INI CET 2025 Question Paper with Solutions

| **Time Allowed :**3 Hours | **Maximum Marks :**100 | **Total questions :**60 |

General Instructions

General Instructions:

i) All questions are compulsory. Marks allotted to each question are indicated in the margin.

ii) Answers must be precise and to the point.

iii) In numerical questions, all steps of calculation should be shown clearly.

iv) Use of non-programmable scientific calculators is permitted.

v) Wherever necessary, write balanced chemical equations with proper symbols and units.

vi) Rough work should be done only in the space provided in the question paper.

Q1. Which of the following is the most common cause of acute pancreatitis?

(1) Alcohol abuse

(2) Gallstones

(3) Hypertriglyceridemia

(4) Viral infections

Correct Answer: (1) Alcohol abuse

Solution:

Step 1: Understanding acute pancreatitis.

Acute pancreatitis is an inflammation of the pancreas that occurs suddenly and can be severe. The most common causes are alcohol abuse and gallstones.

Step 2: Analyzing the options.

(1) Alcohol abuse: This is the most common cause of acute pancreatitis. Chronic or heavy drinking can lead to inflammation of the pancreas.

(2) Gallstones: Gallstones can also cause acute pancreatitis, but alcohol abuse is more common.

(3) Hypertriglyceridemia: This is a less common cause of pancreatitis, typically occurring with very high triglyceride levels.

(4) Viral infections: Though viral infections can cause pancreatitis, it is a rarer cause compared to alcohol abuse and gallstones.

Step 3: Conclusion.

The most common cause of acute pancreatitis is **(1) Alcohol abuse**.

> **Quick Tip**
>
> In clinical practice, alcohol abuse is one of the leading causes of acute pancreatitis, followed by gallstones and hypertriglyceridemia.

Q2. Which of the following conditions is most commonly associated with hypoparathyroidism?

(1) Rheumatoid arthritis

(2) Chronic renal failure

(3) Diabetes mellitus

(4) Hyperthyroidism

Correct Answer: (2) Chronic renal failure

Solution:

Step 1: Understanding hypoparathyroidism.

Hypoparathyroidism is a condition where there is insufficient production of parathyroid hormone (PTH), which regulates calcium and phosphorus levels. One of the most common causes is chronic renal failure.

Step 2: Analyzing the options.

(1) Rheumatoid arthritis: This is an autoimmune disease affecting joints, and not typically associated with hypoparathyroidism.

(2) Chronic renal failure: Chronic kidney disease is strongly associated with hypoparathyroidism due to disturbances in calcium and phosphorus metabolism.

(3) Diabetes mellitus: Diabetes does not directly cause hypoparathyroidism, though it can complicate other conditions.

(4) Hyperthyroidism: This condition affects the thyroid but is not associated with hypoparathyroidism.

Step 3: Conclusion.

The most common condition associated with hypoparathyroidism is **(2) Chronic renal failure**.

Quick Tip

In cases of chronic renal failure, the kidneys are unable to effectively regulate calcium and phosphorus levels, leading to hypoparathyroidism.

Q3. The drug of choice for treating acute gout flare is:

(1) Colchicine

(2) Allopurinol

(3) NSAIDs

(4) Steroids

Correct Answer: (1) Colchicine

Solution:

Step 1: Understanding acute gout flare.

Acute gout flare is a painful condition caused by the accumulation of uric acid crystals in the joints. Treatment typically focuses on reducing inflammation and pain.

Step 2: Analyzing the options.

(1) Colchicine: Colchicine is often the drug of choice for treating acute gout attacks, as it helps reduce inflammation and prevent crystal formation.

(2) Allopurinol: Allopurinol is used for chronic gout management, not during acute flares.

(3) NSAIDs: Nonsteroidal anti-inflammatory drugs (NSAIDs) are also commonly used to treat acute gout, but colchicine is more specifically effective.

(4) Steroids: Steroids may be used for severe cases, but colchicine is preferred in many situations for its effectiveness.

Step 3: Conclusion.

The drug of choice for treating acute gout flare is **(1) Colchicine**.

> **Quick Tip**
>
> For acute gout attacks, colchicine is effective in reducing inflammation and pain. NSAIDs are also commonly used as alternatives.

Q4. Which of the following bacteria is the most common cause of community-acquired pneumonia?

(1) Streptococcus pneumoniae

(2) Mycoplasma pneumoniae

(3) Haemophilus influenzae

(4) Staphylococcus aureus

Correct Answer: (1) Streptococcus pneumoniae

Solution:

Step 1: Understanding community-acquired pneumonia (CAP).

Community-acquired pneumonia (CAP) is an infection of the lungs that occurs outside of a hospital setting. The causative organisms are often bacterial.

Step 2: Analyzing the options.

(1) Streptococcus pneumoniae: This is the most common cause of community-acquired pneumonia. It is a leading bacterial pathogen in CAP.

(2) Mycoplasma pneumoniae: While this bacterium is a common cause of CAP, it is less frequent than Streptococcus pneumoniae.

(3) Haemophilus influenzae: This can cause CAP, especially in people with chronic respiratory conditions, but it is not the most common.

(4) Staphylococcus aureus: This bacterium can cause severe pneumonia but is less common in community-acquired infections compared to Streptococcus pneumoniae.

Step 3: Conclusion.

The most common cause of community-acquired pneumonia is **(1) Streptococcus pneumoniae**.

> **Quick Tip**
>
> Streptococcus pneumoniae is the most common cause of CAP and is treated with antibiotics like penicillin or amoxicillin.

Q5. Which of the following is the hallmark of Type 1 Diabetes mellitus?

(1) Insulin resistance

(2) Insulin deficiency

(3) Impaired insulin secretion

(4) Insulin sensitivity

Correct Answer: (2) Insulin deficiency

Solution:

Step 1: Understanding Type 1 Diabetes mellitus.

Type 1 diabetes is characterized by the autoimmune destruction of pancreatic beta cells, which results in insulin deficiency. This is different from Type 2 diabetes, which involves insulin resistance.

Step 2: Analyzing the options.

(1) Insulin resistance: This is the hallmark of Type 2 diabetes, not Type 1.

(2) Insulin deficiency: This is the correct answer. Insulin deficiency occurs due to the loss of beta cells in the pancreas.

(3) Impaired insulin secretion: This can occur in Type 1 diabetes, but the primary hallmark is insulin deficiency.

(4) Insulin sensitivity: This is related to Type 2 diabetes and insulin resistance, not Type 1.

Step 3: Conclusion.

The hallmark of Type 1 diabetes is **(2) Insulin deficiency**.

> **Quick Tip**
>
> In Type 1 diabetes, the body cannot produce insulin due to the destruction of beta cells, leading to insulin deficiency.

Q6. Which of the following is a primary risk factor for the development of aortic dissection?

(1) Hypertension
(2) Diabetes mellitus
(3) Hyperlipidemia
(4) Smoking

Correct Answer: (1) Hypertension

Solution:

Step 1: Understanding aortic dissection.

Aortic dissection is a serious condition in which a tear occurs in the aortic wall, often leading to catastrophic consequences. Hypertension is the leading risk factor.

Step 2: Analyzing the options.

(1) Hypertension: Hypertension (high blood pressure) is the most significant risk factor for aortic dissection, as it puts excessive strain on the aorta.

(2) Diabetes mellitus: While diabetes can contribute to vascular diseases, it is not a primary risk factor for aortic dissection.

(3) Hyperlipidemia: Hyperlipidemia is a risk factor for atherosclerosis but not specifically for aortic dissection.

(4) Smoking: Smoking is a general risk factor for cardiovascular diseases but is not a leading cause of aortic dissection.

Step 3: Conclusion.

The primary risk factor for the development of aortic dissection is **(1) Hypertension**.

> **Quick Tip**
>
> Hypertension is the leading cause of aortic dissection because it causes increased stress on the aortic walls, leading to potential tears.

Q7. The most sensitive test for diagnosing acute myocardial infarction (MI) is:

(1) Troponin I

(2) Creatine kinase-MB (CK-MB)

(3) Myoglobin

(4) Electrocardiogram (ECG)

Correct Answer: (1) Troponin I

Solution:

Step 1: Understanding acute myocardial infarction (MI).

Acute myocardial infarction (MI), commonly known as a heart attack, occurs when blood flow to part of the heart muscle is blocked. Diagnosing MI early is critical for treatment.

Step 2: Analyzing the options.

(1) Troponin I: This is the most sensitive and specific biomarker for diagnosing acute myocardial infarction. Elevated levels indicate heart muscle damage.

(2) Creatine kinase-MB (CK-MB): CK-MB is less sensitive and specific than troponin I for diagnosing MI.

(3) Myoglobin: Myoglobin is an early marker but lacks specificity for diagnosing MI. It can be elevated in other conditions.

(4) Electrocardiogram (ECG): While ECG is crucial in diagnosing MI, it may not always detect early infarction, making troponin I more reliable.

Step 3: Conclusion.

The most sensitive test for diagnosing acute myocardial infarction is **(1) Troponin I**.

> **Quick Tip**
>
> Troponin I is the gold standard for diagnosing acute myocardial infarction due to its high sensitivity and specificity for heart muscle injury.

Q8. A 45-year-old woman presents with unexplained weight loss, excessive thirst, and frequent urination. Her blood glucose level is found to be 250 mg/dL. Which of the following is the most likely diagnosis?

(1) Type 2 diabetes
(2) Type 1 diabetes
(3) Diabetic ketoacidosis
(4) Hyperosmolar hyperglycemic state

Correct Answer: (1) Type 2 diabetes

Solution:

Step 1: Understanding the symptoms.

The patient presents with classic symptoms of hyperglycemia, including unexplained weight loss, excessive thirst, and frequent urination. These are commonly seen in diabetes. The

blood glucose level of 250 mg/dL is elevated but not as high as in conditions like diabetic ketoacidosis or hyperosmolar hyperglycemic state.

Step 2: Analyzing the options.

(1) Type 2 diabetes: This is the most likely diagnosis. The symptoms and blood glucose level fit well with Type 2 diabetes, which is more common in adults.

(2) Type 1 diabetes: Type 1 diabetes often presents with more severe symptoms, such as diabetic ketoacidosis, which is not mentioned in this case.

(3) Diabetic ketoacidosis: Diabetic ketoacidosis typically presents with a much higher blood glucose level and additional signs like fruity breath, vomiting, and dehydration.

(4) Hyperosmolar hyperglycemic state: This condition involves much higher blood glucose levels, often over 600 mg/dL, and would not fit the current clinical presentation.

Step 3: Conclusion.

The most likely diagnosis is **(1) Type 2 diabetes**, as the symptoms and glucose level are characteristic of this condition.

Quick Tip

Type 2 diabetes is more common in adults and can present with elevated blood glucose levels along with classic symptoms such as weight loss, thirst, and frequent urination.

Q9. Which of the following is the first-line treatment for acute asthma exacerbation?

(1) Oral corticosteroids
(2) Inhaled beta-agonists
(3) Intravenous magnesium sulfate
(4) Inhaled anticholinergics

Correct Answer: (2) Inhaled beta-agonists

Solution:

Step 1: Understanding acute asthma exacerbation.

During an acute asthma exacerbation, patients experience worsening symptoms due to

airway constriction and inflammation. Immediate treatment focuses on bronchodilation and reducing airway obstruction.

Step 2: Analyzing the options.

(1) Oral corticosteroids: Oral corticosteroids are often used in more severe cases or for long-term control but are not the first-line treatment for acute exacerbation.

(2) Inhaled beta-agonists: Inhaled beta-agonists are the first-line treatment for acute asthma exacerbation as they quickly relax the muscles around the airways, improving airflow.

(3) Intravenous magnesium sulfate: Magnesium sulfate is used in severe cases of asthma exacerbation, especially when beta-agonists are not effective.

(4) Inhaled anticholinergics: These can be used as an adjunct to beta-agonists in acute exacerbations, but they are not first-line treatments.

Step 3: Conclusion.

The first-line treatment for acute asthma exacerbation is **(2) Inhaled beta-agonists**.

> **Quick Tip**
>
> Inhaled beta-agonists are fast-acting bronchodilators that relieve acute asthma symptoms by relaxing airway muscles.

Q10. Which of the following is the most common form of dementia?

(1) Alzheimer's disease
(2) Vascular dementia
(3) Lewy body dementia
(4) Frontotemporal dementia

Correct Answer: (1) Alzheimer's disease

Solution:

Step 1: Understanding dementia.

Dementia is a general term for a decline in cognitive ability severe enough to interfere with daily life. Alzheimer's disease is the most common cause of dementia.

Step 2: Analyzing the options.

(1) Alzheimer's disease: Alzheimer's disease is the most common form of dementia, accounting for 60-80**(2) Vascular dementia:** This form of dementia is caused by impaired blood flow to the brain, often due to strokes, but it is less common than Alzheimer's.

(3) Lewy body dementia: Lewy body dementia involves abnormal protein deposits in the brain and is less common than Alzheimer's.

(4) Frontotemporal dementia: This type of dementia affects the frontal and temporal lobes of the brain, but it is less common than Alzheimer's disease.

Step 3: Conclusion.

The most common form of dementia is **(1) Alzheimer's disease**.

Quick Tip

Alzheimer's disease is the leading cause of dementia, marked by memory loss and changes in cognitive function. Early diagnosis can help manage symptoms.