



KMC 2024, BLOCK-J SOLVED

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Question 1

A 30-year-old man with a history of panic attacks came to OPD with symptoms of palpitations, sweating, and dryness of mouth that didn't improve with psychotherapy. Which of the following drugs is most suitable to treat his panic disorder?

- A. Carbamazepine
- B. Escitalopram
- C. Haloperidol
- D. Thiopentone
- E. Phenezine

Correct Answer: B. Escitalopram

Explanation:

- **A. Carbamazepine:** Incorrect. While carbamazepine is effective in managing certain mood disorders, particularly bipolar disorder, it is not a first-line treatment for panic disorder.
- **B. Escitalopram:** Correct. Selective serotonin reuptake inhibitors (SSRIs), such as escitalopram, are considered first-line treatment for panic disorder. They modulate serotonin levels, alleviating symptoms of anxiety and panic attacks.
- **C. Haloperidol:** Incorrect. Haloperidol is an antipsychotic used for psychotic disorders, not for panic disorders.
- **D. Thiopentone:** Incorrect. Thiopentone is a barbiturate used for induction of anesthesia and has no role in the chronic treatment of panic disorder.
- **E. Phenezine:** Incorrect. Phenezine, a monoamine oxidase inhibitor (MAOI), is rarely used due to its side effect profile and dietary restrictions. SSRIs are preferred.

Question 2

A 52-year-old man was shifted to the operation theatre for a fracture of the femur head. To reduce anxiety of the patient, the anesthetist injected which of the following drugs along with general anesthetic?

- A. Midazolam
- B. Haloperidol

- C. Diazepam
- D. Phenobarbitone
- E. Atropine

Correct Answer: A. Midazolam

Explanation:

- **A. Midazolam:** Correct. Midazolam is a short-acting benzodiazepine commonly used for preoperative sedation and anxiety relief due to its rapid onset and amnestic effects.
- **B. Haloperidol:** Incorrect. Haloperidol is an antipsychotic used for treating psychosis and agitation, not preoperative anxiety or sedation.
- **C. Diazepam:** Incorrect. Although diazepam is a benzodiazepine, it is long-acting and less preferred for rapid, short-term preoperative use compared to midazolam.
- **D. Phenobarbitone:** Incorrect. Phenobarbitone is a barbiturate that is less commonly used due to its slower onset and side effects.
- **E. Atropine:** Incorrect. Atropine is an anticholinergic used to reduce secretions or prevent bradycardia during anesthesia but is not used for anxiety reduction.

Question 3

A 35-year-old female presented to the emergency department with tonic-clonic seizures. The nurse on duty gives her diazepam intravenously to control seizures. What is the most possible mechanism of action of diazepam?

- A. Closure of chloride channel
- B. Closure of sodium channel
- C. Closure of calcium channel
- D. Membrane depolarization
- E. Membrane hyperpolarization

Correct Answer: E. Membrane hyperpolarization

Explanation:

- **A. Closure of chloride channel:** Incorrect. Diazepam enhances the opening of chloride channels via GABA-A receptor stimulation, leading to hyperpolarization.
- **B. Closure of sodium channel:** Incorrect. Sodium channel blockers (e.g., phenytoin, carbamazepine) are used for seizures but are not the mechanism of diazepam.
- **C. Closure of calcium channel:** Incorrect. Calcium channel blockers are used in certain conditions but do not explain the effect of diazepam.
- **D. Membrane depolarization:** Incorrect. Diazepam causes hyperpolarization, not depolarization.

- **E. Membrane hyperpolarization:** Correct. Diazepam enhances GABA-A receptor activity, increasing chloride influx and causing membrane hyperpolarization, which reduces neuronal excitability.

Question 4

A 28-year-old man was brought unconscious to the emergency department who had an accidental overdose of clonazepam tablets. Which of the following drugs is used as an antidote for this toxicity?

- **A. Acetylcysteine**
- **B. Atropine**
- **C. Naloxone**
- **D. Flumazenil**
- **E. Dabigatran**

Correct Answer: D. Flumazenil

Explanation:

- **A. Acetylcysteine:** Incorrect. Acetylcysteine is the antidote for acetaminophen (paracetamol) toxicity, not benzodiazepine overdose.
- **B. Atropine:** Incorrect. Atropine is an antidote for organophosphate poisoning and bradycardia, not benzodiazepine toxicity.
- **C. Naloxone:** Incorrect. Naloxone is an opioid antagonist used for opioid overdose, not benzodiazepine toxicity.
- **D. Flumazenil:** Correct. Flumazenil is a specific benzodiazepine receptor antagonist used to reverse the sedative effects of benzodiazepines like clonazepam.
- **E. Dabigatran:** Incorrect. Dabigatran is an anticoagulant, not an antidote for any toxicity.

Question 5

A 25-year-old female comes for her first antenatal visit at the 5th week of gestation. She tells her doctor that she is taking Paroxetine for depression for the past one month. Which of the following fetal complications is associated with its use?

- **A. Abortion**
- **B. Cardiac malformations**
- **C. Growth retardation**
- **D. Prematurity**
- **E. Stillbirth**

Correct Answer: B. Cardiac malformations

Explanation:

- **A. Abortion:** Incorrect. While SSRIs are associated with a slight risk of spontaneous abortion, this is not the most specific or well-documented adverse fetal effect of paroxetine.
- **B. Cardiac malformations:** Correct. Paroxetine, an SSRI, is associated with an increased risk of congenital cardiac malformations, particularly atrial and ventricular septal defects, when used in early pregnancy.
- **C. Growth retardation:** Incorrect. SSRIs are not specifically associated with intrauterine growth restriction as a primary complication.
- **D. Prematurity:** Incorrect. Although there is some evidence linking SSRIs to preterm labor, cardiac malformations are more strongly associated.
- **E. Stillbirth:** Incorrect. SSRI use does not significantly increase the risk of stillbirth compared to untreated depression.

Question 6

A 33-year-old female was brought to the hospital for acute change in mental status noticed by her husband. He reports that she has been taking a drug for schizophrenia for the past one year. On examination, the woman is diaphoretic, with some rigidity of her extremities. Her BP is 198/109. Temperature is 101°F. Blood analyses show grossly elevated creatine kinase. Which of the following would be appropriate treatment for this patient?

- **A. Escitalopram**
- **B. Chlorpromazine**
- **C. Dantrolene**
- **D. Fluoxetine**
- **E. Haloperidol**

Correct Answer: C. Dantrolene

Explanation:

- **A. Escitalopram:** Incorrect. This is an SSRI used to treat depression and anxiety. It has no role in treating neuroleptic malignant syndrome (NMS), which is suspected in this case.
 - **B. Chlorpromazine:** Incorrect. Chlorpromazine is an antipsychotic that could exacerbate NMS by acting as a dopamine antagonist.
 - **C. Dantrolene:** Correct. Dantrolene, a muscle relaxant, is used to treat NMS by reducing muscle rigidity and hypermetabolism.
 - **D. Fluoxetine:** Incorrect. This is an SSRI and not relevant for treating NMS.
 - **E. Haloperidol:** Incorrect. Haloperidol is an antipsychotic and a likely culprit in causing NMS. It should be discontinued.
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Question 7

A 38-year-old male patient of epilepsy visits his physician for routine check-up. His seizures are well-controlled by using a drug which acts by blocking sodium channels and modulation of NMDA receptors. Which one of the following drugs acts through this mechanism?

- **A. Carbamazepine**
- **B. Gabapentin**
- **C. Lamotrigine**
- **D. Phenytoin**
- **E. Sodium valproate**

Correct Answer: E. Sodium valproate

Explanation:

- **A. Carbamazepine:** Incorrect. While carbamazepine blocks sodium channels, it does not significantly modulate NMDA receptors.
- **B. Gabapentin:** Incorrect. Gabapentin primarily acts by modulating calcium channels, not sodium channels or NMDA receptors.
- **C. Lamotrigine:** Incorrect. Lamotrigine primarily blocks sodium channels but does not significantly affect NMDA receptors.
- **D. Phenytoin:** Incorrect. Phenytoin is a sodium channel blocker, but it does not modulate NMDA receptors.
- **E. Sodium valproate:** Correct. Sodium valproate works by blocking sodium channels and modulating NMDA receptor activity, making it effective for multiple types of seizures.

Question 8

A 5-year-old girl is brought to OPD because of episodic "blinking out," which began one month ago. The patient has episodes in which she abruptly stops all activities, remains motionless with occasional fumbling hand movement for about 10 seconds, followed by a rapid return to full consciousness. Which of the following is the drug of choice to treat this condition?

- **A. Carbamazepine**
- **B. Ethosuximide**
- **C. Gabapentin**
- **D. Levetiracetam**
- **E. Phenytoin**

Correct Answer: B. Ethosuximide

Explanation:

- **A. Carbamazepine:** Incorrect. Carbamazepine can worsen absence seizures and is not effective for this condition.
- **B. Ethosuximide:** Correct. Ethosuximide is the drug of choice for absence seizures, which are characterized by episodes of blank staring and motionlessness with rapid recovery.
- **C. Gabapentin:** Incorrect. Gabapentin is used for focal seizures but is not effective for absence seizures.
- **D. Levetiracetam:** Incorrect. Although levetiracetam is used for generalized and focal seizures, ethosuximide is specifically preferred for absence seizures.
- **E. Phenytoin:** Incorrect. Phenytoin is used for generalized tonic-clonic seizures but is ineffective for absence seizures.

Question 9

A 67-year-old woman with a history of classic angina pectoris is seeking treatment for migraine headaches of moderate intensity. Which of the following drugs is contraindicated for treating migraine in this patient?

- **A. Acetaminophen**
- **B. Aspirin**
- **C. Naproxen**
- **D. Propranolol**
- **E. Sumatriptan**

Correct Answer: E. Sumatriptan

Explanation:

- **A. Acetaminophen:** Incorrect. Acetaminophen is a safe option for mild to moderate pain, including migraines, and is not contraindicated in patients with angina pectoris.
- **B. Aspirin:** Incorrect. Aspirin, while primarily used as an antiplatelet in cardiovascular disease, can be used for migraine pain relief and does not exacerbate angina.
- **C. Naproxen:** Incorrect. Naproxen is a nonsteroidal anti-inflammatory drug (NSAID) and can safely be used for migraine management. It has no contraindication in patients with angina.
- **D. Propranolol:** Incorrect. Propranolol, a beta-blocker, is actually used prophylactically for migraines and is also beneficial for angina management. It is not contraindicated.
- **E. Sumatriptan:** Correct. Sumatriptan, a serotonin (5-HT_{1B/1D}) agonist, causes vasoconstriction of cranial vessels, which can exacerbate angina and is contraindicated in patients with coronary artery disease or a history of angina.

Question 10

A 5-year-old child is admitted to the hospital with low-grade fever and a persistent cough that has resulted in vomiting episodes. After a few days, his fever has resolved, and all that is left is a slight cough. He is discharged from the hospital by the pediatrician, who recommends an over-the-counter opioid antitussive. Which of the following did he recommend?

- **A. Dextromethorphan**
- **B. Loperamide**
- **C. Naloxone**
- **D. Morphine**
- **E. Tramadol**

Correct Answer: A. Dextromethorphan

Explanation:

- **A. Dextromethorphan:** Correct. Dextromethorphan is a commonly used over-the-counter antitussive (cough suppressant). It acts on the medullary cough center to reduce coughing without causing significant respiratory depression.
- **B. Loperamide:** Incorrect. Loperamide is an opioid that acts on intestinal opioid receptors to manage diarrhea, not coughing.
- **C. Naloxone:** Incorrect. Naloxone is an opioid antagonist used to reverse opioid overdose; it has no role in managing a cough.
- **D. Morphine:** Incorrect. Morphine is a strong opioid used for severe pain and is not recommended as an antitussive due to its risk of sedation and respiratory depression.
- **E. Tramadol:** Incorrect. While tramadol is an analgesic with some cough suppressant properties, it is not used in children due to its risk of respiratory depression and other adverse effects.

Question 11

A 60-year-old patient is brought to the emergency room at 4:00 PM by his friend after a road accident. He has multiple fractures, and the surgeon decided to perform surgery. Which of the following is a potent analgesic but a weak anesthetic drug?

- **A. Benzodiazepine**
- **B. Halothane**
- **C. Ketamine**
- **D. Nitrous oxide**
- **E. Thiopental**

Correct Answer: D. Nitrous oxide

Explanation:

- **A. Benzodiazepine:** Incorrect. Benzodiazepines (e.g., midazolam) are anxiolytics and sedatives but are not potent analgesics or anesthetics.
- **B. Halothane:** Incorrect. Halothane is a potent inhalational anesthetic but is not known for analgesic properties.

- **C. Ketamine:** Incorrect. Ketamine is a potent anesthetic and analgesic; however, the question specifies a weak anesthetic, which does not apply to ketamine.
- **D. Nitrous oxide:** Correct. Nitrous oxide is a weak anesthetic but provides significant analgesia, making it suitable for minor procedures or as an adjunct during general anesthesia.
- **E. Thiopental:** Incorrect. Thiopental is a barbiturate used for induction of anesthesia but has no significant analgesic properties.

Question 12

A 6-year-old child was brought to ER with complaints of abdominal pain, vomiting, and fever. He has tender abdomen with raised TLC. The surgeon decided to perform laparotomy. Which of the following inhalational anesthetics is used for induction in children?

- **A. Desflurane**
- **B. Halothane**
- **C. Isoflurane**
- **D. Methoxyflurane**
- **E. Sevoflurane**

Correct Answer: E. Sevoflurane

Explanation:

- **A. Desflurane:** Incorrect. Desflurane has a pungent odor and can cause airway irritation, making it unsuitable for induction in children.
- **B. Halothane:** Incorrect. Although halothane was historically used in children, it has largely been replaced due to its risk of hepatotoxicity.
- **C. Isoflurane:** Incorrect. Isoflurane is not preferred for induction due to its pungent odor and airway irritation.
- **D. Methoxyflurane:** Incorrect. Methoxyflurane is rarely used in modern practice due to its nephrotoxicity.
- **E. Sevoflurane:** Correct. Sevoflurane is the agent of choice for induction in children because it has a pleasant odor, rapid onset, and minimal airway irritation.

Question 13

A 60-year-old male patient developed profound fever, skeletal muscle rigidity, autonomic hyperactivity, and systemic electrolyte imbalance as part of response to a general anesthetic drug. Which of the following is most likely responsible for these symptoms?

- **A. Ether**
- **B. Halothane**
- **C. Isoflurane**

- **D. Nitrous oxide**
- **E. Sevoflurane**

Correct Answer: B. Halothane

Explanation:

- **A. Ether:** Incorrect. Ether is not commonly used in modern anesthetic practice and is not typically associated with malignant hyperthermia.
- **B. Halothane:** Correct. Halothane can trigger malignant hyperthermia, a rare but life-threatening condition characterized by hypermetabolism, muscle rigidity, and hyperthermia. This condition is often associated with halogenated anesthetics like halothane and succinylcholine.
- **C. Isoflurane:** Incorrect. While isoflurane can occasionally trigger malignant hyperthermia, it is less common compared to halothane.
- **D. Nitrous oxide:** Incorrect. Nitrous oxide does not cause malignant hyperthermia and is considered safe in patients at risk.
- **E. Sevoflurane:** Incorrect. Sevoflurane has a lower risk of triggering malignant hyperthermia compared to halothane.

Question 14

A 17-year-old athlete with a history of asthma comes to your clinic seeking a medication for migraine prophylaxis. Which of the following drugs would you avoid using in this patient?

- **A. Amitriptyline**
- **B. Propranolol**
- **C. Topiramate**
- **D. Valproate**
- **E. Venlafaxine**

Correct Answer: B. Propranolol

Explanation:

- **A. Amitriptyline:** Incorrect. Amitriptyline, a tricyclic antidepressant, is effective for migraine prophylaxis and has no significant contraindications in asthma.
- **B. Propranolol:** Correct. Propranolol, a non-selective beta-blocker, can exacerbate asthma by causing bronchoconstriction. It is contraindicated in patients with a history of asthma.
- **C. Topiramate:** Incorrect. Topiramate, an anticonvulsant, is safe and effective for migraine prophylaxis, with no contraindications in asthma.
- **D. Valproate:** Incorrect. Valproate, another anticonvulsant, is effective for migraine prevention and does not pose a risk for asthma patients.

- **E. Venlafaxine:** Incorrect. Venlafaxine, an SNRI, can be used off-label for migraine prophylaxis and is not contraindicated in asthma.

Question 15

A 55-year-old lady, who is a diagnosed case of psychiatric illness, presented to you for a medical checkup. While looking at her previous prescription, you found that she is using Lithium Carbonate (LC) for the last six months. What is the most probable disease for which she is using LC?

- **A. Anxiety disorder**
- **B. Bipolar affective disorder**
- **C. Depression**
- **D. Obsessive-compulsive disorder**
- **E. Psychosis**

Correct Answer: B. Bipolar affective disorder

Explanation:

- **A. Anxiety disorder:** Incorrect. Lithium is not typically used for anxiety disorders.
- **B. Bipolar affective disorder:** Correct. Lithium carbonate is the gold standard treatment for bipolar affective disorder, particularly for mood stabilization.
- **C. Depression:** Incorrect. While lithium may be used as an adjunct in treatment-resistant depression, this is not its primary indication.
- **D. Obsessive-compulsive disorder:** Incorrect. OCD is treated with SSRIs or cognitive-behavioral therapy; lithium is not used.
- **E. Psychosis:** Incorrect. Psychosis is treated with antipsychotics, not lithium.

Question 16

A 33-year-old lady, diagnosed with ovarian cancer and is on chemotherapy. She was operated on for acute appendicitis, but she went into respiratory depression and could not make a smooth recovery from anesthesia. Which one of the following drugs can be used to treat her respiratory depression?

- **A. Amitriptyline**
- **B. Bromazepam**
- **C. Carbamazepine**
- **D. Doxapram**
- **E. Ondansetron**

Correct Answer: D. Doxapram

Explanation:

- **A. Amitriptyline:** Incorrect. Amitriptyline has no role in treating respiratory depression.
- **B. Bromazepam:** Incorrect. Bromazepam is a benzodiazepine that can further depress respiration.
- **C. Carbamazepine:** Incorrect. Carbamazepine is an anticonvulsant and has no role in respiratory depression.
- **D. Doxapram:** Correct. Doxapram is a respiratory stimulant that acts on peripheral chemoreceptors and the medullary respiratory center, making it effective in reversing respiratory depression.
- **E. Ondansetron:** Incorrect. Ondansetron is an antiemetic and does not address respiratory depression.

Question 17

A first-year surgery intern has rotated in numerous surgical disciplines, including general surgery, cardiothoracic surgery, urology, and surgical oncology. He is quite used to liberally ordering morphine for pain control. However, which of the following is an absolute contraindication to opioid use?

- **A. Acute pulmonary edema**
- **B. Femur fracture**
- **C. Closed head injury**
- **D. Myocardial infarction**
- **E. Renal colic**

Correct Answer: C. Closed head injury

Explanation:

- **A. Acute pulmonary edema:** Incorrect. Morphine is used in acute pulmonary edema to reduce anxiety, preload, and afterload, improving oxygenation.
- **B. Femur fracture:** Incorrect. Morphine is commonly used for pain relief in orthopedic injuries like femur fractures.
- **C. Closed head injury:** Correct. Morphine can cause respiratory depression and increase carbon dioxide retention, leading to increased intracranial pressure, which is dangerous in patients with closed head injuries.
- **D. Myocardial infarction:** Incorrect. Morphine is used in MI to relieve pain and reduce cardiac workload by decreasing preload.
- **E. Renal colic:** Incorrect. Morphine is effective in managing the severe pain associated with renal colic.

Question 18

An otolaryngologist decides to perform sinus surgery to debride the scarred sinus tissue. During the procedure, he elects to use an agent that has good local anesthesia as well as vasoconstrictive properties. What agent might he use?

- **A. Cocaine**
- **B. Lidocaine**

- C. Mepivacaine
- D. Procaine
- E. Tetracaine

Correct Answer: A. Cocaine

Explanation:

- **A. Cocaine:** Correct. Cocaine is a local anesthetic with intrinsic vasoconstrictive properties, making it ideal for procedures like sinus surgery to reduce bleeding.
- **B. Lidocaine:** Incorrect. While lidocaine is an effective local anesthetic, it does not have intrinsic vasoconstrictive properties; it is often combined with epinephrine for this purpose.
- **C. Mepivacaine:** Incorrect. Mepivacaine is a local anesthetic with no significant vasoconstrictive effects.
- **D. Procaine:** Incorrect. Procaine is a local anesthetic but lacks vasoconstrictive properties.
- **E. Tetracaine:** Incorrect. Tetracaine is a potent local anesthetic but does not provide vasoconstriction.

Question 19

A 23-year-old man is brought to the emergency room after he was found walking the streets, proclaiming himself "Master of the world." The physician recommends starting the patient on lithium therapy for acute mania. Which of the following is associated with lithium use?

- A. Fine tremors
- B. Hyperthyroidism
- C. Urinary retention
- D. Weight loss
- E. Gingival hyperplasia

Correct Answer: A. Fine tremors

Explanation:

- **A. Fine tremors:** Correct. Fine hand tremors are a well-known and common side effect of lithium therapy. They are usually dose-dependent and can be managed by lowering the dose or adding a beta-blocker like propranolol.
- **B. Hyperthyroidism:** Incorrect. Lithium is more commonly associated with **hypothyroidism**, not hyperthyroidism, due to its inhibitory effects on thyroid hormone synthesis and release.
- **C. Urinary retention:** Incorrect. Lithium can cause **polyuria** and nephrogenic diabetes insipidus rather than urinary retention.
- **D. Weight loss:** Incorrect. Lithium therapy is more commonly associated with **weight gain** rather than weight loss.
- **E. Gingival hyperplasia:** Incorrect. Gingival hyperplasia is a known side effect of drugs like phenytoin, not lithium.

Question 20

A 35-year-old male patient of depression visited his physician for follow-up, six months after using a selective serotonin reuptake inhibitor (SSRI). Upon questioning, he revealed that he still had not returned to normal activities and reluctantly admitted that he had not been taking his medication because of some of the side effects. Which one is likely to be the most bothersome?

- A. Headache
- B. Sexual dysfunction
- C. Tachycardia
- D. Tremor
- E. Weight gain

Correct Answer: B. Sexual dysfunction

Explanation:

- **A. Headache:** Incorrect. Headache is a common but transient side effect of SSRIs and is usually not severe enough to cause medication non-adherence.
- **B. Sexual dysfunction:** Correct. Sexual dysfunction, including decreased libido, delayed ejaculation, and anorgasmia, is a common and often distressing side effect of SSRIs. It is frequently cited as a reason for discontinuation.
- **C. Tachycardia:** Incorrect. Tachycardia is not a typical side effect of SSRIs and is less likely to be bothersome in most patients.
- **D. Tremor:** Incorrect. Tremors may occur in some patients taking SSRIs, but they are rare and less commonly reported as a significant issue.
- **E. Weight gain:** Incorrect. While SSRIs like paroxetine may lead to weight gain, this effect is more gradual and typically less bothersome than sexual dysfunction.

Question 21

A 15-year-old male patient died from hepatic encephalopathy. Which of the following is relevant microscopic features after post-mortem examination of his brain?

- A. Cowdry bodies
- B. Lewy bodies
- C. Negri bodies
- D. Nissl substance
- E. Neuropil

Correct Answer: A. Cowdry bodies

Explanation:

- **A. Cowdry bodies:** Correct. Cowdry type A bodies are eosinophilic intranuclear inclusions seen in herpes encephalitis. Given the setting of hepatic encephalopathy and potential viral etiology, these inclusions are relevant findings.
- **B. Lewy bodies:** Incorrect. Lewy bodies are cytoplasmic inclusions found in Parkinson's disease and Lewy body dementia, not hepatic encephalopathy.
- **C. Negri bodies:** Incorrect. Negri bodies are intracytoplasmic inclusions seen in rabies, which is unrelated to hepatic encephalopathy.
- **D. Nissl substance:** Incorrect. Nissl substance represents rough endoplasmic reticulum in neurons and is a normal histological feature, not pathological.
- **E. Neuropil:** Incorrect. Neuropil refers to the dense network of neural and glial processes in the gray matter and is a normal component of brain histology.

Question 22

A 40-year-old male patient is suffering from rabies after a dog bite one month back. He has difficulty in drinking water and dyspnea. What changes would you expect in the basal ganglia of this patient?

- **A. Cowdry bodies**
- **B. Lewy bodies**
- **C. Negri bodies**
- **D. Nissl substance**
- **E. Vesicular nuclei**

Correct Answer: C. Negri bodies

Explanation:

- **A. Cowdry bodies:** Incorrect. These are seen in herpes encephalitis, not rabies.
- **B. Lewy bodies:** Incorrect. Lewy bodies are associated with Parkinson's disease and Lewy body dementia.
- **C. Negri bodies:** Correct. Negri bodies are characteristic intracytoplasmic eosinophilic inclusions found in neurons (particularly in the hippocampus and Purkinje cells) in rabies.
- **D. Nissl substance:** Incorrect. Nissl substance is normal neuronal rough ER and is not a pathological finding in rabies.
- **E. Vesicular nuclei:** Incorrect. Vesicular nuclei are a descriptive term but not specific to rabies pathology.

Question 23

A 65-year-old lady is suffering from Alzheimer's disease and is receiving treatment for the last five years. Which one of the following is a relevant pathological finding in this case?

- **A. Axonal reaction**
- **B. Gliosis**
- **C. Neurofibrillary tangles**
- **D. Plaques**
- **E. Red neuron**

Correct Answer: C. Neurofibrillary tangles

Explanation:

- **A. Axonal reaction:** Incorrect. Axonal reactions occur following axonal injury and are not specific to Alzheimer's disease.
- **B. Gliosis:** Incorrect. While gliosis may be present, it is not a hallmark feature of Alzheimer's disease.
- **C. Neurofibrillary tangles:** Correct. Neurofibrillary tangles, made of hyperphosphorylated tau protein, are a hallmark of Alzheimer's disease along with amyloid plaques.
- **D. Plaques:** Incorrect. While amyloid plaques are also present, neurofibrillary tangles are more directly associated with neuronal degeneration in Alzheimer's.
- **E. Red neuron:** Incorrect. Red neurons are indicative of acute neuronal injury, such as ischemia, and are not relevant in Alzheimer's disease.

Question 24

A newborn baby is suffering from fever, vomiting, and meningeal irritation. CSF examination shows increased proteins and decreased sugar levels. Which one of the following is the cause of this condition?

- **A. Aspergillosis**
- **B. E. coli**
- **C. H. influenzae**
- **D. N. meningitidis**
- **E. Streptococcus pneumoniae**

Correct Answer: B. E. coli

Explanation:

- **A. Aspergillosis:** Incorrect. Aspergillosis is a fungal infection and does not commonly cause neonatal meningitis.
- **B. E. coli:** Correct. E. coli (especially K1 strain) is a leading cause of neonatal meningitis, presenting with fever, vomiting, and abnormal CSF findings.
- **C. H. influenzae:** Incorrect. Haemophilus influenzae type b (Hib) is more common in older children, not neonates.
- **D. N. meningitidis:** Incorrect. Neisseria meningitidis is a common cause of meningitis in older children and adults but not in neonates.

- **E. Streptococcus pneumoniae:** Incorrect. *S. pneumoniae* causes meningitis in children and adults but is not a typical neonatal pathogen.

Question 25

A 10-year-old child was having posterior fossa mass on CT scan. What is the most probable diagnosis?

- **A. Abscess**
- **B. Arachnoid cyst**
- **C. Glioma**
- **D. Medulloblastoma**
- **E. Meningioma**

Correct Answer: D. Medulloblastoma

Explanation:

- **A. Abscess:** Incorrect. While an abscess can occur, it is not the most common posterior fossa mass in children.
- **B. Arachnoid cyst:** Incorrect. Arachnoid cysts are congenital and typically asymptomatic, unless they compress nearby structures.
- **C. Glioma:** Incorrect. Gliomas can occur in various brain regions but are not the most common posterior fossa mass in children.
- **D. Medulloblastoma:** Correct. Medulloblastoma is the most common malignant posterior fossa tumor in children, typically arising in the cerebellum.
- **E. Meningioma:** Incorrect. Meningiomas are rare in children and more common in adults.

Question 26

A young lady was suffering from a left cerebral hemisphere tumor on CT scan examination. The tumor was dural-based and shifted the ventricle to one side. Which one is the most relevant diagnosis?

- **A. Meningioma**
- **B. Neurofibromatosis**
- **C. Primary germ cell tumor**
- **D. Tuberous sclerosis**
- **E. Von-Hippel Lindau disease**

Correct Answer: A. Meningioma

Explanation:

- **A. Meningioma:** Correct. Meningiomas are dural-based tumors that can compress the brain and cause mass effects like ventricular displacement.
- **B. Neurofibromatosis:** Incorrect. Neurofibromatosis is a syndrome associated with multiple nerve sheath tumors, not dural-based masses.
- **C. Primary germ cell tumor:** Incorrect. Germ cell tumors typically occur in the midline, such as the pineal or suprasellar regions, not in the cerebral hemispheres.
- **D. Tuberos sclerosis:** Incorrect. Tuberos sclerosis is associated with cortical tubers, not dural-based tumors.
- **E. Von-Hippel Lindau disease:** Incorrect. VHL is associated with hemangioblastomas in the cerebellum and retina, not dural-based tumors.

Question 29

Following a bar fight, a 22-year-old man is brought unconscious to the emergency department. Several minutes earlier, he had been hit on the head with a heavy iron club and had been briefly unconscious but had then apparently recovered. One or two minutes later, he had again lost consciousness. Which of the following is the most likely diagnosis?

- **A. Epidural hematoma**
- **B. Subarachnoid hemorrhage**
- **C. Subdural hematoma**
- **D. Stroke**
- **E. Transient ischemic attack**

Correct Answer: A. Epidural hematoma

Explanation:

- **A. Epidural hematoma:** Correct. The described "lucid interval" (brief recovery of consciousness followed by deterioration) is characteristic of an epidural hematoma. It is caused by arterial bleeding, often from a rupture of the middle meningeal artery after head trauma.
 - **B. Subarachnoid hemorrhage:** Incorrect. Subarachnoid hemorrhage typically presents with a sudden, severe headache ("thunderclap headache") and not with a lucid interval.
 - **C. Subdural hematoma:** Incorrect. Subdural hematomas usually result from venous bleeding, leading to a slower progression of symptoms over days to weeks.
 - **D. Stroke:** Incorrect. Stroke symptoms would not include a lucid interval and are not typically associated with head trauma.
 - **E. Transient ischemic attack:** Incorrect. TIAs resolve quickly without persistent neurological deficits and are unrelated to trauma.
-

Question 30

A 35-year-old lady is suffering from a space-occupying lesion in the brain. On CT scan examination, there is a tumor in the right cerebral hemisphere. Histopathologist reported this case as pilocytic astrocytoma. Which of the following microscopic features are diagnostic?

- **A. Cowry bodies**
- **B. Neurofibrillary tangles**
- **C. Negri bodies**
- **D. Neuronal plaques**
- **E. Rosenthal fibers**

Correct Answer: E. Rosenthal fibers

Explanation:

- **A. Cowry bodies:** Incorrect. Cowry bodies are seen in viral encephalitis, such as herpes simplex encephalitis, not astrocytomas.
- **B. Neurofibrillary tangles:** Incorrect. Neurofibrillary tangles are seen in Alzheimer's disease, not brain tumors.
- **C. Negri bodies:** Incorrect. Negri bodies are diagnostic of rabies and are not related to brain tumors.
- **D. Neuronal plaques:** Incorrect. Neuronal plaques are associated with neurodegenerative diseases such as Alzheimer's, not astrocytomas.
- **E. Rosenthal fibers:** Correct. Rosenthal fibers are eosinophilic, corkscrew-shaped inclusions found in astrocytes and are characteristic of pilocytic astrocytomas.

Question 31

A newborn girl is found to have herniation of both the spinal cord and meninges through a defect in the vertebral arch of the spinal column. Her mother had not had prenatal care and had not taken nutritional supplements during pregnancy. Which of the following best describes this defect?

- **A. Anencephaly**
- **B. Hydrocephalus**
- **C. Meningocele**
- **D. Meningomyelocele**
- **E. Spina bifida occulta**

Correct Answer: D. Meningomyelocele

Explanation:

- **A. Anencephaly:** Incorrect. Anencephaly involves the absence of a large part of the brain and skull, not herniation of the spinal cord and meninges.

- **B. Hydrocephalus:** Incorrect. Hydrocephalus refers to an abnormal accumulation of cerebrospinal fluid in the brain, not a spinal defect.
- **C. Meningocele:** Incorrect. Meningocele involves herniation of the meninges only, without spinal cord involvement.
- **D. Meningomyelocele:** Correct. Meningomyelocele is a neural tube defect involving herniation of both the meninges and the spinal cord through a defect in the vertebral arch.
- **E. Spina bifida occulta:** Incorrect. Spina bifida occulta is the mildest form of neural tube defect and involves no herniation of meninges or spinal cord.

Question 32

A 70-year-old man has a 2-day history of worsening generalized headache and increasing obtundation. He now complains of stiffness in his neck. On physical examination, vital signs include T 38.7°C, pulse 85/minute, respirations 21/minute, and blood pressure 110/85 mmHg. A CBC reveals a WBC count of 16,850/mm³. Serum electrolytes include a glucose of 88 mg/dL. A lumbar puncture yields cloudy cerebrospinal fluid with a glucose of 32 mg/dL, and cell count of 3800 WBCs (95% PMNs and 5% mononuclear) and 122 RBCs. He receives antibiotic therapy and improves. Which of the following long-term complications is most likely to develop from this man's current disease?

- **A. Cerebral infarction**
- **B. Cerebellar tonsillar herniation**
- **C. Encephalitis**
- **D. Hydrocephalus**
- **E. Subdural hematoma**

Correct Answer: D. Hydrocephalus

Explanation:

- **A. Cerebral infarction:** Incorrect. While meningitis can cause vascular complications, infarction is less common as a long-term sequela.
 - **B. Cerebellar tonsillar herniation:** Incorrect. Herniation is an acute complication of elevated intracranial pressure, not a long-term complication.
 - **C. Encephalitis:** Incorrect. Encephalitis refers to brain parenchymal inflammation, typically caused by viruses, not bacterial meningitis.
 - **D. Hydrocephalus:** Correct. Post-meningitis hydrocephalus is a common long-term complication, often due to obstruction of CSF flow caused by scarring and fibrosis following inflammation.
 - **E. Subdural hematoma:** Incorrect. Subdural hematomas are traumatic in origin and are not a direct consequence of meningitis.
-

Question 33

A 58-year-old man presented with tinnitus, ipsilateral loss of hearing, unsteadiness, and dizziness. Symptoms were first noted 9 months prior to examination and progressed very slowly. If the cause is a tumor, which of the following is most likely?

- **A. Ependymoma**
- **B. Glioblastoma**
- **C. Medulloblastoma**
- **D. Neuroblastoma**
- **E. Vestibular-acoustic Schwannoma**

Correct Answer: E. Vestibular-acoustic Schwannoma

Explanation:

- **A. Ependymoma:** Incorrect. Ependymomas arise in the ependymal lining of the ventricles and spinal cord and do not present with hearing loss.
- **B. Glioblastoma:** Incorrect. Glioblastoma is an aggressive cerebral tumor and does not typically cause progressive hearing loss and balance issues.
- **C. Medulloblastoma:** Incorrect. Medulloblastomas are common in children and occur in the posterior fossa, causing cerebellar signs, not hearing loss.
- **D. Neuroblastoma:** Incorrect. Neuroblastoma is an adrenal gland tumor and does not occur in the cranial nerves.
- **E. Vestibular-acoustic Schwannoma:** Correct. This tumor arises from Schwann cells of the vestibulocochlear nerve (CN VIII), causing hearing loss, tinnitus, and balance problems.

Question 34

A 75-year-old woman appears well after slipping on wet pavement and striking the right side of her head. She did not remember the fall. She complained of persistent headache and confusion. Magnetic imaging studies revealed a subdural hematoma over the lateral aspect of the right cerebral hemisphere. Which of the following is a well-known characteristic of this disorder?

- **A. Bleeding from arteries of the circle of Willis**
- **B. Casually associated with hypertension**
- **C. Caused by venous hemorrhage**
- **D. Laceration of branches of the middle artery**
- **E. Rapidly progressive cerebral compression**

Correct Answer: C. Caused by venous hemorrhage

Explanation:

- **A. Bleeding from arteries of the circle of Willis:** Incorrect. This describes subarachnoid hemorrhage from aneurysm rupture, not subdural hematoma.
- **B. Casually associated with hypertension:** Incorrect. Hypertension is a risk factor for intracerebral hemorrhage, not subdural hematoma.
- **C. Caused by venous hemorrhage:** Correct. Subdural hematomas result from tearing of bridging veins, often due to head trauma, especially in elderly patients with brain atrophy.
- **D. Laceration of branches of the middle artery:** Incorrect. This describes an epidural hematoma, not subdural hematoma.
- **E. Rapidly progressive cerebral compression:** Incorrect. Subdural hematomas are typically slow to progress due to the venous origin of the bleed.

Question 35

A 10-year-old child is suffering from fever, headache, vomiting, and neck rigidity. On physical examination, CSF is purulent. Laboratory report shows increased protein and decreased sugar. Which one of the following is the causative organism?

- **A. Escherichia coli**
- **B. Neisseria meningitidis**
- **C. Streptococcus pyogenes**
- **D. Staphylococcus aureus**
- **E. Salmonella typhi**

Correct Answer: B. Neisseria meningitidis

Explanation:

- **A. Escherichia coli:** Incorrect. E. coli is a common cause of meningitis in neonates, not in 10-year-old children.
- **B. Neisseria meningitidis:** Correct. Neisseria meningitidis is a leading cause of bacterial meningitis in school-aged children and young adults. The purulent CSF with decreased sugar and increased protein is characteristic.
- **C. Streptococcus pyogenes:** Incorrect. While S. pyogenes causes pharyngitis and skin infections, it is not a common cause of meningitis.
- **D. Staphylococcus aureus:** Incorrect. S. aureus may cause meningitis secondary to neurosurgical interventions or trauma, but it is not a common primary cause.
- **E. Salmonella typhi:** Incorrect. Salmonella typhi causes typhoid fever, not meningitis.

Question 36

A 65-year-old male patient is suffering from acute pyogenic meningitis. Which of the following is **not relevant** to this condition?

- A. Cloudy or purulent CSF
- B. Increased pressure
- C. Lymphocyte count raised to 90,000/mm³
- D. Raised protein levels
- E. Neutrophil's count raised to 90,000/mm³

Correct Answer: C. Lymphocyte count raised to 90,000/mm³

Explanation:

- **A. Cloudy or purulent CSF:** Relevant. In pyogenic (bacterial) meningitis, the CSF is typically cloudy or purulent due to high WBC counts and proteins.
- **B. Increased pressure:** Relevant. Elevated intracranial pressure is commonly seen in meningitis due to inflammation and CSF abnormalities.
- **C. Lymphocyte count raised to 90,000/mm³:** Correct. Lymphocytic predominance is typical of **viral meningitis**, not bacterial (pyogenic) meningitis, where neutrophils dominate.
- **D. Raised protein levels:** Relevant. Elevated protein is a hallmark of bacterial meningitis due to increased permeability of the blood-brain barrier.
- **E. Neutrophil's count raised to 90,000/mm³:** Relevant. Pyogenic meningitis is characterized by neutrophilic predominance in the CSF.

Question 37

A 35-year-old lady is suffering from fever, headache, vomiting, and neck rigidity due to rupture of an epidermoid cyst in the subarachnoid space. Which of the following is the most probable diagnosis?

- A. Chemical meningitis
- B. Drug-induced meningitis
- C. Immunologic meningitis
- D. Parasitic meningitis
- E. Rickettsia meningitis

Correct Answer: A. Chemical meningitis

Explanation:

- **A. Chemical meningitis:** Correct. Rupture of an epidermoid cyst can release irritating substances into the subarachnoid space, causing a sterile inflammatory response known as chemical meningitis.
- **B. Drug-induced meningitis:** Incorrect. Drug-induced meningitis occurs due to hypersensitivity reactions to certain medications and does not involve rupture of a cyst.
- **C. Immunologic meningitis:** Incorrect. Immunologic meningitis is associated with autoimmune diseases but is not related to epidermoid cyst rupture.

- **D. Parasitic meningitis:** Incorrect. Parasitic meningitis is caused by parasitic infections such as neurocysticercosis, not by epidermoid cysts.
- **E. Rickettsia meningitis:** Incorrect. Rickettsial meningitis occurs in rickettsial infections like Rocky Mountain spotted fever and is unrelated to epidermoid cysts.

Question 38

CT scan findings of a 12-year-old child show brain abscess. Which of the following is **not** a predisposing condition?

- **A. Anatomic anomalies**
- **B. Blood dyscrasias**
- **C. Neurosurgery**
- **D. Penetrating cranial trauma**
- **E. Pyogenic extra-neural infections**

Correct Answer: B. Blood dyscrasias

Explanation:

- **A. Anatomic anomalies:** Relevant. Conditions like congenital heart defects with right-to-left shunting can predispose to brain abscess by bypassing pulmonary filtration of microorganisms.
- **B. Blood dyscrasias:** Correct. Blood dyscrasias (disorders affecting blood cells) are not a recognized predisposing factor for brain abscesses.
- **C. Neurosurgery:** Relevant. Neurosurgical procedures can introduce pathogens, leading to brain abscesses.
- **D. Penetrating cranial trauma:** Relevant. Penetrating trauma introduces bacteria into the cranial cavity, leading to abscess formation.
- **E. Pyogenic extra-neural infections:** Relevant. Pyogenic infections such as otitis media or sinusitis can spread to the brain, causing abscesses.

Question 39

A 2-year-old child presents with fever, headache, prostration, and nuchal rigidity. The CSF is cloudy, and microscopic examination reveals innumerable neutrophils. The CSF protein is increased, and glucose is decreased. The most likely etiologic agent is which organism?

- **A. Escherichia coli**
- **B. Group B Streptococci**
- **C. Hemophilus influenzae**
- **D. Streptococcus pneumoniae**
- **E. Staphylococcus aureus**

Correct Answer: D. Streptococcus pneumoniae

Explanation:

- **A. Escherichia coli:** Incorrect. E. coli is a common cause of neonatal meningitis but not in older children.
- **B. Group B Streptococci:** Incorrect. Group B Streptococcus is another cause of neonatal meningitis, not typical in a 2-year-old.
- **C. Hemophilus influenzae:** Incorrect. Hib can cause meningitis in children, but it is less common in immunized populations due to vaccination.
- **D. Streptococcus pneumoniae:** Correct. Streptococcus pneumoniae is the most common cause of bacterial meningitis in children older than 2 years.
- **E. Staphylococcus aureus:** Incorrect. S. aureus causes meningitis mainly secondary to trauma or neurosurgical interventions.

Question 40

A 70-year-old man presents with loss of memory for recent events. He has no history of substance abuse. He has forgotten his grandchildren's names, and he has been unable to manage his personal finances. Also, he has lost his way while driving to familiar locations. Which of the following is the most likely diagnosis?

- **A. Alzheimer disease**
- **B. Creutzfeldt-Jakob disease**
- **C. Huntington disease**
- **D. Parkinson disease**
- **E. Wernicke-Korsakoff syndrome**

Correct Answer: A. Alzheimer disease

Explanation:

- **A. Alzheimer disease:** Correct. The progressive loss of memory, disorientation, and difficulty managing finances or recognizing familiar people is characteristic of Alzheimer disease.
 - **B. Creutzfeldt-Jakob disease:** Incorrect. CJD causes rapidly progressive dementia with myoclonus and other neurologic signs, not the gradual cognitive decline described.
 - **C. Huntington disease:** Incorrect. Huntington disease involves chorea, psychiatric symptoms, and cognitive decline, typically presenting in middle age.
 - **D. Parkinson disease:** Incorrect. Parkinson disease primarily causes motor symptoms such as bradykinesia and rigidity, with cognitive impairment occurring later.
 - **E. Wernicke-Korsakoff syndrome:** Incorrect. This syndrome results from thiamine deficiency and is associated with chronic alcoholism, which is not mentioned here.
-

Question 41

In glioblastoma multiforme, which of the following molecular findings would support a primary, rather than secondary, tumor origin?

- **A. p53 mutation**
- **B. MGMT promoter methylation**
- **C. 1p19q translocation**
- **D. EGFR mutation**

Correct Answer: D. EGFR mutation

Explanation:

- **A. p53 mutation:** Incorrect. p53 mutations are associated with secondary glioblastomas that develop from lower-grade astrocytomas.
- **B. MGMT promoter methylation:** Incorrect. MGMT methylation is not specific to primary or secondary glioblastomas but is a prognostic marker indicating better response to treatment.
- **C. 1p19q translocation:** Incorrect. This is seen in oligodendrogliomas, not glioblastomas.
- **D. EGFR mutation:** Correct. EGFR amplification or mutation is a hallmark of primary glioblastomas, which arise de novo without progression from lower-grade tumors.

Question 42

A 68-year-old man presents with increasing headaches and drowsiness on the left side over the past two months. On examination, he had left pronator drift and 4/5 weakness in left extremity muscles and moderate sensory loss in the left extremities. MRI shows a large infiltrating lesion centered in the right parietal cortex and expanding the corpus callosum, surrounded by edema. The most likely histologic appearance of the tumor is:

- **A. Bipolar cells with true ependymal rosettes**
- **B. Glial cell proliferation**
- **C. Nuclear pleomorphism, necrosis, multiple mitoses**
- **D. Primitive cells resembling cerebellar granular cells, numerous mitoses**
- **E. Spindled cells arranged in sheets and whorls, no mitoses**

Correct Answer: C. Nuclear pleomorphism, necrosis, multiple mitoses

Explanation:

- **A. Bipolar cells with true ependymal rosettes:** Incorrect. This is characteristic of ependymomas, not infiltrative gliomas like glioblastoma.
- **B. Glial cell proliferation:** Incorrect. While glioblastoma arises from glial cells, the hallmark features of the tumor include pleomorphism and necrosis.

- **C. Nuclear pleomorphism, necrosis, multiple mitoses:** Correct. This is characteristic of glioblastoma, an aggressive primary brain tumor with infiltrative growth and significant histologic abnormalities.
- **D. Primitive cells resembling cerebellar granular cells, numerous mitoses:** Incorrect. This describes medulloblastomas, which occur in the posterior fossa and primarily affect children.
- **E. Spindled cells arranged in sheets and whorls, no mitoses:** Incorrect. This describes meningiomas, which are usually dural-based and non-invasive.

Question 43

A 35-year-old man got a new job that was extremely stressful. He began to have anxiety and panic episodes. As a result, he took benzodiazepine from a co-worker to help him cope with his anxiety and panic attacks, but he accidentally overdosed. His colleague brought him to the ER within 15 minutes. As a doctor, which antidote would you give to this patient?

- **A. Acetaminophen**
- **B. Flumazenil**
- **C. Nalorphine**
- **D. Naloxone**
- **E. Zolpidem**

Correct Answer: B. Flumazenil

Explanation:

- **A. Acetaminophen:** Incorrect. This is used for fever and mild pain and has no role in benzodiazepine overdose.
- **B. Flumazenil:** Correct. Flumazenil is a benzodiazepine receptor antagonist and is used as an antidote for benzodiazepine overdose. It rapidly reverses the sedative effects.
- **C. Nalorphine:** Incorrect. Nalorphine is not used clinically and is irrelevant for benzodiazepine overdose.
- **D. Naloxone:** Incorrect. Naloxone is an opioid antagonist and is used for opioid overdose, not benzodiazepine overdose.
- **E. Zolpidem:** Incorrect. Zolpidem is a sedative-hypnotic, and using it in this case would exacerbate sedation.

Question 44

A person who was given a barbiturate overdose experienced giddiness, ataxia, slurred speech, delirium, and excitement, but as the poisoning progressed, the person became hypotensive, hypothermic, and cyanotic, with an abnormal breathing pattern. In the advanced stages of barbiturate poisoning, what form of abnormal respiratory pattern is commonly seen?

- **A. Apneustic breathing**
- **B. Biot's breathing**

- C. Cheyne-Stokes breathing
- D. Hyperpnea breathing
- E. Kussmaul breathing

Correct Answer: B. Biot's breathing

Explanation:

- **A. Apneustic breathing:** Incorrect. This is seen in pontine lesions and is not specific to barbiturate poisoning.
- **B. Biot's breathing:** Correct. Biot's breathing (irregular periods of apnea interspersed with shallow breaths) is often seen in central nervous system depression due to barbiturates.
- **C. Cheyne-Stokes breathing:** Incorrect. This is characterized by cyclic breathing with gradual waxing and waning and is seen in heart failure or brain injury, not barbiturate poisoning.
- **D. Hyperpnea breathing:** Incorrect. Hyperpnea is not a typical finding in barbiturate overdose.
- **E. Kussmaul breathing:** Incorrect. Kussmaul breathing (deep and labored) is associated with metabolic acidosis, such as in diabetic ketoacidosis.

Question 45

A woman with many comorbidities leads a stressful life that disrupts her sleep. To get some restful sleep, she decided to take Chloral hydrate as a hypnotic. She overdosed on Chloral hydrate as she was unaware of the dosage. Her attendants rushed her to the emergency room, where she was given a stomach wash. What should be used for chloral hydrate poisoning?

- A. Alkali
- B. Charcoal powder
- C. Potassium permanganate
- D. Saline washing
- E. Sodium bicarbonate

Correct Answer: B. Charcoal powder

Explanation:

- **A. Alkali:** Incorrect. Alkali is not used in poison management, as it may worsen gastric damage.
- **B. Charcoal powder:** Correct. Activated charcoal is commonly used in cases of poisoning to adsorb the toxic substance in the stomach and prevent further absorption.
- **C. Potassium permanganate:** Incorrect. This is no longer recommended for poisoning and can cause oxidative damage to tissues.
- **D. Saline washing:** Incorrect. While gastric lavage may be performed, it is often combined with activated charcoal rather than saline.

- **E. Sodium bicarbonate:** Incorrect. Sodium bicarbonate is used in metabolic acidosis or specific drug toxicities (e.g., tricyclic antidepressants) but has no role in chloral hydrate poisoning.

Question 46

An officer in charge of a police station was called for an immediate response in a public park for a person who was suspected to be mentally ill and needed to be taken to a safe place for evaluation and possible care. How much detention time should not exceed in such cases?

- **A. One week**
- **B. Seventy-two hours**
- **C. Thirty-six hours**
- **D. Twelve hours**
- **E. Twenty-four hours**

Correct Answer: B. Seventy-two hours

Explanation:

- **A. One week:** Incorrect. A week-long detention is too long for initial evaluation in cases involving suspected mental illness.
- **B. Seventy-two hours:** Correct. A 72-hour (three-day) period is generally the maximum allowable duration for holding an individual for mental health evaluation under emergency detention laws in most jurisdictions.
- **C. Thirty-six hours:** Incorrect. While some cases may allow shorter durations, 72 hours is the standard for emergency detention.
- **D. Twelve hours:** Incorrect. This is too short for proper evaluation and observation.
- **E. Twenty-four hours:** Incorrect. Although possible in some cases, 24 hours is not the standard duration for mental health evaluations.

Question 47

A married couple had a tense life going on. The wife in the relationship is a chaste but the husband not only assaults her as well but also asks her questions regarding any extra-marital affairs. What is the suffering of the husband in this case?

- **A. Auditory hallucinations**
- **B. Confabulations**
- **C. Fugue**
- **D. Delusions of infidelity**
- **E. Delusions of influence**

Correct Answer: D. Delusions of infidelity

Explanation:

- **A. Auditory hallucinations:** Incorrect. This involves hearing non-existent sounds, unrelated to the described behavior.
- **B. Confabulations:** Incorrect. Confabulations involve fabricating memories, typically due to memory loss, which does not fit this case.
- **C. Fugue:** Incorrect. Fugue refers to a dissociative state involving travel or identity loss, unrelated to this case.
- **D. Delusions of infidelity:** Correct. The husband exhibits delusions that his wife is unfaithful despite no evidence, a hallmark of this delusion.
- **E. Delusions of influence:** Incorrect. Delusions of influence involve the belief that external forces control one's actions or thoughts, unrelated to this scenario.

Question 48

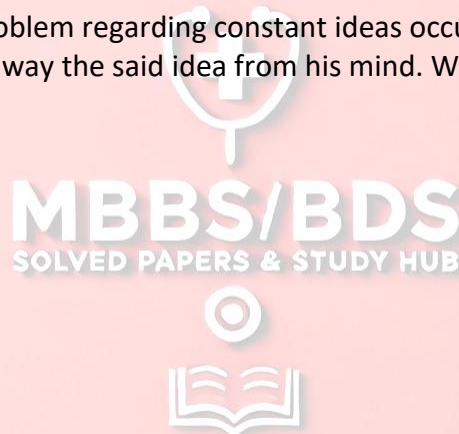
A male of middle age had a major problem regarding constant ideas occurring in his mind with irresistible force. The person is unable to drive away the said idea from his mind. What is the diagnosis in this case?

- **A. Delusion**
- **B. Impulse**
- **C. Intellect**
- **D. Obsession**
- **E. Thought**

Correct Answer: D. Obsession

Explanation:

- **A. Delusion:** Incorrect. A delusion is a fixed false belief not aligned with reality, not the repetitive intrusive thoughts described here.
 - **B. Impulse:** Incorrect. Impulses involve sudden, often uncontrolled urges to act, not recurring intrusive ideas.
 - **C. Intellect:** Incorrect. Intellect refers to cognitive abilities, not related to intrusive ideas.
 - **D. Obsession:** Correct. Obsessions are intrusive, unwanted thoughts or ideas that persist and cause distress, as described in this case.
 - **E. Thought:** Incorrect. "Thought" is too broad and does not describe the repetitive and distressing nature of the ideas.
-



Question 49

A married couple was living a stressful life due to many domestic problems. The husband was of the view that the wife is attempting to kill him by slow poisoning; however, in reality, there wasn't any such scenario. What type of delusion does the husband have?

- **A. Erotomaniac**
- **B. Grandiose**
- **C. Jealous**
- **D. Persecutory**
- **E. Somatic**

Correct Answer: D. Persecutory

Explanation:

- **A. Erotomaniac:** Incorrect. Erotomania involves the delusion that someone is in love with the individual, unrelated to this scenario.
- **B. Grandiose:** Incorrect. Grandiose delusions involve an inflated sense of self-importance or abilities, not persecution.
- **C. Jealous:** Incorrect. Jealous delusions relate to infidelity, not poisoning.
- **D. Persecutory:** Correct. Persecutory delusions involve the belief that one is being harmed, harassed, or targeted, such as being poisoned.
- **E. Somatic:** Incorrect. Somatic delusions involve false beliefs about bodily functions or sensations, not external harm.

Question 50

Provision of guidance, education, rehabilitation after care and preventive measures in the community (Family, home, workplace or educational institutions etc.) comes under which section of the mental health act?

- **A. Section 7**
- **B. Section 8**
- **C. Section 9**
- **D. Section 10**
- **E. Section 11**

Correct Answer: D. Section 10

Explanation:

- **A. Section 7:** Incorrect. Section 7 generally pertains to involuntary detention for assessment or treatment.

- **B. Section 8:** Incorrect. This section typically involves legal processes for guardianship or mental health care orders.
- **C. Section 9:** Incorrect. Section 9 is not specific to community-based education and rehabilitation.
- **D. Section 10:** Correct. Section 10 of the Mental Health Act focuses on community-based care, including guidance, education, and preventive strategies.
- **E. Section 11:** Incorrect. Section 11 often relates to procedural matters, not community rehabilitation.

Question 51

A mentally ill person was caught by the police for his vague actions in the community park. In urgent admission for assessment, what is the period of detention?

- **A. 12 hours**
- **B. 24 hours**
- **C. 48 hours**
- **D. 72 hours**
- **E. One week**

Correct Answer: D. 72 hours

Explanation:

- **A. 12 hours:** Incorrect. This is too short to allow for a comprehensive mental health evaluation.
- **B. 24 hours:** Incorrect. While shorter periods may be used for observation, 72 hours is the standard for initial emergency detention.
- **C. 48 hours:** Incorrect. While 48 hours is used in some scenarios, 72 hours is more commonly allowed for full evaluation.
- **D. 72 hours:** Correct. Emergency detention for psychiatric assessment often permits a 72-hour period for evaluation and planning care.
- **E. One week:** Incorrect. Detention for one week requires more formal procedures beyond emergency detention.

Question 52

A father brought his son to the doctor with a chief complaint that he calls an air conditioner a television and falsely interprets an object with its real existence. What is the suffering of the son?

- **A. Delusion**
- **B. Delirium**
- **C. Illusion**
- **D. Psychosis**
- **E. Schizophrenia**

Correct Answer: C. Illusion

Explanation:

- **A. Delusion:** Incorrect. A delusion is a fixed, false belief that is not based on reality, not a misinterpretation of objects.
- **B. Delirium:** Incorrect. Delirium involves confusion, altered consciousness, and disorientation, not specific object misinterpretations.
- **C. Illusion:** Correct. Illusions involve the misinterpretation of real external stimuli, such as calling an air conditioner a television.
- **D. Psychosis:** Incorrect. Psychosis refers to a broader loss of reality, often including delusions and hallucinations, not isolated illusions.
- **E. Schizophrenia:** Incorrect. While illusions can occur in schizophrenia, they are not the defining feature of the disorder.

Question 53

A father brought her daughter in a state of complete suppression of speech, movement, and action with no disturbance of consciousness. What is the name of this condition?

- **A. Fugue**
- **B. Shock**
- **C. Stupor**
- **D. Trance**
- **E. Twilight state**

Correct Answer: C. Stupor

Explanation:

- **A. Fugue:** Incorrect. Fugue refers to a dissociative state involving amnesia and travel, not suppression of speech and movement.
- **B. Shock:** Incorrect. Shock is a physiological state of reduced perfusion, not relevant to this case.
- **C. Stupor:** Correct. Stupor is characterized by a state of immobility and unresponsiveness despite normal consciousness.
- **D. Trance:** Incorrect. Trance involves altered consciousness, often associated with hypnosis or meditation.
- **E. Twilight state:** Incorrect. Twilight states involve altered consciousness with confusion, often seen in seizure disorders, and do not fit the described condition.

Question 54

A mentally retarded person was brought to you for mental age assessment. Upon examination of skills, the person was socially and vocationally enough. Your assessment was that he can minimally self-support himself.

You put him under the category of feeble morons. According to the assessment, what is the person's mental age?

- **A. 2 years old**
- **B. 3 years old**
- **C. 4 years old**
- **D. 5 years old**
- **E. 6 years old**

Correct Answer: E. 6 years old

Explanation:

- **A. 2 years old:** Incorrect. This mental age aligns with severe intellectual disability and would not allow even minimal self-support.
- **B. 3 years old:** Incorrect. At this age, social and vocational skills are minimal and insufficient for self-support.
- **C. 4 years old:** Incorrect. While slightly higher, this level still does not match the description of being socially and vocationally functional.
- **D. 5 years old:** Incorrect. This mental age reflects borderline capacity but is slightly lower than what is described.
- **E. 6 years old:** Correct. Individuals categorized as feeble morons (a dated term) typically exhibit a mental age of around 6 years, allowing basic self-support and social functionality.

Question 55

A young male was brought to the emergency department with pinpoint pupils, moist, perspiring skin, and a peculiar alcoholic smell. Which of the following is characteristic breathing that will be recorded in the said poisoning?

- **A. Fast breathing**
- **B. Fast–Absent breathing**
- **C. Fast–Slow–Absent breathing**
- **D. Slow breathing**
- **E. Slow–Fast breathing**

Correct Answer: D. Slow breathing

Explanation:

- **A. Fast breathing:** Incorrect. Increased respiratory rate (tachypnea) is not typical of this poisoning scenario.
- **B. Fast–Absent breathing:** Incorrect. This pattern does not correspond to poisoning with substances causing pinpoint pupils (e.g., opioids).

- **C. Fast–Slow–Absent breathing:** Incorrect. While complex patterns can occur in CNS toxicity, this does not fit opioid poisoning specifically.
- **D. Slow breathing:** Correct. Pinpoint pupils, moist skin, and an alcoholic smell suggest opioid poisoning, which often leads to respiratory depression (slow breathing).
- **E. Slow–Fast breathing:** Incorrect. A mixed respiratory pattern is not characteristic of opioid poisoning.

Question 56

A young cachexic male was autopsied in the Department of Forensic Medicine, KMC, Peshawar. The examination findings revealed non-specific asphyxia signs, cyanosed face, and froth from mouth/nose with intense black PM lividity. Which type of poisoning is this?

- **A. Amitriptyline**
- **B. Amphetamines**
- **C. Belladonna**
- **D. Datura**
- **E. Opium**

Correct Answer: E. Opium

Explanation:

- **A. Amitriptyline:** Incorrect. Poisoning with amitriptyline (a tricyclic antidepressant) would present with anticholinergic symptoms and cardiac arrhythmias, not intense black lividity.
- **B. Amphetamines:** Incorrect. Amphetamine poisoning is characterized by hyperthermia, hypertension, and seizures but not froth or black lividity.
- **C. Belladonna:** Incorrect. Belladonna (atropine) poisoning leads to anticholinergic effects like dry skin, dilated pupils, and hallucinations, not asphyxia or lividity.
- **D. Datura:** Incorrect. Datura also causes anticholinergic symptoms, similar to belladonna poisoning.
- **E. Opium:** Correct. Opium and opioid poisoning result in respiratory depression, cyanosis, frothing, and intense lividity due to hypoxia.

Question 57

A traveler during a recreational trip was swimming on a beach. After one hour of swimming, he noticed sudden muscular pain, stiffness of neck, and limb rigidity. What is the diagnosis in this case of poisoning?

- **A. Elapids**
- **B. Octopus**
- **C. Sea snake**
- **D. Stingray**
- **E. Vipers**

Correct Answer: C. Sea snake

Explanation:

- **A. Elapids:** Incorrect. Elapids (e.g., cobras) cause neurotoxicity and paralysis, but the setting here is related to marine poisoning.
- **B. Octopus:** Incorrect. The venom of a blue-ringed octopus causes neurotoxicity, paralysis, and sometimes death, not muscle rigidity and pain.
- **C. Sea snake:** Correct. Sea snake envenomation causes myotoxicity, leading to muscular pain, stiffness, and rhabdomyolysis.
- **D. Stingray:** Incorrect. Stingray injuries typically cause localized pain, swelling, and sometimes systemic reactions but not muscular rigidity.
- **E. Vipers:** Incorrect. Vipers cause hemotoxic effects like bleeding and swelling, not the described symptoms.

Question 58

A person felt some grains of sand lying under the skin or some small insects creeping on the skin giving rise to an itching sensation. Which poisoning causes this condition?

- **A. Alcohol withdrawal**
- **B. Cocaine poisoning**
- **C. Morphine poisoning**
- **D. LSD**
- **E. Organophosphorus poisoning**

Correct Answer: B. Cocaine poisoning

Explanation:

- **A. Alcohol withdrawal:** Incorrect. Alcohol withdrawal causes tremors, seizures, and hallucinations but not the tactile hallucinations described.
- **B. Cocaine poisoning:** Correct. Cocaine use can cause tactile hallucinations, known as "cocaine bugs," where the person feels like insects are crawling under their skin.
- **C. Morphine poisoning:** Incorrect. Morphine poisoning leads to respiratory depression and pinpoint pupils, not tactile hallucinations.
- **D. LSD:** Incorrect. LSD causes visual and auditory hallucinations but rarely tactile hallucinations.
- **E. Organophosphorus poisoning:** Incorrect. This poisoning leads to cholinergic symptoms like salivation, lacrimation, urination, and diarrhea, not tactile hallucinations.

Question 59

The defense based on insanity is an ordinary practice in a court of law, wherein the accused is given the relief. In which one of the following circumstances, the defense based on McNaughton rule cannot be applied?

- **A. Defect of reason**
- **B. Knowledge that act was wrong**
- **C. Nature of act**
- **D. Negligence**
- **E. Quality of act**

Correct Answer: D. Negligence

Explanation:

- **A. Defect of reason:** Incorrect. This is a key criterion for insanity defense under M'Naughton rules.
- **B. Knowledge that act was wrong:** Incorrect. If the accused did not understand the act was wrong, it supports an insanity defense.
- **C. Nature of act:** Incorrect. Lack of understanding the nature of the act is also part of the M'Naughton criteria.
- **D. Negligence:** Correct. Negligence does not involve intent or reasoning and is not covered under M'Naughton rules.
- **E. Quality of act:** Incorrect. Understanding the quality of the act relates to the intent, which is part of the insanity defense.

Question 60

A dead body was recovered from Margalla Hills. In post-mortem examination, black resinous traces were found on hands and mouth, which are similar to that of Curare. What is the fatal dose of this poison?

- **A. 10–20 mg**
- **B. 30–60 mg**
- **C. 80–100 mg**
- **D. 1 gm**
- **E. 2 gm**

Correct Answer: C. 80–100 mg

Explanation:

- **A. 10–20 mg:** Incorrect. This is too low for the lethal dose of curare.
 - **B. 30–60 mg:** Incorrect. This dose is insufficient to cause fatal toxicity.
 - **C. 80–100 mg:** Correct. The fatal dose of curare is typically within this range. Curare causes death by paralysis of respiratory muscles.
 - **D. 1 gm:** Incorrect. This dose is excessively high for curare lethality.
 - **E. 2 gm:** Incorrect. This dose is far beyond the lethal dose for curare.
-

Question 61

Question: In an outbreak of food poisoning in a union council of 3,500 population, 30 cases of food poisoning occurred after attending a wedding ceremony with 6 deaths.

Lead-in: What is the case fatality rate in this scenario?

- A. 10%
- B. 20%
- C. 30%
- D. 40%
- E. 50%

Explanation:

The **case fatality rate (CFR)** is the proportion of deaths among the diagnosed cases of a specific disease or condition, expressed as a percentage. It can be calculated using the formula:

$$\text{CFR} = \frac{\text{Number of Deaths}}{\text{Number of Cases}} \times 100$$

1. Given Data:

- Number of cases = 30
- Number of deaths = 6

2. Calculate CFR:

$$\text{CFR} = \frac{6}{30} \times 100 = 20\%$$

Correct Answer: B. 20%

Explanation of Options:

- **Option A (10%):** Incorrect. This underestimates the CFR.
- **Option B (20%):** Correct. Matches the calculated case fatality rate.
- **Option C (30%):** Incorrect. This overestimates the CFR.
- **Option D (40%):** Incorrect. This is too high based on the data.
- **Option E (50%):** Incorrect. This is also too high and does not match the calculation.

Question 62

Question: A researcher looked at the accuracy of breast cancer self-examination (BSE) in diagnosing breast cancer as compared to mammography. He found that mammography is more accurate in identifying true positives.

Lead-in: How would you express this epidemiologically?

- A. Mammography should be adopted as the only method of screening for breast cancer
- B. Predictive value of BSE is more or less the same as that of mammography
- C. Sensitivity of BSE is more than its specificity
- D. Sensitivity of mammography is more than that of BSE
- E. Sensitivity of BSE is the same as that of mammography

Explanation:

The **sensitivity** of a test is its ability to correctly identify true positives (people with the disease). Since mammography is described as more accurate in identifying true positives compared to BSE, this suggests that **mammography has a higher sensitivity than BSE.**

Correct Answer: D. Sensitivity of mammography is more than that of BSE

Explanation of Options:

- **Option A:** Incorrect. While mammography may be more sensitive, BSE can still be valuable as an initial self-screening tool.
- **Option B:** Incorrect. The question suggests that mammography is more accurate, implying that their predictive values are not the same.
- **Option C:** Incorrect. There is no information given about the specificity of BSE, so we cannot conclude this.
- **Option D:** Correct. This option accurately describes that mammography has a higher sensitivity than BSE.
- **Option E:** Incorrect. The sensitivity of BSE is not the same as mammography according to the information given.

Question 63

Question: The occurrence of cancer was identified between April 1991 and July 2002 for 50,000 troops who served in the first Gulf War (ended April 1991) and 50,000 troops who served elsewhere during the same period.

Lead-in: What is the epidemiological study design in this scenario?

- **A. Case control study**
- **B. Cohort study**
- **C. Cross-sectional study**
- **D. Quasi-experimental study**
- **E. Randomized control trial**

Explanation:

In this scenario, the study is comparing cancer outcomes between two large groups of troops based on their exposure (serving in the Gulf War vs. serving elsewhere). The **cohort study** design is suitable here as it follows two groups with different exposures over time to observe the outcome (cancer incidence). This is a classic setup for a **cohort study**, where outcomes are compared between exposed and non-exposed groups over a defined period.

Correct Answer: B. Cohort study

Explanation of Options:

- **Option A (Case control study):** Incorrect. Case control studies start with outcomes and look back to investigate exposures. Here, we are observing outcomes based on predefined exposure groups.
- **Option B (Cohort study):** Correct. This setup matches a cohort study design, where two groups are followed over time to compare outcomes.
- **Option C (Cross-sectional study):** Incorrect. Cross-sectional studies examine a population at a single point in time, not over an extended period.
- **Option D (Quasi-experimental study):** Incorrect. This study is observational and does not involve any intervention.
- **Option E (Randomized control trial):** Incorrect. There is no randomization or intervention in this observational study.

Question 64

Question: The serum cholesterol levels for three groups of people in a community were recorded in 2020. The mean cholesterol levels of the groups were compared.

Lead-in: Which of the following tests of significance would you employ to determine whether the measurements were significantly different or not?

- **A. Analysis of variance**
- **B. Chi-square test**
- **C. Pearson's r**
- **D. Regression analysis**
- **E. Student's t-test**

Explanation:

When comparing the **means of more than two groups**, the appropriate test is **Analysis of Variance (ANOVA)**. ANOVA allows you to test if there are significant differences between the means of multiple groups.

Correct Answer: A. Analysis of variance

Explanation of Options:

- **Option A (Analysis of variance):** Correct. ANOVA is the correct test for comparing means across three or more groups.
- **Option B (Chi-square test):** Incorrect. Chi-square is used for categorical data, not for comparing means.
- **Option C (Pearson's r):** Incorrect. Pearson's correlation coefficient measures the relationship between two continuous variables, not mean comparisons across groups.
- **Option D (Regression analysis):** Incorrect. Regression analysis is used to predict a dependent variable based on one or more independent variables, not for comparing group means.
- **Option E (Student's t-test):** Incorrect. The t-test is suitable for comparing means between two groups, not three or more.

Question 65

Question: A public health expert wants to study the load of hypertension in Abbottabad district to establish special screening and treatment services.

Lead-in: Which study design is more useful for this?

- **A. Case control study**
- **B. Cross-sectional study**
- **C. Cohort study**
- **D. Experimental study**
- **E. Cohort study**

Explanation:

To determine the **prevalence** or **burden** of hypertension in a population at a specific point in time, a **cross-sectional study** is most appropriate. Cross-sectional studies are commonly used for estimating the prevalence of a condition within a population, as they assess all participants at a single point in time.

Correct Answer: B. Cross-sectional study

Explanation of Options:

- **Option A (Case control study):** Incorrect. Case control studies are used to compare individuals with and without an outcome to assess past exposures, not for prevalence studies.

- **Option B (Cross-sectional study):** Correct. This design is suitable for determining the prevalence of hypertension in a population.
- **Option C (Cohort study):** Incorrect. Cohort studies are better for examining incidence over time, not for assessing prevalence at a single point.
- **Option D (Experimental study):** Incorrect. Experimental studies involve interventions and are not typically used for prevalence assessments.
- **Option E (Cohort study):** Incorrect. As mentioned, cohort studies are longitudinal and are not suitable for point-in-time prevalence measurements.

Question 66

Question: Errors and bias are common in any significance testing, and one may commit either Type-I error or Type-II error.

Lead-in: Which one of the following specifies Type I error?

- **A. Accepting false null hypothesis**
- **B. Accepting true null hypothesis**
- **C. Either one can be accepted or rejected**
- **D. Rejecting false null hypothesis**
- **E. Rejecting true null hypothesis**

Explanation:

In hypothesis testing:

- A **Type I error** occurs when we **reject a true null hypothesis**. This is often referred to as a "false positive" because it indicates a significant effect when there is none.
- A **Type II error** occurs when we **accept (or fail to reject) a false null hypothesis**, which is a "false negative."

The correct definition of a Type I error is rejecting a true null hypothesis.

Correct Answer: E. Rejecting true null hypothesis

Explanation of Options:

- **Option A (Accepting false null hypothesis):** Incorrect. This describes a Type II error, not a Type I error.
- **Option B (Accepting true null hypothesis):** Incorrect. This is a correct decision, not an error.
- **Option C (Either one can be accepted or rejected):** Incorrect. This is irrelevant to the definition of Type I error.
- **Option D (Rejecting false null hypothesis):** Incorrect. This would be a correct decision.
- **Option E (Rejecting true null hypothesis):** Correct. This defines a Type I error.

Question 67

Question: Crude rates are easy to calculate and consist of crude birth rates and crude death rates.

Lead-in: What will be the denominator for calculation of crude birth rate?

- **A. Birth rates minus death rates**
- **B. Mid-year population**
- **C. Number of live births in area**
- **D. Population at risk**
- **E. Total births (Live + still) in the area**

Explanation:

The **crude birth rate** is defined as the number of live births in a given year per 1,000 people in the mid-year population. The formula is:

$$\text{Crude Birth Rate} = \frac{\text{Number of Live Births in a Year}}{\text{Mid-Year Population}} \times 1000$$

Thus, the **denominator** for the calculation of the crude birth rate is the **mid-year population**.

Correct Answer: B. Mid-year population

Explanation of Options:

- **Option A (Birth rates minus death rates):** Incorrect. This does not relate to the calculation of the birth rate.
- **Option B (Mid-year population):** Correct. The mid-year population is the standard denominator for crude birth rates.
- **Option C (Number of live births in area):** Incorrect. This is the numerator, not the denominator.
- **Option D (Population at risk):** Incorrect. Crude birth rates use the mid-year population rather than a specific "population at risk."
- **Option E (Total births (Live + still) in the area):** Incorrect. Only live births are considered in the numerator, and the mid-year population remains the denominator.

Question 68

Question: An epidemiologist calculates the relative risk to show the association of tobacco dip (Naswar) with submandibular gland carcinoma.

Lead-in: What does this rate indicate?

- **A. It is the ratio of risk of disease for those exposed and those not exposed to a particular risk factor**
- **B. Risk cannot be greater than 1**
- **C. Shows the percentage contribution that a risk factor makes towards the occurrence of disease**
- **D. Shows the relationship between a disease and a factor assumed to influence the occurrence of that disease**
- **E. Shows the relationship between two variables as the risk factor of disease**

Explanation:

Relative risk (RR) is a measure used in epidemiology to determine the strength of the association between exposure to a risk factor and the occurrence of a disease. It is calculated as the ratio of the probability of an outcome (disease) occurring in the exposed group to the probability of the outcome occurring in the unexposed group. Therefore, it quantifies the increased or decreased risk of disease associated with a particular exposure.

Correct Answer: A. It is the ratio of risk of disease for those exposed and those not exposed to a particular risk factor

Explanation of Options:

- **Option A:** Correct. This definition accurately describes the concept of relative risk.
- **Option B:** Incorrect. Relative risk can be greater than 1, especially if the exposure is strongly associated with an increased risk of disease.
- **Option C:** Incorrect. Relative risk does not show the percentage contribution; it is a ratio.

- **Option D:** Incorrect. While relative risk does show an association, the precise definition involves the ratio of risks.
- **Option E:** Incorrect. Relative risk compares the incidence of disease between exposed and unexposed groups, rather than showing a relationship between two variables.

Question 69 (Discrepancy)

Question: A research study was conducted to determine the most common age of patients with colorectal cancer, which was found to be 58 years. The researchers published the data graphically.

Lead-in: What would be the most likely shape of this frequency distribution?

- **A. Bell-shaped Gaussian curve**
- **B. Bimodal distribution**
- **C. Negatively skewed**
- **D. Positively skewed**
- **E. Straight line**

Explanation:

The **age distribution** of patients with diseases like colorectal cancer often skews towards older ages because cancer incidence typically increases with age. This means that most of the cases would be concentrated in older age groups, with fewer cases in younger age groups, resulting in a **positively skewed distribution**. In a positively skewed distribution, the tail extends to the right, indicating a concentration of younger ages on the left and a few older ages extending towards the right.

Correct Answer: D. Positively skewed

Explanation of Options:

- **Option A (Bell-shaped Gaussian curve):** Incorrect. A Gaussian or normal distribution is symmetrical, which is unlikely for age distribution in diseases like cancer.
- **Option B (Bimodal distribution):** Incorrect. A bimodal distribution would have two peaks, which is not typical for age distribution in this context.
- **Option C (Negatively skewed):** Incorrect. A negatively skewed distribution would have a long tail on the left side, which is not expected for age-related diseases that are more common in older individuals.
- **Option D (Positively skewed):** Correct. Age distribution for diseases like colorectal cancer is typically positively skewed.
- **Option E (Straight line):** Incorrect. A straight line does not represent a frequency distribution and would not be an appropriate description of the data.

Question 70

Question: The number of attacks of angina per year in a sample of 50 men with a history of myocardial infarction, aged 50-80 years, is an example of which type of variable?

- **A. Nominal variable**
- **B. Qualitative continuous variable**
- **C. Qualitative discrete variable**
- **D. Quantitative continuous variable**
- **E. Quantitative discrete variable**

Explanation:

The **number of attacks of angina** is a **countable** variable that can only take on whole numbers (e.g., 0, 1, 2 attacks). Therefore, it is a **quantitative discrete variable** since it represents a count of occurrences within a certain timeframe (per year) and does not include fractions or decimals.

Correct Answer: E. Quantitative discrete variable

Explanation of Options:

- **Option A (Nominal variable):** Incorrect. Nominal variables are categorical and do not represent quantities.
- **Option B (Qualitative continuous variable):** Incorrect. This is not a continuous variable and is not qualitative.
- **Option C (Qualitative discrete variable):** Incorrect. This is not a qualitative (categorical) variable.
- **Option D (Quantitative continuous variable):** Incorrect. Continuous variables can take any value, including fractions, which does not apply here.
- **Option E (Quantitative discrete variable):** Correct. The number of attacks per year is countable and represents discrete data.

Question 71

Question: Two groups of patients (100 each) undergoing surgery were given antibiotic A and B, respectively. After follow-up, 20 patients in group A developed infection, and 5 in group B.

Lead-in: Which type of study is this?

- **A. Case control study**
- **B. Cross-sectional study**
- **C. Cohort study**
- **D. Non-randomized trial**
- **E. Randomized trial**

Explanation:

This study involves two groups that were given different treatments (antibiotics A and B), and outcomes (infections) were observed over time. Since there is an intervention (two antibiotics given to separate groups), this is an **experimental study**. The description suggests that patients were likely assigned to groups by the researcher, making this a **randomized trial** (assuming random allocation).

Correct Answer: E. Randomized trial

Explanation of Options:

- **Option A (Case control study):** Incorrect. Case-control studies are retrospective and compare past exposures between cases and controls, which does not apply here.
- **Option B (Cross-sectional study):** Incorrect. Cross-sectional studies examine a population at a single point in time, not over a follow-up period.
- **Option C (Cohort study):** Incorrect. Cohort studies are observational, whereas this is an interventional study.
- **Option D (Non-randomized trial):** Incorrect. There is no indication that this study was non-randomized.
- **Option E (Randomized trial):** Correct. The study design fits a randomized trial, assuming random assignment of antibiotics.

Question 72

Question: As a medical student, you were assigned a research project.

Lead-in: In medical statistics, which p-value is considered significant?

- A. $P < 1.00$
- B. $P < 0.5$
- C. $P > 0.5$
- D. $P < 0.05$
- E. $P > 0.05$

Explanation:

In medical and scientific research, a **p-value** of less than 0.05 ($P < 0.05$) is typically considered the threshold for statistical significance. This means there is less than a 5% probability that the observed results occurred by chance, suggesting that the results are statistically significant.

Correct Answer: D. $P < 0.05$

Explanation of Options:

- **Option A ($P < 1.00$):** Incorrect. This threshold is too high to be meaningful for statistical significance.
- **Option B ($P < 0.5$):** Incorrect. This threshold is also too high.
- **Option C ($P > 0.5$):** Incorrect. A p-value greater than 0.5 would suggest no significant result.
- **Option D ($P < 0.05$):** Correct. This is the standard threshold for statistical significance in most fields.
- **Option E ($P > 0.05$):** Incorrect. A p-value greater than 0.05 generally indicates a lack of significance.

Question 73 (Discrepancy)

Question: A researcher conducted a study to determine the association between lung cancer and smoking. The main disadvantage of this study design is recall bias.

Lead-in: Which type of study design was adopted?

- A. Case control
- B. Cohort study
- C. Correlation study design
- D. Cross-sectional study design
- E. Randomized control trials

Explanation:

Recall bias is a common issue in **case-control studies** because participants are often asked to remember past exposures (such as smoking history), which can lead to inaccurate or biased responses. This type of bias is less likely in cohort studies, cross-sectional studies, or randomized control trials, as these do not rely as heavily on participants recalling past information.

Correct Answer: A. Case control

Explanation of Options:

- **Option A (Case control):** Correct. Case-control studies are susceptible to recall bias since they require participants to remember past exposures.
- **Option B (Cohort study):** Incorrect. Cohort studies usually collect data prospectively, reducing the risk of recall bias.

- **Option C (Correlation study design):** Incorrect. This option is not typically affected by recall bias as it usually involves observational data without reliance on past recall.
- **Option D (Cross-sectional study design):** Incorrect. Cross-sectional studies assess data at a single point in time and typically do not require participants to recall past information.
- **Option E (Randomized control trials):** Incorrect. RCTs are prospective and involve intervention, reducing recall bias.

Question 74

Question: In a normal distribution curve, 95% confidence interval falls within which category?

- **A. ± 1 Standard deviation of the mean**
- **B. ± 2 Standard deviations of the mean**
- **C. ± 3 Standard deviations of the mean**
- **D. ± 4 Standard deviations of the mean**
- **E. ± 5 Standard deviations of the mean**

Explanation:

In a **normal distribution**, approximately:

- **68%** of data falls within **± 1 standard deviation** of the mean.
- **95%** of data falls within **± 2 standard deviations** of the mean.
- **99.7%** of data falls within **± 3 standard deviations** of the mean.

Since the question is asking about the 95% confidence interval, it corresponds to **± 2 standard deviations**.

Correct Answer: B. ± 2 Standard deviations of the mean

Explanation of Options:

- **Option A (± 1 Standard deviation):** Incorrect. This covers about 68% of the data.
- **Option B (± 2 Standard deviations):** Correct. This covers approximately 95% of the data in a normal distribution.
- **Option C (± 3 Standard deviations):** Incorrect. This covers about 99.7% of the data.
- **Option D (± 4 Standard deviations):** Incorrect. This is beyond the typical range of a normal distribution for confidence intervals.
- **Option E (± 5 Standard deviations):** Incorrect. This is also outside the range commonly used for confidence intervals.

Question 75

Question: Chi-square is one of the tests of significance used for hypothesis testing.

Lead-in: On which type of data do we apply the Chi-square test?

- **A. Quantitative**
- **B. Continuous**
- **C. Discrete**
- **D. Categorical**
- **E. Confounder**

Explanation:

The **Chi-square test** is used primarily to analyze **categorical data**. It assesses the association or independence between two categorical variables (e.g., gender and smoking status) in a contingency table format. The test is not suitable for continuous or quantitative data.

Correct Answer: D. Categorical

Explanation of Options:

- **Option A (Quantitative):** Incorrect. Quantitative data can be continuous or discrete and is not appropriate for the Chi-square test.
- **Option B (Continuous):** Incorrect. Continuous data is not suitable for the Chi-square test; it is used for categorical data.
- **Option C (Discrete):** Incorrect. While some discrete data can be categorized, the Chi-square test specifically applies to categorical variables.
- **Option D (Categorical):** Correct. Chi-square is designed to test relationships between categorical variables.
- **Option E (Confounder):** Incorrect. A confounder is a variable that influences both the independent and dependent variables in a study, not a type of data.

Question 76

Question: The number of newly diagnosed cases of breast cancer per 100,000 women during a given year is expressed as:

- **A. Incidence**
- **B. Prevalence**
- **C. Proportion**
- **D. Rate**
- **E. Ratio**

Explanation:

The term describes the number of **new cases** of breast cancer in a specified time frame (per year) in a specific population (per 100,000 women). This is a classic definition of **incidence**, which measures the occurrence of new cases over a period of time in a population at risk.

Correct Answer: A. Incidence

Explanation of Options:

- **Option A (Incidence):** Correct. Incidence measures new cases in a population over a specific time period.
- **Option B (Prevalence):** Incorrect. Prevalence includes all cases (new and existing) at a specific point or over a period of time.
- **Option C (Proportion):** Incorrect. Proportion is a general term and does not specify new cases per time unit.
- **Option D (Rate):** Incorrect. While incidence is technically a type of rate, "incidence" is the most precise answer here.
- **Option E (Ratio):** Incorrect. Ratio is a broader term and does not specifically refer to new cases over time.

Question 77

Question: A researcher wants to perform screening for undiagnosed, undetected cases of hepatitis B and carriers of disease by rapidly applying tests and procedures.

Lead-in: What will happen if the cutoff point is raised in screening tests?

- **A. Sensitivity increases and specificity decreases**
- **B. Sensitivity decreases and specificity increases**
- **C. Sensitivity and specificity both will increase**
- **D. Sensitivity and specificity both will decrease**
- **E. Sensitivity and specificity will remain the same**

Explanation:

In screening tests, **raising the cutoff point** makes it harder for the test to identify positive cases, which means **sensitivity will decrease** (fewer true positives are identified) and **specificity will increase** (fewer false positives are classified as positive). This is because a higher cutoff means only individuals with more extreme test results will be considered positive.

Correct Answer: B. Sensitivity decreases and specificity increases

Explanation of Options:

- **Option A:** Incorrect. Raising the cutoff decreases sensitivity and increases specificity, not the reverse.
- **Option B:** Correct. Higher cutoff means lower sensitivity (more false negatives) and higher specificity (fewer false positives).
- **Option C:** Incorrect. Sensitivity and specificity cannot both increase with a change in cutoff.
- **Option D:** Incorrect. Raising the cutoff does not lead to a decrease in both.
- **Option E:** Incorrect. Changing the cutoff will alter both sensitivity and specificity.

Question 78

Question: A researcher is interested in recording the number of individuals in a particular geographic region who have a common cold at some point during the month of February 2015.

Lead-in: Which of the following measures of morbidity would be most appropriate in answering this question?

- **A. Cumulative Incidence**
- **B. Incidence Density**
- **C. Incidence Risk**
- **D. Period Prevalence**
- **E. Point Prevalence**

Explanation:

The researcher is interested in the **number of cases during a specific period** (the month of February 2015).

Period prevalence is the measure used to calculate the proportion of a population that has a condition at any point during a specific period of time.

Correct Answer: D. Period Prevalence

Explanation of Options:

- **Option A (Cumulative Incidence):** Incorrect. Cumulative incidence measures the proportion of new cases over a time period but does not include existing cases.
- **Option B (Incidence Density):** Incorrect. Incidence density is often used for ongoing time and does not fit the description of measuring cases within a defined period.

- **Option C (Incidence Risk):** Incorrect. Incidence risk is similar to cumulative incidence and is not used for prevalence.
- **Option D (Period Prevalence):** Correct. Period prevalence includes all cases (existing and new) during a specific time frame.
- **Option E (Point Prevalence):** Incorrect. Point prevalence measures the proportion of cases at a single point in time, not over a period.

Question 83

Question: Fourth-year medical students were engaged in a research study to find the correlation between smoking and lung cancer. While setting objectives for their study, which of the following characteristics of objectives should be kept in mind?

- **A. Complex**
- **B. Costly**
- **C. Independent of time**
- **D. Measurable**
- **E. Over-ambitious**

Explanation:

When setting objectives for a research study, it is essential that objectives are **measurable**. Measurable objectives allow researchers to clearly define and assess the outcomes of the study. This ensures that the study has clear, achievable, and assessable goals, which is critical in scientific research to evaluate the results accurately.

Correct Answer: D. Measurable

Explanation of Options:

- **Option A (Complex):** Incorrect. Objectives should be clear and straightforward, not unnecessarily complex.
- **Option B (Costly):** Incorrect. While cost is a consideration, it is not a characteristic of a well-formulated objective.
- **Option C (Independent of time):** Incorrect. Objectives should ideally have a time frame to track progress.
- **Option D (Measurable):** Correct. Measurability is crucial for assessing whether the objectives are achieved.
- **Option E (Over-ambitious):** Incorrect. Objectives should be realistic and achievable, not over-ambitious.

Question 84

Question: In a study, the hypothesis was stated as "Increased levels of glycosylated hemoglobin levels for prolonged periods of time in diabetic individuals increase the risk for myocardial infarction."

Lead-in: In this study, which one of the following statements fits the above-mentioned hypothesis?

- **A. It is an assumption made before the start of research**
- **B. It is a conclusion drawn before the start of research**
- **C. It shows that this hypothesis and null hypothesis are identical in this study**
- **D. It shows significance level**
- **E. It shows that the above statement is a tested theory**

Explanation:

A **hypothesis** is a statement made before the start of a study, based on existing knowledge or theory, that proposes a relationship between variables (e.g., glycosylated hemoglobin levels and myocardial infarction risk). This hypothesis serves as an **assumption** that will be tested during the research.

Correct Answer: A. It is an assumption made before the start of research

Explanation of Options:

- **Option A (It is an assumption made before the start of research):** Correct. A hypothesis is a preliminary assumption or proposition that is tested through research.
- **Option B (It is a conclusion drawn before the start of research):** Incorrect. Conclusions are drawn after research, based on the study's findings.
- **Option C (It shows that this hypothesis and null hypothesis are identical in this study):** Incorrect. The hypothesis and null hypothesis are typically opposites; they are not identical.
- **Option D (It shows significance level):** Incorrect. The hypothesis does not show significance level; significance is determined after testing the hypothesis.
- **Option E (It shows that the above statement is a tested theory):** Incorrect. A hypothesis is not a tested theory; it is tested during the research process to become validated or rejected.

Question 85

Question: Estimation of the magnitude of health problems is required for future planning and administrative purposes.

Lead-in: Which of the following rates would a public health officer calculate for this purpose?

- **A. Birth**
- **B. Death**
- **C. Growth**
- **D. Incidence**
- **E. Prevalence**

Explanation:

When estimating the magnitude of a health problem in a population, **prevalence** is commonly used.

Prevalence provides a snapshot of the total number of cases (both new and existing) of a health condition in a population at a given time, giving insight into the overall burden of the problem, which is crucial for planning and administrative purposes.

Correct Answer: E. Prevalence

Explanation of Options:

- **Option A (Birth):** Incorrect. Birth rates provide information about population growth, not the magnitude of a specific health problem.
 - **Option B (Death):** Incorrect. Death rates indicate mortality, not the magnitude of the disease burden.
 - **Option C (Growth):** Incorrect. Growth rates refer to population increase and do not provide data on health problem magnitude.
 - **Option D (Incidence):** Incorrect. Incidence measures only new cases, not the total burden, which prevalence captures.
 - **Option E (Prevalence):** Correct. Prevalence reflects the total burden of a health problem at a given time, useful for planning and resources allocation.
-

Question 86

Question: The government wants to collect morbidity data for districts to allocate resources equitably. However, it does not have sufficient human resources and time to conduct a detailed survey.

Lead-in: Which one of the following indicators can the government obtain quickly from district hospitals to know about morbidity status?

- **A. Monthly expenditure of the hospital**
- **B. Total bed occupancy of a hospital in a month**
- **C. Total deaths in admitted patients per month**
- **D. Total number of deliveries performed per month**
- **E. Total number of surgeries performed per month**

Explanation:

To gauge **morbidity** status quickly, an indicator related to **bed occupancy** can provide insight into the volume of patients requiring care, which indirectly reflects morbidity rates. High bed occupancy can indicate a higher number of cases requiring inpatient treatment, which suggests a higher morbidity level in the population.

Correct Answer: B. Total bed occupancy of a hospital in a month

Explanation of Options:

- **Option A (Monthly expenditure of the hospital):** Incorrect. This does not provide information directly related to morbidity.
- **Option B (Total bed occupancy of a hospital in a month):** Correct. Bed occupancy can reflect the number of patients being treated, providing indirect insight into morbidity.
- **Option C (Total deaths in admitted patients per month):** Incorrect. Deaths reflect mortality, not morbidity.
- **Option D (Total number of deliveries performed per month):** Incorrect. This is specific to obstetric services and does not reflect general morbidity.
- **Option E (Total number of surgeries performed per month):** Incorrect. This indicates surgical workload but does not reflect overall morbidity.

Question 87

Question: In analytical studies, we develop associations between risk factors and a disease.

Lead-in: Which of the following in case-control studies ascertains whether there is an association between exposure status and occurrence of disease?

- **A. Attributable risk**
- **B. Odds ratio**
- **C. Population attributable risk**
- **D. p-value**
- **E. Relative risk**

Explanation:

In **case-control studies**, the **odds ratio (OR)** is the main measure used to determine the association between an exposure and an outcome (disease). It compares the odds of exposure in cases (those with the disease) to the odds of exposure in controls (those without the disease). Unlike relative risk, which is used in cohort studies, the odds ratio is suitable for case-control studies since the study design is retrospective and does not allow for direct calculation of incidence.

Correct Answer: B. Odds ratio

Explanation of Options:

- **Option A (Attributable risk):** Incorrect. Attributable risk is used in cohort studies to measure the risk difference, not in case-control studies.
- **Option B (Odds ratio):** Correct. The odds ratio is the standard measure of association in case-control studies.
- **Option C (Population attributable risk):** Incorrect. This is a measure that reflects the proportion of disease in the population due to the exposure, not used in case-control study analysis.
- **Option D (p-value):** Incorrect. The p-value tests statistical significance but does not measure association directly.
- **Option E (Relative risk):** Incorrect. Relative risk is calculated in cohort studies, not case-control studies.

Question 88

Emotional intelligence is characterized by which one of the following?

- **A. Better interpersonal skills**
- **B. Good sense of humor**
- **C. High abstract thinking**
- **D. High critical thinking abilities**
- **E. Proficient in problem solving**

Correct Answer: A. Better interpersonal skills

Explanation:

- **A. Better interpersonal skills:** Correct. Emotional intelligence involves recognizing, understanding, and managing emotions, which are critical for interpersonal interactions.
- **B. Good sense of humor:** Incorrect. While humor may help with social relationships, it is not a defining feature of emotional intelligence.
- **C. High abstract thinking:** Incorrect. This relates to cognitive intelligence, not emotional intelligence.
- **D. High critical thinking abilities:** Incorrect. Critical thinking is more relevant to cognitive skills rather than emotional intelligence.
- **E. Proficient in problem solving:** Incorrect. Problem-solving relies more on intellectual skills than emotional intelligence.

Question 89

When the group disagrees over how the work should get done, the type of conflict experienced by this group is ___ conflict.

- **A. Process conflict**
- **B. Relationship conflict**

- C. Task-related conflict
- D. Traditional conflict
- E. Un-explainable

Correct Answer: A. Process conflict

Explanation:

- **A. Process conflict:** Correct. Process conflict refers to disagreements about how work should be completed, including roles and responsibilities.
- **B. Relationship conflict:** Incorrect. Relationship conflict arises due to interpersonal tensions or issues.
- **C. Task-related conflict:** Incorrect. Task conflict involves disagreements about the content or goals of the work, not how it should be done.
- **D. Traditional conflict:** Incorrect. This is a broad term and does not specifically address the question.
- **E. Un-explainable:** Incorrect. This is not a valid type of conflict.

Question 90

An 80-year-old female patient with atrial fibrillation came to the ER with right-sided weakness for the last 1 hour. Her past medical history includes transient ischemic attack, hypertension, and diabetes. She was taking warfarin, which she stopped after a fall one month back. Her examination showed weakness in both upper and lower limbs on the right side. A CT scan head showed no intracranial bleed. What is the likely diagnosis?

- A. Bacterial meningitis
- B. Encephalitis
- C. Intracranial mass
- D. Ischemic stroke
- E. Tuberculous meningitis

Correct Answer: D. Ischemic stroke

Explanation:

- **A. Bacterial meningitis:** Incorrect. Meningitis presents with fever, neck stiffness, and altered mental status, not focal neurological deficits.
- **B. Encephalitis:** Incorrect. Encephalitis also presents with fever and altered mental status, not isolated limb weakness.
- **C. Intracranial mass:** Incorrect. A mass might cause focal deficits but is unlikely to present acutely and without imaging findings.
- **D. Ischemic stroke:** Correct. The patient's atrial fibrillation, stopped anticoagulation, and sudden onset of unilateral weakness strongly suggest ischemic stroke.
- **E. Tuberculous meningitis:** Incorrect. This presents with chronic symptoms such as fever, weight loss, and headache, not acute focal deficits.

Question 91

A 19-year-old female student living in a hostel presented to the ER with a 1-day history of fever and headache. On physical examination, her temperature was 39.1°C, and her heart rate was 124/min. She was toxic, had neck stiffness, and there were small, purple, and non-blanching petechiae on both her legs. Lumbar puncture showed elevated opening pressure, elevated protein, pleocytosis, and low glucose. What is the likely diagnosis?

- **A. Fungal meningitis**
- **B. Meningococcal meningitis**
- **C. Subarachnoid hemorrhage**
- **D. Tuberculous meningitis**
- **E. Viral encephalitis**

Correct Answer: B. Meningococcal meningitis

Explanation:

- **A. Fungal meningitis:** Incorrect. Fungal meningitis is chronic and occurs in immunocompromised patients, not in healthy young individuals.
- **B. Meningococcal meningitis:** Correct. The classic presentation includes acute fever, headache, neck stiffness, and petechial rash caused by *Neisseria meningitidis*.
- **C. Subarachnoid hemorrhage:** Incorrect. This presents with a thunderclap headache and does not cause fever or petechiae.
- **D. Tuberculous meningitis:** Incorrect. This presents with chronic symptoms like weight loss and low-grade fever, not acute findings.
- **E. Viral encephalitis:** Incorrect. Encephalitis causes fever, altered consciousness, and seizures, not a rash or meningitic signs.

Question 92

A 20-year-old female patient presented with weakness in both lower limbs, which initially started as numbness in toes. She had diarrhea two weeks back, which resolved by itself. On examination, power was 0/5 in lower limbs, and deep tendon reflexes were absent in lower limbs. What is the treatment of choice?

- **A. Antibiotics**
- **B. Antiviral**
- **C. Plasmapheresis**
- **D. Spinal surgery**
- **E. Thiamine and B12 administration**

Correct Answer: C. Plasmapheresis

Explanation:

- **A. Antibiotics:** Incorrect. This is not appropriate for the described symptoms, as there is no indication of bacterial infection.
- **B. Antiviral:** Incorrect. There is no evidence of a viral cause requiring antiviral therapy.
- **C. Plasmapheresis:** Correct. The patient likely has Guillain-Barré syndrome (GBS), which is often triggered by a preceding infection and presents with ascending paralysis and absent reflexes. Plasmapheresis is a key treatment.
- **D. Spinal surgery:** Incorrect. Surgery is not indicated in GBS, which is an autoimmune demyelinating condition.
- **E. Thiamine and B12 administration:** Incorrect. Deficiency of these vitamins causes chronic neurological conditions, not acute paralysis.

Question 93

A 79-year-old stumbled and sustained a minor head injury 2 weeks ago. He had become increasingly confused, drowsy, and unsteady. He had fluctuating GCS scale. He was using warfarin for atrial fibrillation. What is the most likely diagnosis?

- **A. Cerebellar hemorrhage**
- **B. Epidural hemorrhage**
- **C. Extradural hemorrhage**
- **D. Subarachnoid hemorrhage**
- **E. Subdural hemorrhage**

Correct Answer: E. Subdural hemorrhage

Explanation:

- **A. Cerebellar hemorrhage:** Incorrect. A cerebellar hemorrhage would cause dizziness, ataxia, and cranial nerve deficits, but the history and symptoms do not point to this.
 - **B. Epidural hemorrhage:** Incorrect. Epidural hemorrhage is usually associated with an arterial bleed (middle meningeal artery) and presents acutely, not weeks later.
 - **C. Extradural hemorrhage:** Incorrect. This term is synonymous with epidural hemorrhage and does not match the described delayed progression.
 - **D. Subarachnoid hemorrhage:** Incorrect. Subarachnoid hemorrhage typically presents with a thunderclap headache and rapid deterioration, not progressive symptoms.
 - **E. Subdural hemorrhage:** Correct. Subdural hemorrhage is common in elderly patients, especially those on anticoagulants, and often presents with delayed symptoms like confusion and drowsiness.
-

Question 94

A man of 65 years was brought by his family for having lost his way back home several times. He could not recall the events for the past few months. On examination, his pulse rate is 70/min regular and blood pressure (BP) 150/90 mm Hg. What is the likely diagnosis?

- **A. Alzheimer disease**
- **B. Cerebrovascular disease**
- **C. Depression**
- **D. Hepatic encephalopathy**
- **E. Parkinson disease**

Correct Answer: A. Alzheimer disease

Explanation:

- **A. Alzheimer disease:** Correct. Progressive memory loss and disorientation are hallmark features of Alzheimer disease, a common cause of dementia in elderly individuals.
- **B. Cerebrovascular disease:** Incorrect. Cerebrovascular disease may cause vascular dementia, but it typically involves stepwise progression and focal neurological findings.
- **C. Depression:** Incorrect. Depression may mimic dementia (pseudodementia), but the gradual progression described here fits Alzheimer disease.
- **D. Hepatic encephalopathy:** Incorrect. This condition involves altered mental status due to liver dysfunction, which is not mentioned in the history.
- **E. Parkinson disease:** Incorrect. Parkinson disease primarily presents with motor symptoms, not memory loss or disorientation.

Question 95

A 45-year-old man presented with recurrent transient ischemic attacks. He had progressive memory loss and right-sided monoplegia (right upper limb). On examination, his blood pressure was 170/100 and pulse rate was 100/min irregularly irregular. His temperature was 98°F. What is the diagnosis?

- **A. Alzheimer disease**
- **B. Encephalitis**
- **C. Multi-infarct dementia**
- **D. Parkinsonism**
- **E. Prion disease**

Correct Answer: C. Multi-infarct dementia

Explanation:

- **A. Alzheimer disease:** Incorrect. Alzheimer disease causes memory loss but lacks the focal neurological signs seen here.
- **B. Encephalitis:** Incorrect. Encephalitis presents with fever, altered consciousness, and seizures, which are not present here.
- **C. Multi-infarct dementia:** Correct. This is a type of vascular dementia caused by multiple small strokes or TIAs, leading to progressive cognitive decline and focal deficits like monoplegia.
- **D. Parkinsonism:** Incorrect. Parkinsonism primarily causes motor symptoms, not memory loss or TIAs.
- **E. Prion disease:** Incorrect. Prion diseases, like Creutzfeldt-Jakob disease, cause rapidly progressive dementia with myoclonus, not focal neurological deficits.

Question 96

A young man of 40 years had recurrent episodes of involuntary movements of the whole body with loss of consciousness for the last one year. He had mouth frothing and urinary incontinence during the episode. He was hemodynamically stable. What is the diagnosis?

- **A. Intoxication**
- **B. Migraine**
- **C. Psychogenic non-epileptic attacks**
- **D. Seizure disorder**
- **E. TIAs**

Correct Answer: D. Seizure disorder

Explanation:

- **A. Intoxication:** Incorrect. While intoxication may cause confusion or agitation, it does not lead to repetitive, stereotyped seizure episodes.
- **B. Migraine:** Incorrect. Migraines may cause aura and neurological symptoms but do not cause loss of consciousness, frothing, or incontinence.
- **C. Psychogenic non-epileptic attacks:** Incorrect. These mimic seizures but lack features like urinary incontinence and frothing.
- **D. Seizure disorder:** Correct. The classic presentation of generalized tonic-clonic seizures includes involuntary movements, loss of consciousness, frothing, and incontinence.
- **E. TIAs:** Incorrect. TIAs cause transient neurological deficits without loss of consciousness or involuntary movements.

Question 97

An 8-year-old boy was brought by his family for episodes of mental disconnection but no involuntary movements. These episodes occurred briefly for a few seconds and increased in severity with the passage of time. What is the diagnosis?

- **A. Atonic seizures**
- **B. Absence seizures**
- **C. Metabolic encephalopathy**
- **D. Psychogenic attacks**
- **E. TIAs**

Correct Answer: B. Absence seizures

Explanation:

- **A. Atonic seizures:** Incorrect. Atonic seizures cause sudden loss of muscle tone, leading to falls, not episodes of disconnection.
- **B. Absence seizures:** Correct. Absence seizures are characterized by brief episodes of staring or "disconnection," typically lasting seconds, without motor involvement.
- **C. Metabolic encephalopathy:** Incorrect. This presents with confusion or altered consciousness, not stereotypical episodes of disconnection.
- **D. Psychogenic attacks:** Incorrect. These mimic neurological events but lack the stereotypical, brief nature of absence seizures.
- **E. TIAs:** Incorrect. TIAs cause transient neurological deficits and are rare in children.

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Question 98

A 23-year-old female was brought by her brother to the medical emergency with lower limb weakness for the last 3 days. She also had pain and numbness in the lower limbs. She was also complaining of retention of urine for the last 1 day. She gave no history of fever or other illness in the past 1 month. Her upper limbs were completely normal. Clinical examination showed signs of an upper motor neuron lesion in the lower limbs and sensory level at T4. What is the most probable diagnosis?

- **A. Guillain-Barre Syndrome**
- **B. Multiple Sclerosis**
- **C. Poliomyelitis**
- **D. Pott's Disease**
- **E. Transverse Myelitis**

Correct Answer: E. Transverse Myelitis

Explanation:

- **A. Guillain-Barre Syndrome:** Incorrect. GBS causes ascending paralysis with absent reflexes (lower motor neuron lesion), not an upper motor neuron lesion or sensory level.

- **B. Multiple Sclerosis:** Incorrect. MS typically presents with relapsing-remitting neurological deficits and does not usually cause a distinct sensory level.
- **C. Poliomyelitis:** Incorrect. Poliomyelitis affects lower motor neurons, leading to flaccid paralysis, not upper motor neuron signs.
- **D. Pott's Disease:** Incorrect. Pott's disease (tuberculous spondylitis) can cause spinal cord compression, but it often involves chronic back pain and systemic symptoms like fever or weight loss, which are absent here.
- **E. Transverse Myelitis:** Correct. Transverse myelitis causes a clear sensory level, upper motor neuron signs, and bladder dysfunction (urine retention).

Question 99

A 40-year-old female presented with a one-year history of on-and-off blurring of vision on hot summer days. Now she is complaining of pins and needle sensations in the right hand and weakness of the left leg for the past 3 days. What is the most likely diagnosis?

- **A. Ischemic Stroke**
- **B. Multiple Sclerosis**
- **C. Oligodendroglioma**
- **D. Transverse Myelitis**
- **E. Trauma to the Cervical Cord**

Correct Answer: B. Multiple Sclerosis

Explanation:

- **A. Ischemic Stroke:** Incorrect. Stroke causes sudden, focal neurological deficits and does not present with a history of intermittent symptoms or involvement of multiple body regions over time.
- **B. Multiple Sclerosis:** Correct. MS presents with relapsing-remitting neurological symptoms, often exacerbated by heat (Uhthoff's phenomenon), with multifocal neurological deficits like sensory changes and motor weakness.
- **C. Oligodendroglioma:** Incorrect. Oligodendroglioma is a brain tumor and would not cause such a relapsing-remitting course.
- **D. Transverse Myelitis:** Incorrect. Transverse myelitis causes an acute onset of motor and sensory deficits with a sensory level, not intermittent symptoms.
- **E. Trauma to the Cervical Cord:** Incorrect. Trauma causes acute deficits and would not explain the intermittent symptoms or exacerbation with heat.

Question 100

A 20-year-old girl was brought to the medical emergency with slowly progressing ascending paralysis of lower limbs for the last week. Clinical examination showed pulse 110/min, BP 100/70, and respiratory rate 22/min.

Power in the lower limbs was 0/5 and upper limbs 1/5. Reflexes were absent, and planters were down-going. She was treated for an acute upper respiratory tract infection a week ago. What is the diagnosis?

- **A. Guillain-Barre Syndrome**
- **B. Hypokalemic Periodic Paralysis**
- **C. Poliomyelitis**
- **D. Spinal Shock after Trauma**
- **E. Transverse Myelitis**

Correct Answer: A. Guillain-Barre Syndrome

Explanation:

- **A. Guillain-Barre Syndrome:** Correct. GBS is characterized by ascending paralysis, areflexia, and preceding infection (e.g., upper respiratory tract infection). Reflexes are absent, and there is no sensory level.
- **B. Hypokalemic Periodic Paralysis:** Incorrect. Hypokalemia causes flaccid paralysis without reflex loss and is not associated with an upper respiratory tract infection.
- **C. Poliomyelitis:** Incorrect. Poliomyelitis affects lower motor neurons and causes flaccid paralysis, but it does not present with ascending paralysis or preceding respiratory infection.
- **D. Spinal Shock after Trauma:** Incorrect. There is no history of trauma in this case.
- **E. Transverse Myelitis:** Incorrect. Transverse myelitis causes a sensory level, which is not present here.

Question 101

A 25-year-old man who is a driver by profession and has cannabis abuse for the last 15 years presented with a serious suicidal attempt from which he survived and remained admitted to the ICU for a week. On mental state examination, you found that he is still having serious suicidal ideations because of underlying severe depression for which he is already taking fluoxetine 40 mg and lithium 800 mg per day. He lives alone and is unwilling to stay longer in the psychiatry unit. Which of the following will be your next strategy for treatment of this acutely suicidal patient?

- **A. Add small dose of antipsychotic and discharge**
- **B. Add tricyclic antidepressant and discharge**
- **C. Give advice to stop cannabis and discharge**
- **D. Give electroconvulsive therapy if he consents**
- **E. Start CBT (Cognitive Behavior Therapy)**

Correct Answer: D. Give electroconvulsive therapy if he consents

Explanation:

- **A. Add small dose of antipsychotic and discharge:** Incorrect. Adding an antipsychotic is not appropriate for treating acute suicidality in major depression.

- **B. Add tricyclic antidepressant and discharge:** Incorrect. Tricyclic antidepressants have a higher risk of toxicity in overdose and are not ideal in suicidal patients.
- **C. Give advice to stop cannabis and discharge:** Incorrect. While addressing cannabis abuse is important, this is not the immediate solution for acute suicidality.
- **D. Give electroconvulsive therapy if he consents:** Correct. ECT is highly effective for severe depression with suicidal ideation and is a rapid treatment option.
- **E. Start CBT (Cognitive Behavior Therapy):** Incorrect. While CBT is useful for long-term management, it is not appropriate for acute suicidality due to its slower onset of effect.

Question 102

A 22-year-old man presented to your clinic with increased talk, disinhibited behavior, grandiose delusions, over-religiosity, and inability to sleep for the last one month. He sometimes smokes cigarettes and cannabis also. He had a similar episode a few years ago and got better with valproate sodium, which he continued for several months. What is the most probable diagnosis in this case?

- **A. Cannabis dependence**
- **B. Cannabis intoxication**
- **C. Epilepsy**
- **D. Manic episode**
- **E. Schizophrenia**

Correct Answer: D. Manic episode

Explanation:

- **A. Cannabis dependence:** Incorrect. Cannabis dependence would present with chronic substance use issues, not episodic mood symptoms like mania.
- **B. Cannabis intoxication:** Incorrect. Intoxication would cause acute behavioral changes, but this patient has symptoms lasting a month and a prior similar episode.
- **C. Epilepsy:** Incorrect. Epilepsy involves recurrent seizures, not persistent mood symptoms or grandiose delusions.
- **D. Manic episode:** Correct. The patient has hallmark manic symptoms, including grandiosity, disinhibition, reduced need for sleep, and a prior response to mood stabilizers like valproate.
- **E. Schizophrenia:** Incorrect. Schizophrenia involves chronic psychosis with negative symptoms, not episodic mood changes as described here.

Question 103

A 20-year-old medical student experiences episodes of sudden extreme anxiety with palpitations, restlessness, sweating, body tremors, and an impending fear of death, lasting for 20–30 minutes and spontaneously resolving without medication. The frequency of these episodes is gradually increasing without any apparent stressful event. What is the most likely diagnosis?

- **A. Death phobia**
- **B. Dissociative disorder**
- **C. Malingering**
- **D. Panic disorder**
- **E. Thyrotoxicosis**

Correct Answer: D. Panic disorder

Explanation:

- **A. Death phobia:** Incorrect. Death phobia involves an excessive fear of death but does not cause the physical symptoms of anxiety described here.
- **B. Dissociative disorder:** Incorrect. Dissociative disorders involve disruptions in consciousness, memory, or identity, not acute anxiety episodes.
- **C. Malingering:** Incorrect. Malingering is the intentional feigning of symptoms for personal gain, which is not evident here.
- **D. Panic disorder:** Correct. Recurrent, unprovoked panic attacks with symptoms like palpitations, sweating, and fear of death are classic for panic disorder.
- **E. Thyrotoxicosis:** Incorrect. Thyrotoxicosis can mimic anxiety but is associated with additional symptoms like weight loss, heat intolerance, and tachycardia, which are not mentioned.

Question 104

A patient who believes that people can actually put their thoughts into his mind is called as:

- **A. Brain washing**
- **B. Delusion of control**
- **C. Mind reading**
- **D. Thought broadcast**
- **E. Thought insertion**

Correct Answer: E. Thought insertion

Explanation:

- **A. Brain washing:** Incorrect. Brainwashing involves externally imposed behavioral changes, not specific beliefs about thought manipulation.
- **B. Delusion of control:** Incorrect. Delusion of control involves the belief that external forces are controlling one's actions, not inserting thoughts.
- **C. Mind reading:** Incorrect. Mind reading refers to the belief that others can perceive one's thoughts, not insert them.
- **D. Thought broadcast:** Incorrect. Thought broadcasting is the belief that one's thoughts are being transmitted to others.

- **E. Thought insertion:** Correct. This is the belief that external entities are placing thoughts into one's mind.

Question 105

A school teacher who has chronic daily headaches without any vomiting and his neuroimaging is clear is also suffering from increased intraocular pressure and glaucoma. He requests prophylactic treatment for his headache. Which of the following will be avoided in this patient?

- **A. Paracetamol**
- **B. Propranolol**
- **C. Pizotifen**
- **D. Tricyclic antidepressants**
- **E. Topiramate**

Correct Answer: C. Pizotifen

Explanation:

- **A. Paracetamol:** Incorrect. Paracetamol is a safe option for headache prophylaxis in patients with glaucoma.
- **B. Propranolol:** Incorrect. Propranolol, a beta-blocker, is safe and effective for migraine prophylaxis and does not worsen glaucoma.
- **C. Pizotifen:** Correct. Pizotifen has anticholinergic effects that can exacerbate glaucoma by increasing intraocular pressure.
- **D. Tricyclic antidepressants:** Incorrect. While TCAs can have mild anticholinergic effects, they are not as potent as pizotifen in worsening glaucoma.
- **E. Topiramate:** Incorrect. Topiramate is effective for migraine prophylaxis and does not affect intraocular pressure.

Question 106

A young lady who developed severe headaches was given narcotic analgesics for pain relief. She recovered quickly with that and would use the same medicine without any prescription. Gradually, she increased the amount of that narcotic analgesic as the same amount of medicine would not give her relief from pain. This phenomenon is called as:

- **A. Dependence**
- **B. Desensitization**
- **C. Habituation**
- **D. Intoxication**
- **E. Tolerance**

Correct Answer: E. Tolerance

Explanation:

- **A. Dependence:** Incorrect. Dependence refers to the physical or psychological need to continue using a drug to avoid withdrawal symptoms.
- **B. Desensitization:** Incorrect. Desensitization refers to decreased receptor responsiveness due to repeated exposure, not requiring higher doses of a drug.
- **C. Habituation:** Incorrect. Habituation involves becoming accustomed to a stimulus, but it is not specific to increasing doses.
- **D. Intoxication:** Incorrect. Intoxication refers to the immediate effects of excessive drug use, not the need for increasing doses.
- **E. Tolerance:** Correct. Tolerance is the phenomenon where increasing doses of a drug are required to achieve the same therapeutic effect.

Question 107

A 45-year-old man is brought in with an overdose of some drug of abuse. The family doesn't know which drug he is using nowadays. On examination, you find pinpoint pupils, oversedation, dry mouth, and shallow breathing. The most likely overdose is because of which drug?

- **A. Alcohol**
- **B. Cannabis**
- **C. Cocaine**
- **D. Methylphenidate**
- **E. Opioids**

Correct Answer: E. Opioids

Explanation:

- **A. Alcohol:** Incorrect. Alcohol overdose causes sedation and respiratory depression but does not lead to pinpoint pupils.
 - **B. Cannabis:** Incorrect. Cannabis intoxication causes euphoria, paranoia, and tachycardia, not pinpoint pupils or shallow breathing.
 - **C. Cocaine:** Incorrect. Cocaine overdose causes mydriasis (dilated pupils) and agitation, not pinpoint pupils or sedation.
 - **D. Methylphenidate:** Incorrect. Methylphenidate, a stimulant, causes agitation, tachycardia, and mydriasis.
 - **E. Opioids:** Correct. Opioid overdose presents with pinpoint pupils, respiratory depression, sedation, and dry mouth.
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Question 108

Depression is a common disorder affecting everyone in different stages of life. Mild depression may not need any medication, but if the patient has moderate or severe symptoms most of the time on most days, they will need to be treated. The symptoms must persist for at least what certain amount of time before we can diagnose it as a depressive episode?

- A. At least six months
- B. At least six weeks
- C. At least one month
- D. At least two weeks
- E. At least one week

Correct Answer: D. At least two weeks

Explanation:

- **A. At least six months:** Incorrect. This duration applies to chronic disorders, not depressive episodes.
- **B. At least six weeks:** Incorrect. While treatment often lasts this long, the diagnostic criteria require symptoms for a shorter duration.
- **C. At least one month:** Incorrect. One month is not the minimum duration required for diagnosis.
- **D. At least two weeks:** Correct. According to DSM-5 criteria, depressive episodes require symptoms to persist for at least two weeks.
- **E. At least one week:** Incorrect. One week is insufficient for diagnosing a depressive episode.

Question 109

A young girl, age 19 years, presented to the hospital with impulsivity, self-injurious behavior, mood swings, and benzodiazepine overuse. She says that everyone dislikes her, and nobody is sincere to her. Her elder sister adds that she has behaved this way since her late childhood and has gradually lost all her friends because of her unpredictable behavior. She is most likely suffering from which of the following?

- A. Adolescence crisis
- B. Bipolar affective disorder
- C. Delusional disorder
- D. Drug addiction
- E. Personality disorder

Correct Answer: E. Personality disorder

Explanation:

- **A. Adolescence crisis:** Incorrect. This term refers to normal developmental challenges during adolescence, not a persistent pattern of behavior.

- **B. Bipolar affective disorder:** Incorrect. Bipolar disorder involves distinct episodes of mania and depression, not the chronic interpersonal issues described.
- **C. Delusional disorder:** Incorrect. This disorder involves fixed, non-bizarre delusions, not impulsive or erratic behavior.
- **D. Drug addiction:** Incorrect. While benzodiazepine use is noted, it is not the primary issue driving her behavior.
- **E. Personality disorder:** Correct. Features like impulsivity, unstable relationships, and mood swings are characteristic of borderline personality disorder.

Question 110

A young patient of 30 years presented to neurosurgery OPD with complaints of lower back pain for the last one month, which was associated with urinary and bowel incontinence. The patient was also having weakness in both lower limbs and was walking with support. On examination, the patient was having mixed upper motor neuron signs in both lower limbs, and power in both L1 was 4/5 bilaterally. Which level of the spinal cord might be involved?

- **A. Cauda equina region**
- **B. Cervical cord**
- **C. Conus area**
- **D. Dorsal cord**
- **E. Lumbar cord**

Correct Answer: C. Conus area

Explanation:

- **A. Cauda equina region:** Incorrect. Cauda equina syndrome presents with lower motor neuron signs only and sensory deficits in a saddle distribution, not mixed UMN/LMN signs.
- **B. Cervical cord:** Incorrect. Cervical cord lesions would affect all four limbs and are not limited to lower limbs.
- **C. Conus area:** Correct. Conus medullaris syndrome involves mixed UMN and LMN signs, urinary/bowel incontinence, and lower limb weakness.
- **D. Dorsal cord:** Incorrect. Thoracic spinal cord involvement would not cause bowel/bladder issues or LMN signs.
- **E. Lumbar cord:** Incorrect. Lumbar lesions typically cause lower motor neuron signs, not mixed signs.

Question 111

An old lady aged 60 years presented to the emergency department with a history of sudden onset of weakness of the right side associated with dysphasia. She was also having weakness on the left side of the face. On examination, the right planter was upgoing. Where do you think the pathology in the brain is?

- A. Left brain stem
- B. Left parietal region
- C. Right brain stem
- D. Left temporal region
- E. Right parietal region

Correct Answer: B. Left parietal region

Explanation:

- **A. Left brain stem:** Incorrect. Brainstem lesions usually cause crossed findings (e.g., cranial nerve deficit on one side and motor deficits on the opposite side).
- **B. Left parietal region:** Correct. Weakness on the right side and dysphasia (language dysfunction) point to the left hemisphere, specifically the parietal lobe, which is involved in motor and sensory function and speech in right-handed individuals.
- **C. Right brain stem:** Incorrect. This would cause motor weakness on one side and cranial nerve deficits on the other.
- **D. Left temporal region:** Incorrect. Temporal lobe lesions cause issues with memory and auditory processing, not motor or language deficits.
- **E. Right parietal region:** Incorrect. This would cause left-sided weakness, not right.

Question 112

An 11-year-old male child presented to OPD with gait disturbance for the last 1 day. He had chickenpox one month back. On examination, he has both truncal and limb ataxia with associated dysarthria. What is the most likely diagnosis?

- A. Acute cerebellar ataxia
- B. Chorea
- C. Guillain-Barre Syndrome
- D. Polio Myelitis
- E. Transverse Myelitis

Correct Answer: A. Acute cerebellar ataxia

Explanation:

- **A. Acute cerebellar ataxia:** Correct. Post-infectious cerebellar ataxia is common after viral illnesses like chickenpox and causes truncal and limb ataxia, as well as dysarthria.
- **B. Chorea:** Incorrect. Chorea involves irregular, involuntary movements, not ataxia.
- **C. Guillain-Barre Syndrome:** Incorrect. GBS causes ascending paralysis and areflexia, not ataxia or dysarthria.

- **D. Polio Myelitis:** Incorrect. Poliomyelitis affects lower motor neurons and causes flaccid paralysis, not cerebellar signs.
- **E. Transverse Myelitis:** Incorrect. This causes a sensory level, bladder dysfunction, and motor weakness, not ataxia.

Question 113

A 5-year-old unvaccinated child presented to the emergency department with complaints of high-grade fever for the last 3 days associated with headache and vomiting. On examination, temperature was 102°F, pulse 130/min, BP 90/60 mmHg. Kernig's and Brudzinski's signs are positive. CSF analysis shows WBC 1800 with 90% neutrophils, 10% lymphocytes, proteins 350 mg/dL, glucose 30 mg/dL. What is the most likely diagnosis?

- **A. Bacterial meningitis**
- **B. Brain abscess**
- **C. Tuberculous meningitis**
- **D. Viral encephalitis**
- **E. Viral meningitis**

Correct Answer: A. Bacterial meningitis

Explanation:

- **A. Bacterial meningitis:** Correct. High WBC count (neutrophil predominance), low glucose, high protein, and positive meningeal signs strongly indicate bacterial meningitis.
- **B. Brain abscess:** Incorrect. Brain abscess presents with focal neurological signs and headache but not meningitis-like features.
- **C. Tuberculous meningitis:** Incorrect. TB meningitis shows a lymphocytic predominance, lower glucose, and more insidious onset.
- **D. Viral encephalitis:** Incorrect. Encephalitis involves altered consciousness and lymphocytic predominance, not neutrophilic CSF.
- **E. Viral meningitis:** Incorrect. Viral meningitis typically shows lymphocytic predominance with normal to slightly low glucose and protein levels.

Question 114

A 2-year-old male child presented to the emergency department with high-grade fever and a runny nose for the last 1 day. In the emergency department, the child developed generalized clonic seizure lasting for 3 minutes. After 20 minutes, the child became fully conscious. He was developmentally normal. Physical examination showed fever of 102°F and clear rhinorrhea. No signs of meningeal irritation and the rest of the systemic examination was unremarkable. What is the most likely diagnosis?

- **A. Complex febrile seizures**
- **B. Meningoencephalitis**

- **C. Simple febrile seizures**
- **D. Status epilepticus**
- **E. Viral encephalitis**

Correct Answer: C. Simple febrile seizures

Explanation:

- **A. Complex febrile seizures:** Incorrect. Complex febrile seizures last more than 15 minutes, occur more than once in 24 hours, or have focal features.
- **B. Meningoencephalitis:** Incorrect. This presents with altered mental status and meningeal signs, which are absent here.
- **C. Simple febrile seizures:** Correct. A single, generalized seizure lasting less than 15 minutes in a child with fever is characteristic of simple febrile seizures.
- **D. Status epilepticus:** Incorrect. Status epilepticus involves continuous seizures lasting more than 5 minutes or repeated seizures without recovery.
- **E. Viral encephalitis:** Incorrect. This would involve altered mental status and possibly focal deficits, which are not present.

Question 115

An 8-year-old child weighing 13 kg has presented with 1 month history of fever and positive signs of meningeal irritation. CSF examination shows: Protein = 800 mg/dL, glucose = 30 mg/dL; cell count = 300, lymphocytes = 90%, neutrophils = 10%. What is the most likely diagnosis?

- **A. Bacterial meningitis**
- **B. Brain abscess**
- **C. Tuberculous meningitis**
- **D. Viral meningoencephalitis**
- **E. Fungal meningitis**

Correct Answer: C. Tuberculous meningitis

Explanation:

- **A. Bacterial meningitis:** Incorrect. Bacterial meningitis would show neutrophilic predominance and very low glucose, but here lymphocytes predominate.
- **B. Brain abscess:** Incorrect. Brain abscess does not cause the described CSF findings.
- **C. Tuberculous meningitis:** Correct. High protein, low glucose, and lymphocytic predominance are characteristic of TB meningitis.
- **D. Viral meningoencephalitis:** Incorrect. Viral meningitis usually shows normal to slightly elevated protein and glucose levels with lymphocytic predominance.

- **E. Fungal meningitis:** Incorrect. Fungal meningitis is rare in children and usually occurs in immunocompromised individuals.

Question 116

An 8-year-old male child was brought to the OPD with a 3-month history of gait problems with frequent falls. He was born to consanguineous parents by NVD at term with an immediate cry. His development was normal. One of his 12-year-old brothers is bedridden for the last 3 years, who was previously normal. On examination, high stepping gait, down-going planters, diminished deep tendon reflexes, and wasted distal limbs were found. His higher mental functions and cerebellar examination are normal. What is the most likely diagnosis?

- **A. Guillain-Barre Syndrome**
- **B. Hereditary sensory motor neuropathy**
- **C. Spinal Cord Tumor**
- **D. Spinal Muscular Atrophy**
- **E. Transverse Myelitis**

Correct Answer: B. Hereditary sensory motor neuropathy

Explanation:

- **A. Guillain-Barre Syndrome:** Incorrect. GBS causes acute flaccid paralysis with areflexia and usually follows an infection; it does not cause chronic symptoms or high stepping gait.
- **B. Hereditary sensory motor neuropathy:** Correct. Also known as Charcot-Marie-Tooth disease, it is a genetic neuropathy characterized by distal muscle wasting, high stepping gait, diminished reflexes, and normal cognition.
- **C. Spinal Cord Tumor:** Incorrect. A spinal cord tumor might cause sensory and motor deficits, but it would likely present with additional signs such as bladder dysfunction.
- **D. Spinal Muscular Atrophy:** Incorrect. This condition affects proximal muscles and does not typically present with high stepping gait or distal wasting.
- **E. Transverse Myelitis:** Incorrect. This causes acute motor and sensory deficits with a sensory level, not chronic progressive symptoms.

Question 117

Pre-anesthetic medication is given to:

- **A. To control patient co-morbidity**
- **B. To decrease duration of surgery**
- **C. To decrease pain during surgery**
- **D. To make the anesthetic procedure safe and pleasant**
- **E. To maintain blood pressure**

Correct Answer: D. To make the anesthetic procedure safe and pleasant

Explanation:

- **A. To control patient co-morbidity:** Incorrect. Pre-anesthetic medications do not directly address co-morbidities.
- **B. To decrease duration of surgery:** Incorrect. Pre-anesthetic medication has no role in shortening surgery duration.
- **C. To decrease pain during surgery:** Incorrect. Pain management is primarily handled during and after surgery, not by pre-anesthetic medication.
- **D. To make the anesthetic procedure safe and pleasant:** Correct. Pre-anesthetic medications are used to reduce anxiety, prevent complications, and improve the overall anesthetic experience.
- **E. To maintain blood pressure:** Incorrect. Specific medications to maintain blood pressure are given during surgery, not as pre-anesthetic drugs.

Question 118

All of the following are stages of anesthesia except:

- **A. Analgesia**
- **B. Excitement**
- **C. Hyperthermia**
- **D. Modularity paralysis**
- **E. Surgical anesthesia**

Correct Answer: C. Hyperthermia

Explanation:

- **A. Analgesia:** Correct. This is the first stage of anesthesia where the patient loses pain sensation but remains conscious.
- **B. Excitement:** Correct. The second stage involves agitation and irregular breathing.
- **C. Hyperthermia:** Incorrect. Hyperthermia is not a stage of anesthesia; it is a pathological response (e.g., malignant hyperthermia).
- **D. Modularity paralysis:** Correct. Paralysis occurs during surgical anesthesia (third stage).
- **E. Surgical anesthesia:** Correct. This is the third stage, where the patient is fully anesthetized for surgery.

Question 119

Which of the following is correct about succinylcholine?

- **A. Analgesic**
- **B. Anticholinesterase**

- C. Depolarizing
- D. Non-depolarizing
- E. Sedative

Correct Answer: C. Depolarizing

Explanation:

- **A. Analgesic:** Incorrect. Succinylcholine is a muscle relaxant, not an analgesic.
- **B. Anticholinesterase:** Incorrect. Succinylcholine is not an anticholinesterase; it mimics acetylcholine.
- **C. Depolarizing:** Correct. Succinylcholine is a depolarizing neuromuscular blocker that acts by depolarizing the motor end plate.
- **D. Non-depolarizing:** Incorrect. Non-depolarizing agents (e.g., rocuronium) work differently by blocking acetylcholine receptors without causing depolarization.
- **E. Sedative:** Incorrect. Succinylcholine has no sedative properties.

Question 120

A 6-year-old child was brought to the emergency room while playing in the street at night and was bitten on his forearm and face by a known rabid dog. The bite was classified as Category III by the WHO. Which of the following human diploid cell culture intramuscular dosage schedules would you follow?

- A. 0, 1, 3, 7, 14 day
- B. 0, 3, 7, 14, 28 day
- C. 0, 3, 7, 9, 14 day
- D. 0, 3, 7, 14, 28, 60 day
- E. 0, 3, 7, 14, 28 day

Correct Answer: E. 0, 3, 7, 14, 28 day

Explanation:

- **A. 0, 1, 3, 7, 14 day:** Incorrect. This schedule is not recommended by the WHO for Category III bites.
- **B. 0, 3, 7, 14, 28 day:** Correct. The WHO recommends this 5-dose schedule for post-exposure prophylaxis in Category III rabies exposures.
- **C. 0, 3, 7, 9, 14 day:** Incorrect. This schedule is not consistent with WHO guidelines.
- **D. 0, 3, 7, 14, 28, 60 day:** Incorrect. This older schedule is no longer in use.
- **E. 0, 3, 7, 14, 28 day:** Correct as per WHO post-exposure prophylaxis protocols.