therapy, the couple is treated and not an individual.

Chapter

11 Child Psychiatry

ATTENTION DEFICIT HYPERACTIVITY DISORDER (ADHD)/HYPERKINETIC DISORDER

The DSM-5 uses the diagnosis of ADHD whereas in ICD-10, the corresponding diagnosis is **hyperkinetic disorder**. It is a common **neuropsychiatric** disorder of childhood, which is more prevalent in **boys** in comparison to girls. The predominant symptoms and signs in the ADHD are as follows:

A. ***Inattention***: The child has **difficulty in giving close attention** to details, makes **frequent mistakes** in school work and other activities. The child is **distractible**[Q] and frequently shifts from one activity to another as he loses interest in one task quickly.
B. ***Hyperactivity and Impulsivity***: The child is **hyperactive** and appears restless. Teacher frequently complains that child keeps on roaming in the class and is **excessively talkative** and **disturbs other students**[Q]. The child is also **impulsive**[Q] and often blurts out answer before question has been completed. He also has **difficulty in waiting for his turn** and often interrupts others or intrudes in others conversation.

Along with the core symptoms of inattention and hyperactivity/impulsivity, children with ADHD frequently show destructive and aggressive behavior and are irritable.

Neurological examination may reveal **soft neurological signs**[Q] (the neurological soft signs are fine abnormalities found during detailed neurological examination such as difficulty in copying age appropriate figures, difficulty in performing rapid alternating movements, difficulty in right left discrimination, etc).

Depending on the predominant symptoms, three subtypes have been defined.

A. Combined presentation
B. Predominantly inattentive presentation
C. Predominantly hyperactive/impulsive presentation.

> DSM-4 required the presence of symptoms before age of 7 years, however according to DSM-5 the onset of symptoms should be before 12 yrs of age to make a diagnosis of ADHD.

Course

Around **50 percent**[Q] of patients achieve remission before puberty and early adulthood. Others achieve only partial remission and are at risk of developi2ng **substance use disorders**[Q] (particularly alcoholism), **antisocial personality disorder** and **mood disorders**.

Treatment

ADHD is a **serious medical illness**[Q] and must be promptly treated. The pharmacological treatment is the mainstay of the treatment. The following medications are used:

A. ***Stimulant medications***: CNS stimulants are the first line drugs in the treatment of ADHD. **Methylphenidate**[Q] is the drug of choice. **Dexmethylphenidate** (containing only the d-enantiomer) has also been used recently. Other stimulant medications used are **dextroamphetamine**, **lisdexamphetamine** and **"dextroamphetamine and amphetamine salt"** combinations. Modafinil has also been used with varied success.
B. ***Nonstimulant medications***: The nonstimulant medications are used if stimulants are not effective or

contraindicated. They include **atomoxetine** (norepinephrine reuptake inhibitor), **clonidine**, guanfacine, venlafaxine and bupropion.

Apart from medications, psychosocial interventions such as social skill training, psychoeducation for parents, behavioral therapy and cognitive behavioral therapy are also effective in the management.

PERVASIVE DEVELOPMENTAL DISORDERS (AUTISM SPECTRUM DISORDER)

These are group of neurodevelopmental or **neurobehavioral disorders**[Q], which are characterized by disturbance of social interaction, abnormalities of communication and restricted behaviors. The following are the subtypes of pervasive developmental disorders:

A. ***Autism (Childhood autism, autistic disorder)***: It is a neurodevelopmental disorder (neurobehavioral disorder) with a strong genetic basis. The onset is before the age of 3 years. Chromosome 7,2,4,15 and 19 have been found to contribute to the disorder. **Fragile X syndrome**[Q], tuberous sclerosis, congenital rubella and phenylketonuria are associated with autism and are found with high frequency in children with autistic disorders. Around **70%**[Q] of children with autism have comorbid mental retardation. The prevalence of perinatal insults like birth asphyxia has also been found to be higher in children with autism. Following are the symptoms:
   - *Impairment in social interaction*: The patients with autism have impaired reciprocal social skills. As infants they have **poor eye contact**[Q], **lack social smile**[Q] and anticipatory posture (the posture which the kid assumes when he wants to be picked up). They may have poor attachment to their parents and other important persons and may not acknowledge their presence (e.g. they won't come running to meet when the father returns to home after office). However, if the routine of these children is disturbed (e.g. if someone rearranges the furniture in their room), they may show **excessive reaction**[Q]. When they grow up, they may have difficulty in making friends and getting into a romantic relationship.
   - *Impairment of communication and language*: These children usually have **significant delay in language milestones**[Q], whereas the motor milestones are usually normally achieved. The patients also have development of abnormal language such as difficulty in making sentences properly (articulation difficulties) and pronoun reversals (using "me" instead of "you").
   - *Restricted, repetitive and stereotyped behavior*: The activities and play of these children tend to be **repetitive**[Q] and boring. They may show stereotyped behaviors like **hand wringing**[Q], spinning and **banging**. These children are quite resistant to changes and may become extremely upset if their routines are disturbed (e.g. bathing routine is changed or furnitures are rearranged in the room). These restrictive behaviors usually result from a lack of imagination and creativity.

   Apart from these three characteristic features, the patients with autism also have abnormal responses to stimuli. They may have a higher threshold for pain and may show intense interest in some sounds (like that of a ticking watch) and may totally ignore other sounds. They may also have self destructive behaviors like head banging, biting , scratching, etc.

   Precocious skills or islets of precocity: Some individuals with autism may have skills in certain areas, which are much higher than their normal peers. For example, hyperlexia (early ability to ready very well), extremely good rote memory or calculating ability, etc.

   Treatment: Educational interventions such as a structured classroom teaching along with use of behavioral therapy is the recommended treatment. The role of medications is limited. Atypical antipsychotics such as risperidone and aripiprazole have been used to reduce aggressive and self injurious behavior.

B. ***Rett's disorder (Rett's syndrome)***: Earlier it was believed that Rett's disorder occurs exclusively in **females**[Q], however of late males with similar presentation have been described. It is characterized by normal development till the age of 5 months. Between 5-48 months , the child starts to lose acquired hand skills (such as fine motor skills) and there is loss of acquired speech. Also, there is deceleration of head circumference producing **microcephaly**[Q]. The child gradually develops stereotyped hand movements such as hand wringing, licking or biting of fingers. The language function remains impaired and there is also loss of social interaction. The child also develops **poorly coordinated gait** or trunk movements.

Along with these symptoms around 75% of children have seizures. The disorder is usually progressive and treatment is symptomatic.

C. ***Childhood disintegrative disorder (Heller's syndome)***: It is characterised by normal development till the age of 2 years. Between 2-10 years there is loss of acquired motor skills, social skills, language skill and bowel or bladder control. The child develops the three core symptoms of impaired communication, impaired social interaction and repetitive, stereotyped behavior. The course is usually progressive though some patients may show improvement. The treatment is symptomatic.

> DSM-5 Update: In DSM-5, the term pervasive developmental disorder has been replaced by autism spectrum disorder. Also, all the subtypes, such as autism, Rett's disorder, Aspergers syndrome have been removed. Now, autism spectrum disorder is considered as a continuum with difference in severity, rather than presence of subtypes.

> DSM-5 Update: In DSM-5, in autism spectrum disorders, language dysfunction has been removed as a core criterion. Only impaired social interaction and repetitive, restrictive behaviors form the core criterion now.

D. ***Asperger's syndrome***: It is characterized by impairment of social interaction and restricted, repetitive and stereotyped behavior. However no language delay or disturbance is seen. The treatment is usually supportive.

CONDUCT DISORDER AND OPPOSITIONAL DEFIANT DISORDER

A. ***Conduct disorder***: It is characterized by repetitive and persistent pattern of **disregard for rights of others**[Q] and **aggressive**[Q] and **dissocial behavior**[Q], such as excessive levels of fighting or bullying, cruelty to animals or other people, severe destruction of property, fire setting, stealing , truancy from school, **repeated lying**[Q], frequent running from school and home, defiance of authority figures and a pattern of disobedience. Conduct disorder is frequently associated with unsatisfactory family relationships and failure at school. These children may later on develop antisocial personality disorder (dissocial personality disorder).

B. ***Oppositional defiant disorder***: It is less severe than conduct disorder and is characterized by persistently negativistic and defiant behavior such as frequent arguing with adults, refusal to comply with adults requests and rules, frequent loss of temper and often deliberately annoying adults. However unlike conduct disorder, there are no serious violations like theft, fire setting, destruction, etc.

The management for both involves family intervention and behavioural therapy. In some cases, low dose antipsychotics have been found to be effective.

LEARNING DISORDERS (SPECIFIC DEVELOPMENTAL DISORDERS OF SCHOLASTIC SKILLS)

These developmental disorders are characterized by **significant impairment** in one or more of the **scholastic skills**[Q] which are out of proportion to the intellectual functioning of the child. For example, a child may present with significant difficulty in reading while having normal writing and arithmetic skills and a **normal IQ**[Q]. Depending on the symptoms, the subtypes have been described.

A. ***Specific reading disorder (Dyslexia)***: The child's reading performance is significantly impaired and he may make errors while reading, may have slow reading speed or may have difficulty in comprehension.

B. ***Disorder of written expression (specific spelling disorder)***: The child may make frequent spelling mistakes, errors in grammar and punctuations and may have poor hand writing.

C. ***Specific disorder of arithmetic skills***: The area of impairment is arithmetics.

D. ***Mixed disorders of scholastic skills***: There is impairment in reading, writing and arithmetics combined.

Apart from the above mentioned symptoms, the child may have associated problems such as inattention, hyperactivity and emotional disturbances**.**

MENTAL RETARDATION

Mental retardation is a condition characterized by incomplete development of intellectual functions and adaptive skills (skills which help an individual live a successful life). The intelligence is usually measured by calculating the Intelligence Quotient (IQ).

IQ = Mental age/Chronological age × 100[Q]

In this formula, the maximum denominator is 15, even if assessment of an older individual is being performed. Mental retardation is diagnosed if the IQ is less than 70.

Category	*IQ*
Normal	90-109
Borderline	70-89
Mild mental retardation	50-69
Moderate mental retardation	35-49
Severe mental retardation	20-34
Profound mental retardation	< 20

The level of functioning varies in different severity of mental retardation. The following table summarizes the same.

Category	*Class*	*Mental age as adults*	*Educational achievement*	*Life*	*Work*
Mild MR	Educable	9-12 yrs	Upto 6th class	Independent living	Unskilled or semi-skilled work
Moderate MR	Trainable	6-8 yrs	Upto 2nd class	Needs some education	Unskilled or semi-skilled work
Severe MR	Dependent	3-6 yrs	No formal education	Needs attention	Simple task-under supervision
Profound MR	Needs life support	< 3 yrs	No formal education	Needs continuous supervision	None

An earlier classification of retardation used the words "idiots, imbecile, and moron".

Term	*IQ range*
Moron	51-70
Imbecile	26-50
Idiot	0-25

The most common chromosomal cause of mental retardation is **Down syndrome**[Q] followed by **fragile-X syndrome**[Q].

DSM-5 Update: In DSM-5, the diagnosis of mental retardation has been replaced with "intellectual disability".

Behavioral problems in mental retardation: The patients with mental retardation may have maladaptive behavior such as aggression, self injurious behaviors, hyperactivity, etc. These behaviors can usually be modified using behavioral therapy techniques like **contingency management**[Q], in which the desired behaviors are rewarded and undesired behaviors are punished.

QUESTIONS AND ANSWERS

QUESTIONS

1. Which of the following is not seen in a hyperkinetic child? *(DNB 1993, AI 1991)*

A. Aggressive outbursts
B. Decreased attention span
C. Left to right disorientation
D. Soft neurological signs

2. A 9-year-old child disturbs other people, is destructive, interferes when two people are talking, does not follow instructions and cannot wait for his turn while playing a game. He is likely to be suffering from: *(AIIMS Nov 2005)*

A. Emotional disorders
B. Behavioral problems
C. No disorder
D. Attention deficit hyperactivity disorder

3. A 10-years-old child presents with hyperactivity and inattention. Parents are extremely worried, what would you say to the parents? *(AIIMS Nov 2008)*

A. It is a normal behavior
B. Child has a behavioral problem and should receive behavior therapy
C. Child has a serious problem and should receive medical therapy
D. There should be a change in environment

4. ADHD in childhood can lead to what in future: *(PGI 2000)*

A. Schizophrenia
B. Alcoholism
C. Intellectual changes
D. Antisocial behavior

5. Following drugs are used in the treatment of ADHD: *(DNB NEET 2014-15)*

A. Amphetamine

B. Modafinil
C. Methylphenidate
D. All of the above

6. Drug(s) used in treatment of attention-deficit hyperactivity disorder: *(PGI Dec 2008)*
A. Atomoxetine
B. Methylphenidate
C. Dexmethylphenidate
D. Quetiapine
E. Dextroamphetamine

7. Not an associated comorbid condition in children with hyperkinetic attention deficit disorder is: *(DNB Dec 2010)*
A. Elimination disorder
B. Anxiety disorder
C. Sleep disorder
D. Language disorder

8. A neurodevelopmental disorder which is characterized by impaired social interaction, impaired verbal and nonverbal communication, and restricted and repetitive behavior is description for: *(DNB NEET 2014-15)*
A. Autism
B. Anxiety disorder
C. Antisocial personality disorder
D. Paranoid schizophrenia

9. 10-years-old child presents with impaired social interaction, impaired communication and stereotyped behavior. He has normal IQ and language skills. What is the most probable diagnosis? *(DNB NEET 2014-15)*
A. Asperger's syndrome
B. Autism
C. Rett syndrome
D. Childhood depression

10. A 3-year-old child has normal developmental milestones except delayed language development (poor speech development). He has difficulty in concentration, communication, and making friends (i.e. he has no friends) and spends time seeing his own hands. The most probable diagnosis is: *(AI 2012, AIIMS Nov 2006)*
A. Autism
B. ADHD
C. Specific learning disability
D. Mental retardation

11. Infantile autism is characterized by: *(PGI Dec 2004)*
A. Impaired vision
B. Impaired neurobehavioral development
C. Impaired folate level
D. A socioeconomic hazard
E. Result of wrong parenting

12. Autism is: *(PGI 2000)*
A. Neurodevelopmental disorder
B. Social and language communication problem
C. Metabolic disease
D. Mainly due to hypothalamus damage

13. A 6-year-old child with history of birth asphyxia does not communicate well, has slow mental and physical growth, does not mix with people, has limited interests and gets widely agitated if disturbed. Diagnosis is: *(AIIMS 2001)*
A. Hyperkinetic child
B. Autistic disorder
C. Attention deficit disorder
D. Mixed receptive–expressive language disorder

14. A girl with normal milestones spend her time seeing her own hand and does not interact with others. What is the likely diagnosis: *(AIIMS 2008)*
A. ADHD
B. Autism
C. Asperger's syndrome
D. Rett's disorder

15. A 2-year-old girl child is brought to the out patient with features of hand wringing stereotyped movements, impaired language and communication development, breath holding spells, poor social skills and deceleration of head growth after six months of age. The most likely diagnosis is: *(AIIMS Nov 2003)*
A. Asperger syndrome
B. Rett's syndrome
C. Fragile X-syndrome
D. Cotard syndrome

16. Which of the following is not seen in autism? *(AIIMS Nov 2014)*
A. 2/3rd patients are mentally retarded
B. Poor eye contact
C. Language is impaired
D. Abnormal dermatoglyphics

17. A child with pervasive developmental disorder will have all *except*: *(AIIMS Nov 2015)*
A. Stereotyped behavior
B. Reduced social interaction
C. Poor language skills
D. Impaired cognition

18. Which of the following disease is seen only in females? *(DNB Dec 2011)*
A. Autism
B. Asperger'ssyndrome
C. Rett's disease
D. Colard disease

19. Rett's syndrome is characterized by all *except*: *(DNB NEET 2014-15, AIIMS 2013)*
A. Regression of acquired skills
B. Breath holding spells
C. Autistic behavior
D. Macrocephaly

20. IQ is: *(DNB NEET 2014-15)*
A. Mental age/chronological age × 100
B. Chronological age/mental age × 100
C. Mental age + chronological age × 100
D. Mental age – chronological age × 100

21. According to Wechsler intelligence scale scoring, average IQ of a normal child is: *(AIIMS 2013)*
A. 50
B. 75
C. 90
D. 111

22. A 16-year-old male is found to have a mental age of 9 years on IQ testing. He has: *(AIIMS May 2005)*
A. Mild mental retardation
B. Moderate mental retardation
C. Severe mental retardation
D. Profound mental retardation

23. Which of the following score is not included in mild mental retardation? *(PGI May 2012)*
A. 85
B. 50
C. 45
D. 75
E. 65

24. A patient with IQ 30 will be diagnosed with: *(DNB NEET 2014-15)*
A. Mild mental retardation
B. Moderate mental retardation
C. Severe mental retardation
D. Profound mental retardation

25. True about mental retardation: *(PGI Nov 2011)*
A. More common in females than males
B. Severe MR is IQ < 20
C. Antenatal factor can cause mental retardation
D. Common cause is down's syndrome
E. Life long inability to learn and progress

26. In a child with IQ 50, which of the following is true: *(PGI 2001)*
A. Can look after himself independently
B. Can study upto 8th standard
C. Can follow simple verbal commands
D. Can handle money
E. Recognize family members

27. All of the following statements about 'Imbecile' are true, *except*: *(AI 2011)*
A. IQ is 50-60
B. Intellectual capacity is equivalent to a child of 3-7 years of age
C. Impaired self care
D. Condition usually congenital or acquired at an early age

28. X-linked disease leading to mental retardation is: *(PGI 2000)*
A. Myotonic dystrophy
B. Fragile X-syndrome
C. Tuberous sclerosis
D. Phenylketonuria

29. Best therapy suited to teach daily life skill to a mentally challenged child: *(AIIMS May 2011, 2009)*
A. CBT (Cognitive behavior therapy)
B. Contingency management
C. Cognitive reconstruction
D. Self instruction

30. A 14-year-old boy is not able to get good grades in 9th standard exam. But he is very sharp and intelligent. Best test to diagnose his problem: *(AIIMS 2012)*
A. Child behavior checklist
B. Bhatia's battery
C. Specific learning disability test
D. Child behavior battery

31. A child finds difficulty to spell and read, otherwise his IQ is normal, interacts well with parents and friends. Vision is normal. Most probable diagnosis of the condition is? *(DNB June 2011)*
A. ADHD
B. Dyslexia
C. Autism
D. Asperger syndrome

32. A 14-year-old boy has difficulty in expressing himself in writing and makes frequent spelling mistakes. He passes his examination with poor marks. However his mathematical ability and social adjustment are appropriate for his age. Which of the following is the most likely diagnosis? *(AIIMS Nov 2004)*
A. Mental retardation
B. Specific learning disability

C. Lack of interest in studies
D. Examination anxiety

33. A boy presents with history of abnormal excessive blinking and grunting. He says he has no control over his symptoms which have risen in frequency of late. This has started affecting his social life and is making him depressed. Which of the following medications should be used in the management? *(AIIMS May 2015)*

A. Carbamazepine
B. Imipramine
C. Risperidone
D. Methylphenidate

34. Appetite for nonnutritive substances is called: *(DNB NEET 2014-15)*

A. Pica
B. Anorexia
C. Bulimia
D. Binge

35. Scholastic performance is impaired in all of the following *except*: *(AI 2012)*

A. Attention deficit hyperactivity disorder
B. Specific learning disorder
C. Anxiety
D. PICA

36. Conduct disorder in a child manifests with: *(PGI 2001)*

A. Disregard for right of others
B. Doesn't care for authority
C. Backward in studies
D. Decreased head circumference
E. Steals things

ANSWERS

1. C. The best answer here would be left to right disorientation. Please remember, in ADHD, "left to right discrimination" difficulties can be found. However, the term "left to right disorientation" is used for describing gross inability to distinguish left from right and is usually a feature of Gerstmann's syndrome.
2. D. This child has symptoms of hyperactivity and impulsivity and the most likely diagnosis would be attention deficit hyperactivity disorder.
3. C. The symptoms are suggestive of ADHD. ADHD is a serious medical problem and should be treated properly. The symptoms of ADHD interfere with education of child, and if not treated child's education may suffer greatly and will adversely affect his future life. Also, medications like methylphenidate are the first line treatment.
4. B, D.
   Kindly note, that few books have also mentioned intellectual changes as an answer. This is not true. Though children with ADHD tend to have lower educational achievements, however it is not because of any intellectual impairment but because of poor attention and hyperactivity.
5. D.
6. A, B, C, E.
   See text
7. A. Elimination disorders are not a common comorbidity in ADHD.
8. A.
9. B
10. A. The child has all the three core features of autism, impairment in social interaction (difficulty in making friends), impaired communication and repetitive, stereotyped behavior (spends most time seeing own hands).
11. B, D.
    Autism is a neurodevelopmental or neurobehavioral disorder. It causes socioeconomic problems as a majority of autistic patients remain dependent on others however use of term "hazard" is a bit insensitive here.
12. A,B.
13. B. The history of poor social interaction and restricted behaviors along with history of agitation when disturbed supports the diagnosis of autism. Around 70% of children with autism have comorbid mental retardation. The prevalence of perinatal insults like birth asphyxia has been found to be higher in children with autism.
14. B. The history of restricted behaviors and poor social interaction is suggestive of autism.
15. B. The deceleration of head growth after 6 months of age followed by repetitive, stereotyped behavior (wringing hand movements), impaired communication and poor social interaction is suggestive of Rett's syndrome.
16. D.
17. D.
18. C. Rett's syndrome was earlier believed to occur exclusively in females, however of late males with similar presentation have been described.
19. D.

20. A.
21. C. According to Wechsler intelligence scale, the following is the classification.

IQ range	*IQ classification*
130 and above	Very superior
120-129	Superior
110-119	High average
90-109	Average
80-89	Low average
70-79	Borderline
69 and below	Extremely low

22. A The formula for IQ is mental age/chronological × 100. However, please remember that the maximum denominator can be 15. In this case 9/15 X 100 = 60. Hence, it will come under the category of mild mental retardation.
23. A, C, D.
    The range for mild mental retardation is IQ from 50-69.
24. C.
25. C, D.
    Mental retardation is more common in boys, severe MR is IQ < 35 and patients with mild and moderate MR can learn.
26. A, C, D, E.
    IQ of 50 corresponds to mild mental retardation. People with mild mental retardation can handle money, can have an independent living, study till 6th class.
27. A. The IQ of imbeciles is between 26-50. Hence, most of their features would correspond to that of moderate mental retardation.
28. B.
29. B. *See* text.
30. C. The history of poor academic performance despite good intelligence should raise suspicion of learning disorders (specific learning disability). Hence, he should take a specific learning disability test to rule out the same.
31. B. The history of difficulty in reading and spelling mistakes in presence of normal IQ is suggestive of learning disorders (specific learning disability).
32. B. Scholastic difficulty in a particular skill (written expression) is suggestive of specific learning disability.
33. C. The history of motor tics (abnormal excessive blinking) and vocal tics (grunting) is suggestive of tics disorder (possibly tourette syndrome). Antipsychotics like haloperidol and risperidone are the drugs of choice.
34. A.
35. D.
36. A, B, C, E.
    See text.

Chapter

12 Psychoanalysis

The term "psychoanalysis" was coined by **Sigmund Freud**Q who is also known as **"father of psychoanalysis"**Q. **Freud (1856-1939)**Q was born in Freiburg, Moravia (now in Czech republic) and lived most of his life in **Vienna**Q. He died in London in 1939.

Psychoanalysis is a theory which states that the childhood experiences and memories and unconscious mental activity (activity of mind which we are not aware of) plays an important role in determining human behavior and emotions and also in the development of psychiatric disorders. The term "psychoanalysis" is used not only to refer to this theory but also for the treatment method which is based on this theory.

The theory of psychoanalysis was developed by Freud while working with patients of hysteria **(the term hysteria is no longer used, these patients will get a diagnosis of "dissociative disorder" according to current classification)**. In particular Freud came to know about a patient Anna O, who had developed multiple unexplained neurological symptoms including paralysis of limbs, after the death of her father. Whenever she was able to recall how a particular symptom originated, that symptom would improve. For example, once she was able to recall that on one occasion while she was sitting at her sick father's bedside, she had a daydream that a snake was crawling towards her father and while she wanted to ward off the snake she couldn't do it as her arm had gone into sleep. As soon as Anna O, was able to recall this event, the paralysis of her arm improved. This case provided Freud a strong demonstration, that unconscious memories (memories which an individual has forgotten, but which are still present in the unconscious mind) can result in development of symptoms.

Freud started treating hysterical patients, wherein he would try to retrieve the unconscious memories during the treatment procedure. Freud developed a technique called **"free association"** in which the patient was asked to say whatever came into their minds without censoring their thoughts. With the help of this technique, Freud was able to gain access to unconscious memories, which would come out as patient would start saying all that came into their minds and would not try to stop any thought. Freud also gave a lot of importance to **slips of the tongue** (which he called **parapraxis**Q). Freud believed that these "slips of tongues" were not simple mistakes, and that these slips actually conveyed **important information**Q about what was going on in the unconscious mind.

The psychoanalytic treatment provided by Freud also used the principles of transference and countertransference.

TransferenceQ is the feeling that the patient develops for the doctor. This feeling is a combination of the feelings patient had for figures from the past and the real feeling for the clinician. For example, if the doctor reminds the patient of his dominating and insensitive father, the patient will develop a negative feeling for the doctor, despite the fact that doctor has not done anything to offend him.

CountertransferenceQ is the feeling that the clinician develops for the patient.

Topographical Theory of Mind

In **1900**Q, Freud published a book called **"The interpretation of dreams"**Q. In this book, Freud said that dreams were meaningful and by understanding dreams, one can understand about the unconscious mind of an individual. In this book, Freud proposed a theory of mind, called the

topographical theory of mind. According to this theory the mind can be divided into three regions:

A. The conscious
B. The preconscious
C. The unconscious

A. ***The conscious***: It is the part of mind which is accessible to us. We are aware of the contents of conscious mind. Everything you know about yourself is a part of conscious mind.
B. ***The preconscious***: The content of preconscious mind are not normally available to us, but they can be recalled or brought into awareness by focusing attention. For example, you may not be aware of the appearance of your 5th class teacher, however if you try to focus and remember hard, you might be able to recall her appearance. The preconscious separates the conscious and unconscious mind. The preconscious mind has a barrier, called **repression**, which normally doesn't allow the contents of unconscious mind to reach the conscious mind. If any unconscious memory has to reach the conscious awareness, it must find a way to overcome the force of "repression". Freud reported that during sleep, the repression force becomes lax, and many unconscious memories and desires are able to reach the conscious in the form of dreams. That's why Freud believed that the interpretation of dreams can reveal the contents of unconscious memories and desires. Further, when a person indulges in "free association", few unconscious contents are able to cross the barrier of repression and are able to come out in the form of "slips of tongue".
C. ***The unconscious***: The unconscious mind is not accessible to an individual. The unconscious mind contains, **the instinctual drives** (i.e. the drives and desires one is born with) such as sexual instinct and aggressive instinct. Further, distressing childhood memories and distressing desires are also buried inside the unconscious. These contents are not available to the conscious mind due to the barrier of "repression" Freud believed that by not allowing these memories to reach conscious, repression causes development of psychiatric symptoms and disorders.

The unconscious mind is characterized by **"primary process thinking"**[Q]. This is primitive way of thinking in which the mind wants immediate 'wish fulfillment" and instinctual discharge (wants all desires and instincts to be fulfilled immediately without considering the consequences). The primary process thinking is **illogical** and **contradictory.**

Structural Theory of Mind

Later in his life, Freud replaced the topographical theory of mind with a newer theory, called the structural theory of mind. According to this theory, there are three components of mind: id, ego and superego.

A. ***Id***: It is the most primitive part of mind with which an infant is born. Id consists of the instinctual drives. It is that part of mind which wants to have pleasure and that too immediately. Id doesn't care about the external word or any consequences. Id hence works on **"pleasure principal"**. Id uses the primary process thinking. Id is completely in the **unconscious domain** of mind.
B. ***Ego***: Ego is that part of mind which deals with the external world. The part of your mind which is reading this book is "ego". Apart from dealing with the external world, another important function of ego is to deal with the "id" and "superego" and maintain a balance between the two and the external word. Since, the ego maintains a balance and helps in dealing with the realities of the outside world, it is said to work on **"reality principal"**. Ego is said to be the **"executive organ"** of the mind. Ego has **both conscious and unconscious** components. The "defense mechanisms" reside in the **unconscious component** of ego.
C. ***Superego***: It is that part of our mind, which wants to follow the moral principles and do the right thing. The voice of conscience, which scolds you, when you are not studying, comes from superego. Superego is **mostly unconscious**, but also has a **conscious component**.

To understand how these components work, an example can be illustrated. While you are studying, your id wants you to throw away the books and instead go out and have fun and indulge in some pleasurable activity. On the other hand, your superego wants you to study very hard without taking many breaks and stay away from all distractions. Finally, your ego does a balancing act and you decide that you will study for two hours and after that you will take a break and will watch a movie. This is how, ego always keeps a balance.

As mentioned in this example, conflicts keep on going in the mind (between id, ego and superego) and these **unconscious conflicts**[Q] in the mind are believed to cause

psychiatric disorders according to the psychodynamic (or psychoanalytic) theories.

Defense Mechanisms

All the defense mechanisms operate at an unconscious level (except, suppression which is a conscious and voluntary defense mechanism).

An important function of ego is to prevent a build up of excessive and unbearable anxiety. Many unacceptable urges, if they reach the conscious awareness, can produce excessive anxiety. Defense mechanisms are the tools used by the "ego" to prevent the development of excessive anxiety. The defense mechanisms have been divided into four groups: narcissistic, immature, neurotic and mature defense mechanisms. Following are the important defense mechanisms:

Narcissistic Defenses

A. *Denial*: It is refusal to acknowledge the reality. The person continues to behave as if nothing has happened. For example, a mother refused to accept that her seven year old son died in an accident and insists that he will be back for dinner.

B. *Projection*: Projecting "own" unacceptable feeling about others, on to others. For example, a husband with an unacceptable wish of indulging in infidelity, starts accusing his wife of indulging in infidelity. Here, the husband has "projected" his own wish on to the wife. This defense mechanism is responsible for development of **delusions and hallucinations**.

Immature Defenses

C. *Acting out*: Acting on unconscious desires without becoming aware of them. For example, a person suddenly steals an item from a shop without any prior planning. In this case, this person had an unconscious desire of indulging in stealing. His mind however did not allow this feeling to enter his conscious, as that would result in this person feeling bad about himself. Hence, this person resorts to straight away acting on the unconscious desire without even becoming aware of the same. This defense mechanism is involved in development of **impulse control disorders**.

D. *Passive-aggressive behavior*: Indirectly expressing the anger towards others. For example, a young boy was forced to bring a glass of water for the father, while bringing the water, the child accidentally tripped and dropped the glass. Here, the child was able to express his anger indirectly by dropping the glass.

E. *Regression*: Attempt to return to an earlier phase of development (i.e. childhood) to avoid the tensions and conflicts of present phase of development (i.e adulthood). For example, extremely stressed because of an upcoming entrance examination, a medical students goes to a park and starts playing cricket along with the children. Regression is involved in development of **neurosis**[Q].

F. *Projective identification*: In this defense mechanism, intolerable aspects of self are projected on to another person, that person is induced to play the projected part and the two persons than act in unison. For example, a wife who has lots of aggression can project her aggression on to the husband, and make him behave in an aggressive manner and finally a system develops where the husband indulges in aggression and wife is the recipient of aggression. Please remember all of this happens unconsciously without entering into awareness of either the wife or the husband. Projective identification is seen in patients with **borderline personality disorder**.

Neurotic Defenses

G. *Displacement*: Shifting emotions about one object/individual onto another object/individual. For example, after being scolded by his consultant, a senior resident comes to the ward and started shouting at the intern. Here, actually the senior resident is angry at the consultant but he is displacing his anger on the intern. Displacement is involved in the development of **phobias**[Q].

H. *Intellectualization*: Excessive use of intellectual process to avoid the painful emotions. For example, a doctor who was diagnosed with pancreatic cancer has a long discussion about the pathophysiology of the cancers with his treating physician. Here, the doctor is trying to avoid the painful emotion of being diagnosed with the cancer by discussing excessively about the pathophysiology of cancers.

I. *Isolation of affect*: Removing the feelings associated with a stressful life event. For example, without showing any emotions, a woman tells her family members that she has been diagnosed with advanced stage cholangiocarcinoma.

J. *Repression*: It is one of the most important defense mechanism, often referred to as the "primary" defense

mechanism. It is unconsciously forgetting something, which can not be retrieved later. For example, a young girl who was sexually abused by her father, "forgets" this incidence of sexual abuse. Now, even if she wants to recall it, she can't do it in normal circumstances.

K. *Rationalization*: Offering rational explanations to justify own unacceptable behavior. For example, an alcoholic blamed his family environment for his habit of excessive drinking. It is a commonly used defense mechanism in **substance use disorders**.

L. *Dissociation*: Splitting of a single (e.g. memory, identity) or group of mental functions from the remaining mental functions. It is seen in disorders like **dissociative identity disorder**, where for example, the identity of an individual gets split from rest of the mental functions.

M. *Reaction formation*: Transformation of feelings into exact opposite. For example, a man who is actually infatuated by an office colleague tells his friend that he really hates her. Here, the actual feeling is that of infatuation but that is being transformed into the feeling of "hatred".

N. *Undoing*: An act which is done to nullify a previous act. For example, a husband brings gifts for wife next day after having a fight with her the previous day. The defense mechanism of undoing is used in **obsessive compulsive disorder**[Q].

O. *Aim inhibition*: Placing a limitation upon instinctual demands, accepting partial or modified fulfillment of desires. For example, a student who wanted to became a doctor but who was not able to clear the pre medical tests takes admission in a veterinary course and becomes a veterinary doctor.

Mature Defenses

P. *Altruism*: Satisfying internal needs by helping others. For example, while driving in a drunk state, a man met an accident and lost his son who was travelling alongside him. Later, he started a campaign against drunk driving and started educating people about ills of drunk driving.

Q. *Anticipation*: Planning in advance to deal with an uncomfortable event. For example, a student plans all his arguments comprehensively before going to home after a bad exam result.

R. *Humor*: Using comedy to deal with unpleasant feeling and situations. For example, two medical students joked and laughed at themselves after getting humiliated by the examiner during the viva.

S. *Sublimation*: Expression of unacceptable feelings in a socially acceptable manner. For example, a middle aged man with unacceptable sexual desire becomes a painter and starts making nude paintings. Here, the sexual desires are getting an outlet and its socially acceptable since painting nudes is considered an art.

T. *Suppression*: It is the only **voluntary or conscious defense mechanism**. It involves a voluntary decision to not think about an event for some time and hence avoid the accompanying emotions. For example, a medical student who is extremely stressed out because of an upcoming entrance exam decides to take a one day break during which he doesn't think at all about the exam.

Defense mechanisms in psychiatric disorder: All the defense mechanisms are used at times by all of us. However when used excessively, they can result in development of psychiatric disorders. Following is a list of few defense mechanisms and associated disorders:

A. *Obsessive compulsive disorder*: **Reaction formation**[Q], **displacement**[Q], **undoing and inhibition**[Q]

B. *Phobia*: **Displacement and inhibition**[Q]

C. *Dissociative disorder*: **Dissociation**[Q]

D. *Neurosis*: **Regression**[Q].

Psychosexual Stages of Development

Sigmund Freud[Q] proposed that the sexuality develops in multiple stages. Freud used the term "sexuality" in a broader concept that included others forms of pleasure also and not only genital sexuality. He proposed five stages of development. Freud further proposed that the development may get arrested at a particular stage (called **"fixation"**) and may result in development of psychiatric disorders:

A. *Oral stage (0-1.5 years)*: This is the first stage of development where in the pleasure is derived from the oral cavity. The child derives pleasure in cutting, biting, chewing, etc.

B. *Anal stage (1.5-3 years)*: The site of pleasure is anal region. The child gets a sense of achievement by getting toilet trained. If the psychosexual development gets arrested at this stage (called **fixation at anal stage**), it can result in development of **obsessive compulsive disorder**[Q].

C. *Phallic stage (3-5 years)*: The site of pleasure is the genital area. According to Freud, penis becomes the organ of principal interest to children of both sexes. The male child develops what is known as **oedipus complex**[Q] in which he starts developing sexual feeling towards the mother and wants to replace the father. However , the male child also becomes fearful, that if father finds it out, his father might castrate him (and hence the child develops **castration anxiety**[Q]). The oedipus complex in male child gets resolved once the child shifts his affection away from mother to some other female and starts identifying (starts imitating father and trying to become like him) with the father.

In females, the oedipus stage unfolds differently (at times the term used for female child is **"electra complex"**). The girl child develops sexual desire for the father. At the same time, she becomes aware that she doesn't have a penis and desires to get one (known as "penis envy"). The female child believes that she was castrated and that's why does not have a penis and holds her mother responsible for it, developing anger against the mother. The stage gets resolved when the female child starts identifying with the mother.

Failure to resolve the oedipus and electra complex can result in development of neurotic illnesses (like hysteria). Hence, the **neurotic illness develops due to fixation at phallic stage**[Q].

D. *Latent stage (5-12 years)*: During this stage, there is relative quiescence or inactivity of sexual drive and child focuses on learning and gaining skills.

E. *Genital stage (12 years onward till young adulthood)*: This stage is characterized by maturation of genital functioning and gradual achievement of a mature sexual and adult identity.

QUESTIONS AND ANSWERS

QUESTIONS

1. The term 'id' and "superego" were coined by: *(DNB 2003, DNB 1994, WB 2001)*

A. Freud B. Skinner
C. Erik Erikson D. Bleuler

2. That part of mind which works on reality principle is: *(DNB 2004, Karnataka 2001)*

A. ID B. Ego
C. Super ego D. Ego-ideal

3. The term 'free association' which is a fundamental technique of psychoanalysis was coined by: *(DNB 2006, JIPMER 2001)*

A. Freud B. Adler
C. Erikson D. Jung

4. Theory of "Psychosexual development" was given by: *(DNB Dec 2010)*

A. Anna Freud B. Sigmund Freud
C. Jean Piaget D. Skinner

5. Interpretation of dreams by Freud was published in: *(UP 2001, KA 2002, DNB 1999)*

A. 1990 B. 1900
C. 1956 D. 1919

6. Counter transference is: *(AIIMS Nov 2011)*

A. Type of defense mechanism
B. Psychic connection between patient and disease with transfer of psychic energy from body parts to brain
C. Implies doctor's feelings towards patient
D. Patient's feelings towards doctor during psychotherapy

7. According to Sigmund Freud, primary process thinking is: *(JIPMER 2011)*

A. Illogical and bizarre
B. Rational
C. Absent during sleep
D. Logical and unconscious

8. Psychodynamic theory of mental illness is based on: *(AIIMS Nov 2007)*

A. Unconscious internal conflict
B. Maladjusted reinforcement
C. Organic neurological problem
D. Focuses on teaching patients to restrain absurd thoughts

9. Wrong statement about psychoanalysis is: *(DNB 2007, J&K 2008; TN 2006)*

A. Parapraxis has meaning
B. Transference is patient's feeling for therapist
C. Counter transference is clinician's feelings for patient
D. Unguided communication has no meaning

10. Oedipus complex (given by Sigmund Freud) is seen in: *(PGI 1998, Delhi 1998, DNB 2004)*
A. Boys of 1-3 years of age
B. Girls of 1-3 years of age
C. Boys of 3-5 years of age
D. Girls of 3-5 years of age

11. In psychoanalytic terms, obsessive compulsive disorder is fixed at: *(DNB 1998, Delhi 1998, TN 2002, Mah. 2003)*
A. Oedipal stage
B. Genital stage
C. Oral stage
D. Anal stage

12. Fixation of hysteria is: *(DNB 1999, WB 2002, J&K 2004, PGI 2005)*
A. Genital
B. Anal
C. Oral
D. Phallic

13. Following name(s) is/are associated with psychodynamic theory: *(PGI Nov 2009)*
A. Carl Jung
B. Sigmund Freud
C. Emil Kraepelin
D. Eugen Bleuler
E. Kurt Schneider

Defense Mechanisms

14. Not a defense mechanism: *(PGI 1998)*
A. Derailment
B. Repression
C. Distortion
D. Undoing

15. Which of the following is a mature defense mechanism? *(DNB 2002, JIPMER 1991, UP 2007)*
A. Projection
B. Reaction formation
C. Anticipation
D. Denial

16. Which of the following is not a neurotic defense mechanism? *(DNB NEET 2014-15)*
A. Isolation
B. Regression
C. Reaction formation
D. Undoing

17. Which of the following is a neurotic defense mechanism? *(DNB NEET 2014-15)*
A. Repression
B. Anticipation
C. Projection
D. Undoing

18. Which of the following excludes painful stimuli from awareness? *(AIIMS 1998)*
A. Repression
B. Reaction formation
C. Projection
D. Rationalization

19. Avoiding awareness of pain of reality by negative sensory data is seen in which of the following defense mechanisms? *(MH 2011)*
A. Distortion
B. Denial
C. Displacement
D. Dissociation

20. Postponing paying attention to a "conscious impulse" or "conflict" is a mature defense mechanism known as:
A. Sublimation
B. Suppression
C. Humor
D. Anticipation

21. A reluctant child forced to bring sugar from a shop spills half of it on the way. This is an example of: *(JIPMER 1997, Delhi 2002, DNB 2004)*
A. Hysteria
B. Passive aggression
C. Disobedience
D. Active aggression

22. A chronic alcoholic blames the family environment as a cause of his alcoholism. This is phenomenon of: *(AIIMS 2000)*
A. Projection
B. Denial
C. Rationalization
D. Sublimation

23. Ego's defense mechanism "Undoing" is typically seen in: *(PGI 2001, AIIMS 1993, 1995)*
A. Depression
B. Schizophrenia
C. Obsessive compulsive neurosis
D. Hysteria

24. Most important cause of neurotic reaction is the excessive use of: *(DNB 2005, PGI 1998, Nimhans 2001, Mah. 2004)*
A. Projection
B. Regression
C. Suppression
D. Sublimation

25. Displacement reaction is characteristically seen in: *(DNB 1998, MP 1998)*
A. Mania
B. Phobia
C. Conversion disorder
D. Depression

26. Defense mechanism in phobia is: *(DNB NEET 2014-15)*
A. Inhibition
B. Dissociation
C. Distorsion
D. Conversion

27. Defense mechanisms involved in OCD are: *(PGI 2012, PGI 2007)*

A. Repression
B. Undoing
C. Rationalization
D. Sublimation
E. Reaction formation

ANSWERS

1. A.
2. B.
3. A.
4. B.
5. B.
6. C.
7. A. The primary process thinking is a characteristic of unconscious mind. It is illogical and aims for immediate wish fulfilment.
8. A. Psychodynamic (or psychoanalytic) theory stresses that unconscious memories and conflicts are responsible for development of psychiatric disorders. The "conflict" may be between different parts of mind such as id and ego or ego and superego.
9. D. According to psychoanalytic theory, "parapraxis" or "slips of tongue" are believed to reveal unconscious content and hence are believed to have meaning. The description of transference and countertransference given in this question is also correct. The last statement is wrong. In psychoanalysis, unguided communication is believed to have meaning. Unguided communication here refers to the technique of "free association" in which patient speaks all that comes into his mind, without any censoring. The "free association" helps in understanding the unconscious contents of mind and hence is meaningful.
10. C. Sigmund Freud described oedipus complex for both sexes, however that term is mostly associated with male sex now a days.
11. D. *See* text
12. D. *See* text
13. A, B.
    Apart from Sigmund Freud, other big names associated with psychoanalysis include Carl Jung and Alfred Adler. Initially Jung and Adler worked along with Freud, however later they separated and gave their own theories.
14. A. Derailment is a formal thought disorder and not a defense mechanism.
15. C.
16. B. Regression is an immature defense mechanism. Rest all are neurotic defense mechanism.
17. A,D.
    However, if you have to chose, go for repression. It is one of the most important neurotic defense mechanism.
18. A. Repression is the defense mechanism which removes painful memories or unacceptable desires away from the consciousness or awareness.
19. B. Denial is the defense mechanism which helps a person to avoid (or refuse to accept) the reality. Don't get confused by the phrase "negative sensory data".
20. B. Postponing or delaying action on a conscious impulse (a conscious wish) and its accompanying emotions is known as suppression.
21. B. *See* text.
22. C. *See* text.
23. C. Undoing is typically seen in obsessive compulsive disorder.
24. B. Excessive use of regression causes neurotic illnesses.
25. B. Displacement and Inhibition are the defense mechanisms involved in phobia.
26. A.
27. B, E.

Chapter

13 Miscellaneous

ELECTROCONVULSIVE THERAPY (ECT)

The convulsive therapies have long been used for treatment of psychiatric disorders. Initially, intramuscular injections of camphor were used to produce convulsions in patients with psychosis, with good therapeutic results. Later, electricity was used as an agent to induce convulsions and it was called "electroconvulsive therapy."

Types

A. ***Direct ECT***: In this technique, anesthetic agents and muscle relaxants are not used. The generalized convulsions produced can result in **fractures**[Q] or **teeth dislocations**. Due to higher incidence of side effects this technique is rarely used now.

B. ***Modified ECT (Indirect ECT)***: Here, **anesthetic agents and muscle relaxants** are administered before giving ECT. As muscles are relaxed, the risk of bone fractures and other injures from the motor activity during the seizures gets minimized.

Electrode Placement

Various configurations have been developed for electrode placement. These include:

A. *Bilateral ECT*: This is used most commonly and it involves placement of electrodes on both sides of the skull. In bilateral ECTs, various configurations of electrode placement have been devised. The **bifronto-temporal electrode placement** is deployed most commonly. Other commonly used configuration uses **bifrontal electrode placement**.

B. *Unilateral ECTS*: In an attempt to decrease the side effects of ECTs, the unilateral electrode placements have been introduced. The **right unilateral** ECT has been found to have better side effect profile in comparison to the bilateral ECTs and is being increasingly used.

Mechanism of Action

The induction of a bilateral generalized seizure is considered necessary for the beneficial effect of ECTs. Earlier it was considered that the response to ECTs was an "all or none" phenomenon, however of late it has been found that at least in right unilateral ECTs, a dose response relation is present. The mechanism of action of ECTs is still not completely understood. Various hypothesis include changes in the neurotransmitters (especially down regulation of postsynaptic β-adrenergic receptors), changes in growth factors and molecular mechanisms (latest research suggests increase in brain derived neurotrophic factor, **BDNF**[Q] as an important mechanism) and neurogenesis in areas like hippocampus.

Indications

A. *Depression (Major depressive disorder)*: The ECT was initially invented for the treatment of schizophrenia and other psychotic illnesses, however currently it is mostly used for treatment of **depression**[Q]. ECT is effective for depression in both major depressive disorder as well as bipolar disorder. The clearest indication for ECT is depression with **suicide risk**[Q]. The indications of ECT in depression include the following:

- Depression with suicide risk (**ECT is treatment of choice** in **acutely suicidal patients**[Q] due to immediate onset of action)
- **Depression with stupor**[Q]
- Depression with psychotic symptoms (psychotic depression or delusional depression)
- In case of failed medication trials or intolerance to medications.

B. *Manic episode*: Electroconvulsive therapy can be used in the treatment of acute mania, however since effective pharmacotherapy is available for mania, ECT is not the first line treatment. The ECT is used in only those patients who are either intolerant/unresponsive to pharmacotherapy or when mania is so severe that there is a risk of homicide/suicide or danger of physical violence and immediate control of symptoms is required.

C. *Schizophrenia*: Electroconvulsive therapy is the first line treatment in **catatonic schizophrenia**[Q]. It is also effective in other types of schizophrenia however since the advent of antipsychotics, is used only if patient is unresponsive/intolerant to medications. Electroconvulsive therapy is not effective in **chronic schizophrenia**[Q].

D. Other indications where ECT is occasionally used include **intractable seizures**[Q], **neuroleptic malignant syndrome**[Q], delirium, on-off phenomenon of Parkinson's disease, etc.

Adverse Effects

A. *Memory disturbances*: It is the most common side effect of ECT. Both retrograde and anterograde amnesia is seen, however **retrograde amnesia**[Q] is much more common. It is however mild and recovery occurs usually within 1-6 months after treatment.

B. Other side effects include delirium, headache, muscle aches, fractures (very rare with modified ECT), nausea and vomiting.

Contraindications

There are **no absolute contraindications**[Q] of ECT. Earlier raised intracranial tension was considered as an absolute contraindication, however it is now regarded as a relative contraindication. Pregnancy is not a contraindication for ECT. The following are the relative contraindications of ECT:

A. **Raised intracranial tension**[Q] (**space occupying lesion in CNS**[Q])
B. Recent myocardial infarction
C. Severe hypertension
D. Cerebrovascular disease
E. Severe pulmonary disease
F. Retinal detachment.

COGNITIVE DEVELOPMENT STAGES

The thinking process undergoes a series of changes as the child grows up into an adult. **Jean Piaget**[Q], described four stages of development of thinking processes, also known as cognitive developmental stages. These are described below:

A. *Sensorimotor stage (Birth to 2 years)*: This is the first stage. During this stage, child learns through sensory observations and gradually gains control of his motor functions. Initially, the child thinks that if he cannot see an object, it means that the object has ceased to exist. For example, if a rattle with which child is playing, is taken away from the child and is covered, so that the child can no longer see it, the child will think that the rattle no longer exists and will not try to look for it. This type of thinking is also described as **"out of sight, out of mind"**[Q] and **"here and now"**[Q] type of thinking. In the end of the sensorimotor stage the child develops **"object permanence"**, which is the development of the concept that object continue to exist even if they are not visible currently. In the above example, once the child develops object permanence, he will try to search for the rattle by removing the covering cloth as he now knows that the rattle continues to exist though he is not able to see it. Another important development at around 18 months, is a process known as **"symbolization"**. It means that the infants now start developing mental symbols and using words for objects. For example, they make a mental symbol to represent a ball and use a word for it. The development of "object permanence" indicates the transition to the next stage of development i.e. stage of preoperational thought.

B. *Stage of preoperational thought (2–7 years)*: In this stage, use of symbols and language becomes more extensive. The thinking process is characterised by **"intuitive thought"**,[Q] which refers to thinking without use of reasoning and an inability to use logicality.

The children are also **"egocentric"** in this stage which means that they are only concerned about their own needs and cannot think from others perspective.

C. *Stage of concrete operations (7–11 years)*: In this stage, the egocentric thought is replaced by "operational thought" and hence the children start to see things from others perspective also. The thinking is concrete (concrete thinking is the literal thinking. For example, when asked, the meaning of proverb "people who live in glasshouses should not throw stones" the child will say that "if my house is of glass, I should not throw stones as it will break my house". The child is not able to understand the deeper meaning. The logical thinking starts to develop and children are able to understand and follow rules and regulations. Two important developments in this stage are attainment of **"conservation"** and **"reversibility"**. Conservation is the ability to understand that despite changes in shape, the object remains the same. For example, water may be transferred from a cup to a glass, and may appear different in shape, however the amount will remain the same. Reversibility is the capacity to understand that one thing can turn into another and back again, e.g. water and ice.

D. *Stage of formal operations (11 to end of adolescence)*: This stage is characterized by development of **abstract thinking**[Q], which is ability to understand the deeper meaning and deduce the larger meanings. For example, when asked to explain the meaning of phrase "pen is mightier than sword", a child with concrete thinking will say that the pen is heavier and stronger than the sword, whereas a child who has achieved abstract thinking will say that "power of knowledge is stronger than power of brute force". The thinking becomes logical, the child understands the concept of permutation and combination and probability. There is development of "hypothetico deductive thinking". Hypothetico deductive thinking is ability to make hypothesis and use deductive reasoning (ability to deduce, e.g. a child while playing a video game observes that whenever he breaks a banana, apple or cherry, he loses point, and hence is able to deduce that in this game to win he should avoid breaking the fruits).

LEARNING THEORY

Learning is acquiring of new behavioral patterns. The two types of learning are:

A. Classical conditioning
B. Operant conditioning

A. *Classical conditioning*: Classical conditioning (also called respondent conditioning) results from the repeated pairing of a neutral stimulus with one that naturally produces a response. The concepts of classical conditioning emerged from the experiments of Russian physiologist, Ivan Pavlov. The Pavlovian experiment included the following:

Under normal circumstances, a dog would salivate to the smell of food. The ringing of bell would not produce any salivation response. In the experiment, a bell was rung everytime before the presentation of food. The dog ultimately paired the bell with the food. Eventually the ringing of bell alone started to produce salivation, even if no food was presented to the dog. The following are the elements of classical conditioning:

- *Unconditioned stimulus*: It is a stimulus that naturally without any learning, produces a response. For example, smell of food, which produces a response of salivation.
- *Unconditioned response*: It is the natural response to an unconditioned stimulus. For example, salivation is the unconditioned response to smell of food.
- *Conditioned stimulus*: It is a stimulus which when paired with unconditioned stimulus, starts producing a response. For example, ringing of bell usually doesn't produce any response. However, when it is repeatedly paired with food (unconditioned stimulus), it also starts to produce a response.
- *Conditioned response*: The response which results from pairing of conditioned stimulus to the unconditioned stimulus. For example, the salivation which results secondary to ringing of bell is a conditioned response.
- *Extinction*: If the conditioned stimulus (ringing of bell) is presented repeatedly without the unconditioned stimulus (smell of food), the response (salivation) will decrease and eventually disappear. This is called extinction.

- ***Stimulus generalization***[Q]: Here, a conditioned response gets transferred from one stimulus to other. For example, apart from the bell, ringing of a tuning fork also starts resulting in salivation.

B. *Operant conditioning (Instrumental conditioning)*: The principles of operant conditioning were given by BF Skinner. According to this theory, a behavior is determined by its **consequences**[Q] for the individual. Hence, according to this theory any behavior can be learned or unlearned and its frequency can be changed by modifying the consequences of that behavior. If a behavior is followed by pleasant consequence (called reward), that behavior will get reinforced i.e. its frequency will increase. For example, if a child is given a chocolate on studying for a particular amount of time, the frequency of studying will increase. Similarly if the consequence is negative, the frequency of behavior will decrease. For example, if a child is slapped on using a bad word, the frequency of using bad words will decrease.

Types: The frequency of a behavior is increased by positive or negative reinforcement and decreased by punishment or extinction.

Table 1: Types of operant conditioning.

Type	*Effect*	*Example*
Positive reinforcement[Q]	Behavior is increased by a positive consequence (reward)	A child increases his study hours as every study session is rewarded with a chocolate
Negative reinforcement[Q]	Behavior is increased to avoid a negative consequence	A child increases cleaning of his room to avoid scolding by the mother
Punishment[Q]	Behavior is decreased by a negative consequence	A child stops using foul language after getting slapped for the same
Extinction	Behavior is decreased due to lack of reinforcement	An intern who used to work very hard in the ward, becomes inefficient as he was never praised by his seniors.

PSYCHOTHERAPY

Psychotherapy is treatment of psychiatric disorders by using psychological methods. The following are important kinds of psychotherapy:

Behavior Therapy

According to learning theory, the maladaptive behaviors are learned by either classical conditioning or operant conditioning and hence can be unlearnt. A large number of psychiatric disorders can be treated, if the psychiatric symptoms are considered as learned maladaptive behaviors. Behavior therapy is a psychological treatment in which the maladaptive behaviors of patients are changed to improve the quality of life. Behavior therapy is a generic term and is used to describe a variety of specific techniques which intend to remove maladaptive behaviors. The techniques of behavior therapy include.

A. *Systematic desensitisation*: This technique was developed according to the principle of **"reciprocal inhibition"**[Q]. According to this principle if an anxiety provoking stimulus is provided while a person is in a relaxed state, the anxiety gets inhibited. For example, if a person who is phobic to spiders is first made to relax and then is exposed to a spider, he may develop much lesser anxiety. In systematic desensitisation, the patient is first taught relaxation techniques (usually progressive muscle relaxation) and then a hierarchy is made of anxiety provoking stimuli. For example, if a person is afraid of heights, the list may have "standing at the roof of a ten storey building" at the top, "standing on the balcony at second floor" in the middle and "standing on third stair" at the bottom of list. The patient is then exposed (or asked to imagine that exposure) to a series of anxiety provoking stimuli, starting with the least anxiety provoking stimulus while he is also using relaxation techniques. As the patient masters the technique of relaxation in the presence of an anxiety provoking stimuli, he moves up to the next stimulus.

   Systematic desensitization is used in the treatment of **phobias**[Q], **obsessive compulsive disorders**[Q] and certain sexual disorders.

B. *Therapeutic graded exposure or in vivo exposure (or exposure and response prevention)*: It is similar to systematic desensitisation except that no relaxation techniques are used and that real life situations are used. For example, if a patient is afraid of dogs, the exposure will start with looking at a picture of dog, then looking at a video of dog, followed by looking at a dog from a distance and finally holding a dog in arms. The patient learns to get habituated to anxiety (i.e. he

learns that anxiety gradually decreases by itself). It is used in **phobias**[Q] and obsessive-compulsive disorder.

C. *Flooding (Implosion)*: Here, the patient is made to confront the feared situation directly, without any hierarchy, as in systematic desensitisation or graded exposure. No relaxation exercises are used either. The patient is exposed to the feared situation, experiences fear and anxiety which gradually subsides, and the patient is not allowed to escape.
D. *Modeling (Participant modeling)*: Here, therapist himself makes the contact with phobic stimulus and demonstrates this to the patient. Patient learns by imitation and observation. For example, a therapist himself took a dog in his arms while a patient who had phobia of dogs observed him. This technique is used in phobias as well as obsessive compulsive disorders.
E. *Assertiveness training*: Here a person is taught to be assertive while asking for his rights and while refusing unjust demands of others.
F. *Social skills training*: Usually used in patients with schizophrenia, it involves imparting skills required for dealing with others and living a social life.
G. *Aversive conditioning (Aversion therapy)*: It is the clinical use of principles of classical conditioning. It is used for treatment of unwanted behaviors (such as **paraphilias**[Q]). Here, the patient is asked to imagine that he is indulging into an unwanted behavior and immediately a painful stimulus (such as an electric shock) is given. An association gets created between the unwanted behavior and **painful stimuli**[Q] and the unwanted behavior ceases. It is now rarely used due to ethical considerations.

Uses: The various technique of behavior therapy are used primarily in treatment of anxiety disorders (like phobia, panic disorders). Behavior therapy can also be used in depression, dissociative disorders, eating disorders, sexual disorders, personality disorders, substance used disorders and schizophrenia.

Biofeedback

It is a treatment technique that uses the principles of operant conditioning. The biofeedback is based on the idea that autonomic nervous system (which is usually involuntary) can be brought under voluntary control with the help of operant conditioning. It is used for treatment of disorders which are caused by dysfunction in autonomic control such as asthma, tension headaches, arrhythmias, etc. The technique uses a feedback instrument, the choice of which depends on the patients problem. This instrument gives patient a feedback about the current status of a specific autonomic function. For example, an electromyogram (EMG) may be used to give patient feedback about muscle tension in a particular muscle group. When the muscle tension is high, the EMG will emit a higher tone and when muscle tension is low (i.e. when muscle is relaxed), the EMG will emit a lower tone. Using feedback, patient learns to control his muscle tone and hence is able to control symptoms caused by increased muscle tone (e.g. bruxism).

Cognitive Therapy

The cognitive theory assumes that the cognitions (thoughts) are at the core of psychiatric symptoms. On the basis of early experiences, an individual may develop wrong patterns of thinking, known as cognitive distortions (or maladaptive assumptions). For example, a child who was praised when he came first and was scolded when he got second rank, may develop a cognitive distortion that "To be successful it is necessary to get first rank, otherwise I would be considered as a failure". These cognitive distortions (or maladaptive assumptions) give rise to "negative automatic thoughts", which are thoughts with a negative connotation and appear automatically. For example, in the above example, when the child with the above mentioned cognitive distortion has a below expectation performance in the exam, he may start having "negative automatic thoughts" like " I am a failure", "I performed badly in exams, I will perform badly in every other exam" "I will never get a post graduation seat", etc. The cognitive therapy aims to correct these "negative automatic thoughts" and "cognitive distortions". When along with these, behavioral techniques are also used, the therapy method is known as "cognitive behavioral therapy". Cognitive therapy and cognitive behavioral therapy are used in the treatment of depression, panic disorder, obsessive compulsive disorder, personality disorder and somatoform disorder.

Cognitive Distortions: Following is the list of common **cognitive distortions**[Q] (maladaptive assumptions):

A. *All or nothing thinking*: Seeing things in black and white. For example, if I failed to get a particular job, it means that I would never ever get any job.

B. *Approval seeking*: Belief that you should always be liked and loved by others, otherwise life would be terrible.
C. *Disqualifying positive*: It is a tendency of refusal to acknowledge the positive events in life and insisting that they "don't count". For example, a housewife was praised by her husband, however she thought that "he is praising me just to make me feel better, in reality I don't deserve to be praised".
D. *Emotional reasoning*: Belief that your emotions reflect the reality. For example, if I am having a bad feeling about a person, it means that the person in reality is a bad human being even if I have no evidences for the same.
E. *Fallacy of fairness*: Tendency to judge a random negative event as an issue of justice. For example, you missed the flight due to heavy traffic and you believe "life is always unfair to me".
F. *Jumping to conclusions*: Making an interpretation with minimal evidence. For example, a friend did not reply to your message and you made a conclusion that the friend hates you.
G. *Labelling mislabelling*: Giving labels to self or others. For example, if your roommate didn't clean room once, you label him as a "lazy slob".
H. *Magnification (catastrophizing) and minimization*: Focussing on worst possible outcome is maximization and in its extreme form, it is called catastrophizing. For example, if you lose a hundred rupee note and you say that its one of the biggest losses I ever had, its maximization. If you say that now there is nothing left in my life, its catastrophization. Minimization is trying to minimise the importance of events. For example, an alcoholic when criticised about his heavy drinking says that "I don't really drink much, just a peg here and there".
I. *Mental filtering/selective perception*: Picking a single negative detail while ignoring the rest. For example, in a party, everybody gave you a complement for your looks, however a single person said that "have you gained weight" and you give all the importance to that one person's remark and ignore all the praise.
J. *Overgeneralization*: Considering a single negative event and making a general rule out of it. For example, you made a mistake at work and then you start thinking "I always mess up everything". Labelling is an extreme form of overgeneralisation.
K. *Personalization*: Blaming yourself for event, which you are not responsible for. For example, a wife blames herself for her husbands extramarital affair.
L. *Should statements*: Having a lots of rules about how should you and others behave. For example, I should exercise daily, I shouldn't be lazy.

Substance Use Disorder: Psychosocial Treatment

The patients with substance use disorders (and other problematic behaviors) go through a series of changes before quitting the substance use. Various models of these changes have been described, the most acceptable model is known as **transtheoretical model of change**. According to this model, the following are the stages of change:

A. *Precontemplation*: In this stage, the substance user doesn't see any problem in his behavior and doesn't think about quitting.
B. *Contemplation*: In this stage, the substance user starts realising that he has a problem and that he is taking substance excessively. He considers about the **pros and cons**[Q] of stopping substance use. However, he is yet to make any decision.
C. *Preparation*: In this stage, the substance user decides to quit the substance and starts making a plan to quit.
D. *Action*: In this stage, the substance user actually stops taking the substance and makes changes in his behaviors (e.g. he stops meeting with the friends who use drugs in an attempt to keep away himself from drugs), starts taking treatment.
E. *Maintenance*: In this stage, the patient continues to stay away from substances (drugs) and continues with the treatment and other behaviors to prevent relapse.

A patient may remain in maintenance stage or may relapse if he starts taking substance again. Usually, a patient has few relapses before attaining complete abstinence (freedom) from substance.

Various psychological treatment methods have been devised to help patient quit substance use and move from stages of precontemplation to maintenance. One of the most commonly used technique which focuses on increasing the motivation of the patient to quit substance is known as **motivation enhancement therapy** or **motivational interviewing**.

Once the patient has reached maintenance stage, relapse prevention techniques are used to prevent any relapses (return to previous pattern of substance intake).

PSYCHOSURGERY

The surgical techniques for treatment of psychiatric disorder are rarely used and are reserved for only the chronic and severe cases which have not responded to all other methods of treatment. The psychosurgeries involve creating a lesion in the limbic system or its connecting fibres (limbic system is considered to be responsible for normal and abnormal emotional reactions). The lesions are now a days produced with precision using stereotactic methods. The following are the commonly used psychosurgeries.

A. *Stereotactic subcaudate tractotomy*: It produces a subcaudate lesion and is used in chronic, severe and intractable cases of depression, obsessive compulsive disorder and schizoaffective disorder.
B. *Stereotactic limbic leucotomy*: Small lesion is made in subcaudate and also a lesion is made in cingulate bundle. It is used in treatment of chronic, severe and intractable obsessive compulsive disorder and schizophrenia.
C. *Amygdalotomy*: A lesion is made in amygdala in patients with severe, uncontrolled aggression.

NEUROPSYCHOLOGICAL TESTS

Neuropsychology is a brach of psychology which examines the relationship between the behavior and brain functioning. It tries to locate the areas of disturbances in brain, on the basis of behavioral symptoms (including cognitive, sensory, motor and emotional symptoms). Neuropsychological tests are used extensively for various purposes. Few of them have been discussed below:

A. Neuropsychological assessment of intelligence and personality:
   - *Intelligence testing*: The simplest way of measuring intelligence is in terms of Intelligence Quotient, IQ IQ = MA/CA × 100, MA is the mental age and CA is the chronological age, In this formula, the maximum chronological age can be 15.

     Now, much better and precise tests have been devised that measure the intelligence, few commonly used tests include:
     a. **Wechsler adult intelligence scale**[Q]
     b. Malin's intelligence scale for Indian children (MISIC)
     c. Bhatia's battery of performance tests of intelligence.
   - *Personality assessment*: The personality assessment can be done using two types of test:
     a. *Objective test*: These are standardized tests which give numerical scores and can be analyzed using standard result tables. For example, Minnesota Multiphasic Personality Inventory (MMPI).
     b. *Projective tests*: In these tests, patients are provided with ambiguous stimuli (unclear stimuli) and it is believed that the patient's response to such unclear stimulus reflects his internal thought processes and emotional factors. The patient "projects" his internal situation on to the test question and finally an expert analyses the patients answers and deduces the aspects of patients personality. The projective tests include:
        - ***Rorschach test***[Q]: The patient is shown ten cards which have inkblots and is asked what he sees in the card.
        - ***Thematic apperception test (TAT)***[Q]: Here patients are shown certain pictures and asked to make stories about them
        - ***Sentence completion test***[Q]: Here patients are given incomplete sentences and are asked to complete them. For example, a sentence may be like "I wish I ....."
        - ***Word association technique***: Here the examiner says a word and patient has to respond with the first word that comes in to his mind.
        - ***Draw a person test (DAPT)***: Here patient is asked to draw a person and then specific questions are asked about what he drew.

B. *Neuropsychological assessment for brain disorders or organic mental disorders*: Several tests have been devised which extensively measure a wide range of cognitive functions like memory, motor functions, sensory functions, problem solving, reading, writing, arithmetic, etc. Few such important tests include:
   - Luria Nebraska Neuropsychological battery
   - **Halstead Reitan battery of neuropsychological tests**[Q]
   - ***Bender Gestalt Test***[Q] *(Bender visual motor gestalt test)*: This test is used mostly as a screening tool for organic brain disorders.

QUESTIONS AND ANSWERS

QUESTIONS

ECT

1. **Indications for ECT is/are:** *(PGI May 2010)*
   A. Psychotic depression
   B. Catatonic schizophrenia
   C. Cyclothymia
   D. Dysthymia
   E. Post traumatic stress disorder

2. **Best marker for electroconvulsive therapy:**
   A. CSF 5 HIAA *(AIIMS Nov 2008)*
   B. CSF serotonin
   C. Brain derived growth factor
   D. CSF dopamine

3. **ECT is currently indicated as a line of treatment in the following conditions *except*:** *(UPSC 2008)*
   A. Catatonic schizophrenia
   B. Severe depression with psychosis
   C. Manic-depressive psychosis
   D. Obsessive compulsive disorder

4. **ECT is indicated in:** *(AIIMS 1998)*
   A. Neurotic depression
   B. Auditory hallucination
   C. Chronic Schizophrenia
   D. Delusional depression

5. **ECT is not useful in treatment of:**
   A. Chronic schizophrenia *(AI 1993, DNB 1994)*
   B. Catatonic schizophrenia
   C. Endogenous depression
   D. Acute psychosis

6. **ECT in depressive phase of MDP is useful because it:** *(PGI 1999)*
   A. Produces recurrence
   B. Reduces recurrence
   C. Shortens duration
   D. Increases drug effects

7. **All of the following are indications for ECT *except*:**
   A. Intractable seizures *(DNB NEET 2014-15)*
   B. Depressive stupor
   C. Neuroleptic malignant syndrome
   D. Acute anxiety

8. **Absolute contraindication to ECT is:** *(AIIMS 1995)*
   A. Glaucoma B. Brain tumor
   C. Aortic aneurism D. MI

9. **ECT is absolutely contraindicated in:**
   A. Pregnancy *(AI 1992, DNB 1995)*
   B. Very ill patient
   C. Raised intracranial tension
   D. Severe heart disease

10. **Most common complication of ECT is:**
    A. Anterograde amnesia *(AIIMS 1996)*
    B. Retrograde amnesia
    C. Psychosis
    D. Depression

11. **Memory disturbance of ECT recovers in:**
    A. Few days to few weeks *(AIIMS 1996)*
    B. Few weeks to few months
    C. Few months to few year
    D. Permanent

12. **Most common complication of modified ECT:** *(AIIMS 1991, AI 2, DNB 1997)*
    A. Intracerebral bleed
    B. Fracture spine
    C. Body ache
    D. Amnesia

13. **True about ECT is:** *(PGI May 2012, AIIMS 2011)*
    A. It is not a treatment for dysthymic disorder
    B. Used to treat complex partial seizures
    C. Used for those major depressive patients not responding to medication
    D. Memory impairment is a side effect
    E. Effective in OCD

Names

14. **Who introduced cocaine in psychiatry:** *(Kerala 1998, DNB 1992)*
    A. Freud B. Jung
    C. Miller D. Stanley

15. Moral treatment of mentally ill-patient was first stressed by: *(AIIMS 1995, CMC 1998, DNB 2001, TN 2004)*
A. Pinel B. Morel
C. Kraepelin D. Sigmund Freud

16. The eight stage classification of human life is proposed by: *(DNB 2K, WB 2004, UP 2005)*
A. Sigmund Freud B. Pavel
C. Strauss D. Erikson

17. Which of the following scientist propagated 'therapeutic community concept: *(Karnataka 2K, DNB 2003)*
A. JB Watson B. Maxwell Jones
C. Freud D. Adler

Cognitive Development Stages

18. Which of the following is a stage of intuitive thought appearance in Jean-Piaget scheme: *(PGI 1999)*
A. Sensorimotor
B. Concrete
C. Preoperational stage
D. Formal operations stage

19. Ability to form a concept and generalize is known as: *(JIPMER 2011)*
A. Concrete thinking
B. Abstract thinking
C. Intellectual thinking
D. Delusional thinking

20. In Piaget's theory of cognitive development 'out of sight, out of mind' and 'here and now' is seen in the stage of: *(AIIMS 2013)*
A. Sensorimotor stage
B. Preoperational stage
C. Concrete operational stage
D. Formal operational stage

Learning Theory and Psychotherapy

21. Pavlov's experiment is an example of: *(AI 2006)*
A. Operant conditioning
B. Classical conditioning
C. Learned helplessness
D. Modeling

22. 'Reinforcement' is used in: *(AIIMS 1994, 1999)*
A. Psychoanalysis
B. Hypnosis
C. Abreaction
D. Conditioned learning

23. Behavior therapy to change maladaptive behavior using response as reinforcer uses the principles of: *(AI 2003)*
A. Classical conditioning
B. Modeling
C. Social learning
D. Operant conditioning

24. Many of our bad habits of day to day life can be removed by: *(AIIMS Nov 2004)*
A. Positive conditioning
B. Negative conditioning
C. Bio feed back
D. Generalization

25. Operant conditioning in which pain stimulus are given to a child for decreasing a certain undesired behavior can be classified as: *(AI 2010, 1997)*
A. Positive reinforcement
B. Negative reinforcement
C. Punishment
D. Negotiation

26. A child is not eating vegetables. His mother starts giving a chocolate each time he finishes vegetables in the diet. The condition is: *(AIIMS Nov 2012)*
A. Operant conditioning
B. Classical conditioning
C. Social training
D. Negative reinforcement

27. Patient of contamination phobia was asked by therapist to follow behind him and touch everything he touches. During process therapist kept talking quietly and calmly to the patients. The patient was asked to repeat the procedure twice daily. The procedure is: *(AIIMS May 2010)*
A. Flooding B. Modeling
C. Positive reinforcement D. Aversion therapy

28. Therapeutic exposure is a form of: *(MH 2011)*
A. Behavior therapy B. Psychoanalysis
C. Cognitive therapy D. Supportive therapy

29. Reciprocal inhibition is done by: *(SGPGI 2000)*
A. Systematic desensitisation
B. Flooding
C. Exposure and response prevention
D. Psychoanalysis

30. Along a pleasant stimulus,a noxious stimuli is given in treatment of alcohol dependence and paraphilias. This is an example for which kind of behavior therapy: *(MH 2008)*
A. Negative reinforcement B. Aversive therapy
C. Punishment D. Fooding

31. Behavior therapy is useful in: *(PGI June 2008)*
A. Psychosis B. OCD
C. Personality disorder D. Panic attack
E. Anxiety disorders

32. A patient can be taught to control his involuntary physiological responses by which of the following therapies: *(MH 2009)*
A. Breathing exercise
B. Stress modification
C. Biofeedback
D. Rational emotive therapy

33. Tics, hair pulling, nail biting can be treated by: *(DNB December 2011)*
A. Mind fullness
B. Social habit training
C. Habit reversal training
D. No intervention required

34. Which of the following is not a cognitive error/ dysfunction? *(AI 2010)*
A. Catastrophic thinking B. Arbitrary inference
C. Overgeneralization D. Thought block

35. Typically changes in problem behavior shows how many stages: *(DNB NEET 2014-15)*
A. 2 B. 3
C. 4 D. 5

36. All of the following are parts of cognitive behavior change technique *except*: *(AI 2010)*
A. Precontemplation B. Consolidation
C. Action D. Contemplation

37. A chronic smoker taking 20 cigarettes per day has developed chronic cough. His family suggested quitting cigarettes. He is ready to quit and thinks about quitting but is reluctant to do so because he is worried that quitting will make him irritable. Which of the following option best describes the stage of behavior change: *(AI 2011)*
A. Precontemplation and preparation
B. Contemplation and cost factor
C. Contemplation and sickness susceptibility
D. Belief

38. A smoker is worried about the side effects of smoking. But he does not stop smoking thinking that he smokes less as compared to others and takes a good diet. This thinking is called as: *(AIIMS May 2015)*
A. Self-exemption B. Cognitive error
C. Self-protection D. Distortion

Neuropsychological Tests

39. A Study comparing the behavioral and developmental changes in a normal brain with a damaged brain is: *(AIIMS 2013)*
A. Neuropsychology
B. Neurodevelopmental psychology
C. Child psychology
D. Criminal psychology

40. Rorschach inkblot test is: *(BIHAR 2003)*
A. Projective B. Subjective
C. Both D. None of the above

41. Best test for diagnosis of organic mental disorder:
A. Sentence completion test *(AI 2000)*
B. Bender gestalt test
C. Rorschach test
D. Thematic appreciation test

42. Rorschach test measures: *(PGI 1999)*
A. Intelligence B. Creativity
C. Personality D. Neuroticism

43. Signs of organic brain damage are evident on:
A. Bender-Gestalt test *(AI 2004)*
B. Rorschach test
C. Sentence completion test
D. Thematic apperception test

44. Halstead Reitan battery involves all *except*:
A. Finger oscillation
B. Constructional praxis

C. Rhytm
D. Tactual performance

Miscellaneous

45. A person laughs to a joke, and then suddenly loses tone of all his muscles. Most probable diagnosis of this condition is: *(DNB Dec 2009)*
A. Cataplexy B. Catalepsy
C. Cathexis D. Cachexia

46. Hypomimia is: *(DNB NEET 2014-15)*
A. Decreased ability to copy
B. Decreased execution
C. Deficit of expression by gesture
D. Deficit of fluent speech

47. Deja vu is seen in: *(Kerala 1994)*
A. Temporal lobe epilepsy
B. Normal person
C. Psychosis
D. All of the above

48. Unfamiliarity of familiar things is seen in: *(Kerala 1999, JIPMER 2002) (Karnataka 1994)*
A. Deja vu B. Jamais vu
C. Deja entendu D. Deja pence

49. Patient wanting to scratch for itching in his amputated limb is an example of:
A. Illusion *(DNB NEET 2014-15)*
B. Pseudohallucination
C. Phantom limb hallucination
D. Autoscopic hallucination

50. All of the following are true about pseudohallucinations *except*: *(DNB NEET 2014-15)*
A. It arises in inner subjective self
B. Patient describes that the sensations are being perceived by "mind's eye"
C. They are under voluntary control
D. Distressing flashbacks of PTSD is an example

51. Catatonia is most commonly seen with:
A. Schizophrenia *(DNB NEET 2014-15)*
B. Depression
C. Anxiety disorder
D. Obsessive compulsive disorder

52. Catatonic features are seen in schizophrenia, they are also seen in: *(PGI Jun 2008)*
A. Severe depression
B. Conversion disorder
C. Personality disorder
D. Somatization disorder

53. Serial 7 subtraction is used to test: *(DNB NEET 2014-15)*
A. Working memory B. Long-term memory
C. Mathematical ability D. Recall power

54. Erotomania is seen in: *(DNB NEET 2014-15)*
A. Schizophrenia B. Mania
C. Neurosis D. OCD

55. Highest level of insight is: *(DNB NEET 2014-15)*
A. Intellectual B. Emotional
C. Psychological D. Affective

56. Which category of ICD is associated with mood disorders: *(DNB NEET 2014-15)*
A. F 10-19 B. F 20-29
C. F 30-39 D. F 40-49

57. Which category of ICD is associated with schizophrenia? *(DNB NEET 2014-15)*
A. F 10-19 B. F 20-29
C. F 30-39 D. F 40-49

58. DSM-IV classification of psychiatric disorder as proposed by American Psychiatric Association classifies and helps in diagnosing patients on multiple axes. Of these, axis V represents the degree of: *(MH 2009)*
A. Present state of symptoms
B. Comorbid medical condition
C. Global assessment of function
D. Comorbid psychological problem

59. When information memorized afterwards is interfered by the information learnt earlier, it is called:
A. Retroactive inhibition *(AIIMS May 2004)*
B. Proactive inhibition
C. Simple inhibition
D. Inhibition

60. Methods of learning in psychiatry are all *except*: *(AIIMS Nov 2007)*
A. Modelling B. Catharsis
C. Exposure D. Responseprevention

61. According to Disabilities Act,1995, the seventh disability is usually referred to as? *(AIIMS Nov 2008)*

A. Neurological abnormality
B. Mental illness
C. Substance abuse
D. Disability due to road traffic accident

62. Patients suffering from which of the following disease as per ICD/DSM criteria are eligible for disability benefit as per National Trust Act? *(AI 2009)*

A. Schizophrenia
B. Bipolar disorder
C. Dementia
D. Mental retardation

63. Consultation—liaison (C-L) psychiatry involves diagnosing: *(MAHE 2006, SGPGI 2004)*

A. Psychiatric illness in medically ill
B. Medical illness in psychiatric patients
C. Suicidal tendency in psychiatric patients
D. Suicidal tendency in medically ill

ANSWERS

ECT

1. A,B.
   See text.
2. C. Latest research suggests that increase in brain derived neurotrophic factor, BDNF mediates the response to ECT and is the best marker for the same.
3. D. ECT is rarely used in the treatment of OCD.
4. D. Delusional depression or psychotic depression is an indication for ECT.
5. A. Electroconvulsive therapy is not effective in chronic schizophrenia.
6. C. ECT shortens the duration of depressive episode. It doesn't prevent the recurrence unless given as a maintenance treatment.
7. D. ECT is occasionally used in intractable seizures, neuroleptic malignant syndrome, delirium, on-off phenomenon of Parkinson's disease. Acute anxiety is not an indication.
8. B. There are no absolute contraindications for ECT. Earlier, raised intracranial tension and space occupying lesions were considered as absolute contraindications, hence the best answer here is brain tumor.
9. C. Again, the best answer is raised intracranial tension.
10. B. Amnesia is the most common side effect of ECT. Both retrograde and anterograde amnesia are seen, however retrograde amnesia is much more common.
11. B. Amnesia caused by ECT is mild and recovery occurs usually within 1-6 months after treatment.
12. D.
13. A,C,D.

Names

14. A. Sigmund Freud studied about the effects of cocaine. It is also believed that he was addicted to cocaine for a long period.
15. A. Moral treatment of mentally ill patients using humane methods was first stressed by Pinel.
16. D. Erik Erikson divided the human life into eight stages, known as Erikson's psychosocial stages.
17. B. Therapeutic community is a group based approach for treatment of substance use disorders and other psychiatric disorders. It is a residential approach where in patients live in a house for long-term and have defined roles during the stay. The term "therapeutic community" was given by Thomas Main and the concept was developed by Maxwell Jones.

Cognitive Development Stages

18. C. Intuitive thinking is seen in stage of preoperational thought.
19. B. Abstract thinking is the ability to make concepts (i.e. ability to grasp essential of whole) and to generalise.
20. A. See text.

Learning Theory and Psychotherapy

21. B.
22. D.
23. D. Use of rewards as a reinforcer (in positive reinforcement) is a technique of operant conditioning.
24. B. Negative conditioning is used to decrease the frequency of a particular behavior.
25. C. Punishment is decrease in frequency of a behavior due to unpleasant consequences.
26. A. This is an example of positive reinforcement, a type of operant conditioning.

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27. B. This is an example of participant modeling in which patient learns by observation and imitation of therapist.
28. A.
29. A. The principle of reciprocal inhibition is used in the technique of systematic desensitisation.
30. B. Aversive therapy.
31. A,B,C,D,E.
    Behavioral therapy is primarily used in treatment of anxiety disorders (including panic disorder), obsessive compulsive disorder. It is also useful in personality disorders. Though, in psychotic disorders like schizophrenia, behavioral therapy is not the first line treatment, however it can be used.
32. C.
33. C Habit reversal training is a kind of behavioral therapy which is used in the management of tics, trichotillomania, nail biting. skin picking and other similar disorders. The technique involves getting aware of the urge that precedes tics and other impulsive behaviors and developing an alternative response.
34. D. Thought block is not a cognitive error.
35. D According to the transtheoretical model, there are 5 stages of change in substance use and other problem behaviors.
36. B. Consolidation is not a stage of change.
37. C. In this question, patient is considering quitting and thinking about the pros and cons of it. This is characteristic of stage of contemplation.
38. A. Self-exemption refers to the beliefs that give smokers false reassurances and allow them to avoid thinking deeply about the importance of quitting.

Neuropsychological Tests

39. A. See text.
40. A. Rorschach inkblot test is a projective test.
41. B. See text.
42. C. Personality.
43. A.
44. B. Constructional praxis is not a part of halstead reitan battery.

Miscellaneous

45. A.
46. C. Hypomimia refers to decrease in facial expressions, usually seen in parkinsonism.
47. D. Deja vu refers to the feeling that an event which is being currently experienced has also happened in the past. It can be seen in normal persons and also in certain disorders like temporal lobe epilepsy.
48. B. Jamais vu refers to the feeling of unfamiliarity for familiar things.
49. C. Phantom limb is the experiencing of sensations in an amputated limb.
50. C. Pseudohallucinations are not under voluntary control.
51. B. Catatonia is most commonly seen in mania followed by depression and than schizophrenia.
52. A.
53. A. Serial 7 subtraction test, in which the patient is asked to serially subtract 7 from 100 is a test for working memory.
54. A. Erotomania or delusion of love is most commonly seen in schizophrenia and delusional disorder.
55. B. Emotional insight is the highest level of insight. In emotional insight, the patient is aware of the illness and also changes his behavior accordingly. Intellectual insight is next to emotional insight in the hierarchy of insight. In intellectual insight, the patient is aware that he has illness, however he doesn't change his behavior in any manner based on this knowledge.
56. C. The fifth chapter of ICD-10 classifies psychiatric disorders. The chapter has been further sub divided into blocks as described below:
    F00-F09: Organic, including symptomatic, mental disorders
    F10-F19: Mental and behavioral disorders due to psychoactive substance use
    F20-F29: Schizophrenia, schizotypal and delusional disorders
    F30-F39: Mood (affective) disorders
    F40-F48: Neurotic, stress-related and somatoform disorders
    F50-F59: Behavioral syndromes associated with physio-logical disturbances and physical factors
    F60-F69: Disorders of adult personality and behavior
    F70-F79: Mental retardation
    F80-F89: Disorders of psychological development
    F90-F98: Behavioral and emotional disorders with onset usually occurring in childhood and adolescence
    F99-F99: Unspecified mental disorder.

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57. B.
58. C. In DSM-IV, a multiaxial system was used while making the diagnosis. The diagnosis was described in the following five axes:
Axis I: Clinical syndromes/Disorders (psychiatric disorder)
Axis II: Personality disorders/Mental retardation
Axis III: Medical conditions
Axis IV: Psychosocial and environmental stressors
Axis V: Global assessment of functioning
In DSM-5, the multiaxial system has been removed. The former axis I, II and III have been combined and for the last two, separate notations are being used.
59. B. The tendency of previously learned information to hinder subsequent learning is known as proactive inhibition.
60. B. Catharsis is not a method of learning. The term "catharsis" is used to denote the process of release of pent-up emotions (emotional outlet).
61. B. According to persons with disability Act, 1995; the sixth disability is mental retardation and seventh disability is mental illnesses.
62. D. The National Trust Act is applicable for autism, cerebral palsy, mental retardation and multiple disabilities.
63. A. Consultation liaison psychiatry is the speciality of psychiatry which deals with the psychiatric illnesses in medically ill patients.

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