NEET SS 2025 Question Paper with Solutions (Memory Based)

1. Which of the following is the most sensitive marker for myocardial infarction in the first 6 hours after symptom onset?

(A) CK-MB

(B) Troponin I

(C) Myoglobin

(D) LDH

Correct Answer: (C) Myoglobin

Solution:

Step 1: Understanding the question.

The question asks for the most sensitive marker for myocardial infarction within the first 6 hours. Myoglobin rises quickly after cardiac injury, making it sensitive in the early phase.

Step 2: Analyzing the options.

(A) CK-MB: CK-MB rises after 4-6 hours but is not the earliest.

(B) Troponin I: Troponin I is highly specific but rises after 3-6 hours.

(C) Myoglobin: Correct — Myoglobin is the earliest marker, rising within 1-3 hours.

(D) LDH: LDH rises much later, after 24 hours.

Step 3: Conclusion.

The correct answer is **(C) Myoglobin**, as it is the most sensitive marker in the first 6 hours after myocardial infarction.

Quick Tip

In acute coronary syndromes, remember the timeline of cardiac markers: myoglobin first, then troponins for specificity.

2. Which of the following is the gold standard investigation for diagnosing multiple sclerosis?

(A) CT scan of the brain

(B) MRI with gadolinium

(C) Lumbar puncture

(D) EEG

Correct Answer: (B) MRI with gadolinium

Solution:

Step 1: Understanding the question.

The question seeks the gold standard for diagnosing multiple sclerosis, which involves detecting demyelinating lesions. MRI with gadolinium highlights active lesions.

Step 2: Analyzing the options.

(A) CT scan of the brain: CT is less sensitive for MS lesions.

(B) MRI with gadolinium: Correct — It is the gold standard for visualizing plaques in the brain and spinal cord.

(C) Lumbar puncture: Useful for oligoclonal bands but not the gold standard.

(D) EEG: Not relevant for MS diagnosis.

Step 3: Conclusion.

The correct answer is **(B) MRI with gadolinium**, as it is the gold standard for diagnosing multiple sclerosis.

Quick Tip

For demyelinating diseases like MS, prioritize MRI for dissemination in space and time criteria.

3. Which of the following is the most common genetic mutation associated with hereditary non-polyposis colorectal cancer (HNPCC)?

(A) APC gene mutation

(B) MLH1/MSH2 mutation

(C) KRAS mutation

(D) TP53 mutation

Correct Answer: (B) MLH1/MSH2 mutation

Solution:

Step 1: Understanding the question.

The question asks for the common mutation in HNPCC, also known as Lynch syndrome, which involves mismatch repair genes.

Step 2: Analyzing the options.

(A) APC gene mutation: Associated with familial adenomatous polyposis, not HNPCC.

(B) MLH1/MSH2 mutation: Correct — These are the most common in mismatch repair deficiency in HNPCC.

(C) KRAS mutation: Seen in sporadic colorectal cancers.

(D) TP53 mutation: Common in many cancers but not specific to HNPCC.

Step 3: Conclusion.

The correct answer is **(B) MLH1/MSH2 mutation**, as it is the most common in hereditary non-polyposis colorectal cancer.

Quick Tip

In hereditary colorectal cancers, distinguish between polyposis (APC) and non-polyposis (mismatch repair genes) syndromes.

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4. Which of the following is the first-line treatment for acute variceal bleeding in cirrhosis?

(A) Propranolol

(B) Endoscopic band ligation

(C) Octreotide infusion

(D) Transjugular intrahepatic portosystemic shunt (TIPS)

Correct Answer: (C) Octreotide infusion

Solution:

Step 1: Understanding the question.

The question is about initial management of acute variceal bleeding, focusing on pharmacologic therapy to reduce portal pressure.

Step 2: Analyzing the options.

(A) Propranolol: Used for prophylaxis, not acute bleeding.

(B) Endoscopic band ligation: Definitive but not first-line in acute setting.

(C) Octreotide infusion: Correct — It is the first-line vasoactive drug for controlling bleeding.

(D) TIPS: Reserved for refractory cases.

Step 3: Conclusion.

The correct answer is **(C) Octreotide infusion**, as it is the first-line treatment for acute variceal bleeding.

Quick Tip

In portal hypertension emergencies, start with vasoactive agents before endoscopy.

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5. Which of the following is the most common cause of chronic kidney disease in adults worldwide?

(A) Diabetic nephropathy

(B) Hypertensive nephropathy

(C) Glomerulonephritis

(D) Polycystic kidney disease

Correct Answer: (A) Diabetic nephropathy

Solution:

Step 1: Understanding the question.

The question asks for the leading cause of CKD in adults, which is often linked to metabolic disorders.

Step 2: Analyzing the options.

(A) Diabetic nephropathy: Correct — Diabetes is the most common cause globally.

(B) Hypertensive nephropathy: Second most common.

(C) Glomerulonephritis: More common in developing countries but not the top.

(D) Polycystic kidney disease: Genetic and less prevalent.

Step 3: Conclusion.

The correct answer is **(A) Diabetic nephropathy**, as it is the most common cause of chronic kidney disease.

Quick Tip

Screen for proteinuria and GFR in diabetic patients to detect nephropathy early.

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6. Which of the following is the earliest rising cardiac biomarker after myocardial infarction?

(A) CK-MB

(B) Troponin I

(C) Myoglobin

(D) LDH

Correct Answer: (C) Myoglobin

Solution:

Step 1: Understanding the question.

The question asks for the cardiac biomarker that rises earliest after myocardial infarction, typically within the first few hours.

Step 2: Analyzing the options.

(A) CK-MB: Rises after 4-6 hours.

(B) Troponin I: Highly specific but rises after 3-6 hours.

(C) Myoglobin: Correct — It is the earliest marker, rising within 1-3 hours due to its small size and rapid release from damaged myocardium.

(D) LDH: Rises much later, after 24 hours.

Step 3: Conclusion.

The correct answer is **(C) Myoglobin**, as it is the earliest rising biomarker after myocardial infarction.

Quick Tip

Remember the timeline: Myoglobin earliest (but low specificity), followed by CK-MB, then troponins (gold standard for specificity).

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7. Which of the following is considered the gold standard for the diagnosis of multiple sclerosis?

(A) CT scan of the brain

(B) MRI of the brain and spinal cord

(C) Lumbar puncture for oligoclonal bands

(D) Visual evoked potentials

Correct Answer: (B) MRI of the brain and spinal cord

Solution:

Step 1: Understanding the question.

The question seeks the gold standard imaging or diagnostic tool for multiple sclerosis, which demonstrates dissemination of lesions in space and time.

Step 2: Analyzing the options.

(A) CT scan of the brain: Less sensitive for detecting MS lesions.

(B) MRI of the brain and spinal cord: Correct — It is the gold standard, often with gadolinium to identify active lesions.

(C) Lumbar puncture for oligoclonal bands: Supportive but not the gold standard.

(D) Visual evoked potentials: Useful for subclinical lesions but not primary diagnostic tool.

Step 3: Conclusion.

The correct answer is **(B) MRI of the brain and spinal cord**, as it is the gold standard for diagnosing multiple sclerosis.

Quick Tip

Apply McDonald criteria: MRI is key for dissemination in space and time.

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8. Which of the following genes is most commonly mutated in Lynch syndrome (hereditary non-polyposis colorectal cancer)?

(A) APC

(B) MLH1

(C) KRAS

(D) TP53

Correct Answer: (B) MLH1

Solution:

Step 1: Understanding the question.

The question asks for the most common genetic mutation in Lynch syndrome, involving DNA mismatch repair genes.

Step 2: Analyzing the options.

(A) APC: Associated with familial adenomatous polyposis.

(B) MLH1: Correct — MLH1 and MSH2 are the most commonly mutated, with MLH1 frequently cited as predominant.

(C) KRAS: Common in sporadic colorectal cancers.

(D) TP53: Involved in Li-Fraumeni syndrome and many cancers.

Step 3: Conclusion.

The correct answer is **(B) MLH1**, as it is one of the most common mutations in Lynch syndrome.

Quick Tip

Lynch syndrome: Mismatch repair genes (MLH1, MSH2, MSH6, PMS2); contrast with APC in polyposis syndromes.

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9. Which of the following is the initial pharmacologic therapy for acute esophageal variceal bleeding in cirrhosis?

(A) Propranolol

(B) Endoscopic variceal ligation

(C) Vasoactive drugs like terlipressin or octreotide

(D) Balloon tamponade

Correct Answer: (C) Vasoactive drugs like terlipressin or octreotide

Solution:

Step 1: Understanding the question.

The question focuses on the first-line pharmacologic management to reduce portal pressure in acute variceal bleeding.

Step 2: Analyzing the options.

(A) Propranolol: Used for prophylaxis, not acute bleeding.

(B) Endoscopic variceal ligation: Performed after stabilization but not initial pharmacologic.

(C) Vasoactive drugs like terlipressin or octreotide: Correct — Started immediately on suspicion of variceal bleed.

(D) Balloon tamponade: Rescue therapy for refractory cases.

Step 3: Conclusion.

The correct answer is **(C) Vasoactive drugs like terlipressin or octreotide**, as they are the initial therapy for acute variceal bleeding.

Quick Tip

Acute variceal bleed: Resuscitate, vasoactive drugs + antibiotics, then urgent endoscopy.

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10. Which of the following is the leading cause of chronic kidney disease worldwide?

(A) Glomerulonephritis

(B) Hypertension

(C) Diabetes mellitus

(D) Polycystic kidney disease

Correct Answer: (C) Diabetes mellitus

Solution:

Step 1: Understanding the question.

The question asks for the most common etiology of CKD globally in adults.

Step 2: Analyzing the options.

(A) Glomerulonephritis: More common in some developing regions but not globally leading.

(B) Hypertension: Second most common.

(C) Diabetes mellitus: Correct — Diabetic nephropathy is the leading cause worldwide due to rising diabetes prevalence.

(D) Polycystic kidney disease: Rare genetic cause.

Step 3: Conclusion.

The correct answer is **(C) Diabetes mellitus**, as it is the leading cause of chronic kidney disease worldwide.

Quick Tip

Control glycemic and blood pressure targets to prevent progression of diabetic nephropathy.

11. Which of the following cardiac biomarkers rises earliest after the onset of acute myocardial infarction?

(A) Creatine kinase-MB (CK-MB)

(B) Cardiac troponin T

(C) Myoglobin

(D) Lactate dehydrogenase (LDH)

Correct Answer: (C) Myoglobin

Solution:

Step 1: Understanding the question.

The question focuses on the biomarker that elevates first following myocardial necrosis in acute myocardial infarction.

Step 2: Analyzing the options.

(A) Creatine kinase-MB (CK-MB): Rises 4-6 hours after onset, peaks at 18-24 hours.

(B) Cardiac troponin T: Highly specific, rises 3-6 hours after onset.

(C) Myoglobin: Correct — Small molecule released rapidly, rises within 1-3 hours.

(D) Lactate dehydrogenase (LDH): Rises later, around 24 hours.

Step 3: Conclusion.

The correct answer is **(C) Myoglobin**, the earliest rising biomarker after acute myocardial infarction.

Quick Tip

Myoglobin is useful for early rule-out of MI due to its rapid rise, though troponins are preferred for confirmation due to higher specificity.

12. According to the latest diagnostic criteria, what is the gold standard for diagnosing multiple sclerosis?

(A) Clinical history and examination alone

(B) Application of the 2024 revised McDonald criteria

(C) Presence of oligoclonal bands in CSF

(D) Evoked potentials

Correct Answer: (B) Application of the 2024 revised McDonald criteria

Solution:

Step 1: Understanding the question.

The question seeks the current standard for MS diagnosis, which integrates clinical, imaging, and laboratory findings.

Step 2: Analyzing the options.

(A) Clinical history and examination alone: Insufficient without evidence of dissemination in space and time.

(B) Application of the 2024 revised McDonald criteria: Correct — These are the internationally accepted gold standard criteria.

(C) Presence of oligoclonal bands in CSF: Supportive but not required in all cases.

(D) Evoked potentials: Adjunctive, not the primary standard.

Step 3: Conclusion.

The correct answer is **(B) Application of the 2024 revised McDonald criteria**, the gold standard for diagnosing multiple sclerosis.

Quick Tip

The 2024 McDonald criteria allow earlier diagnosis with unified rules for relapsing and progressive MS.

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13. Which gene is most commonly mutated in Lynch syndrome (hereditary non-polyposis colorectal cancer)?

(A) APC

(B) MLH1

(C) KRAS

(D) BRAF

Correct Answer: (B) MLH1

Solution:

Step 1: Understanding the question.

Lynch syndrome results from germline mutations in DNA mismatch repair genes.

Step 2: Analyzing the options.

(A) APC: Mutated in familial adenomatous polyposis.

(B) MLH1: Correct — Most frequent mutation in Lynch syndrome.

(C) KRAS: Common in sporadic colorectal cancers.

(D) BRAF: Associated with sporadic MSI-high cancers.

Step 3: Conclusion.

The correct answer is **(B) MLH1**, the most commonly mutated gene in Lynch syndrome.

Quick Tip

Lynch syndrome involves mismatch repair defects; universal screening of colorectal tumors recommended.

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14. What is the initial pharmacologic management for suspected acute esophageal variceal bleeding?

(A) Non-selective beta-blockers alone

(B) Proton pump inhibitors

(C) Vasoactive agents (e.g., octreotide or terlipressin)

(D) Urgent beta-blocker prophylaxis

Correct Answer: (C) Vasoactive agents (e.g., octreotide or terlipressin)

Solution:

Step 1: Understanding the question.

Acute variceal bleeding requires immediate reduction of portal pressure pharmacologically.

Step 2: Analyzing the options.

(A) Non-selective beta-blockers alone: For prophylaxis, not acute control.

(B) Proton pump inhibitors: Not indicated for variceal bleed.

(C) Vasoactive agents (e.g., octreotide or terlipressin): Correct — Started immediately upon suspicion.

(D) Urgent beta-blocker prophylaxis: Secondary prevention after control.

Step 3: Conclusion.

The correct answer is **(C) Vasoactive agents**, the initial pharmacologic therapy for acute variceal bleeding.

Quick Tip

Combine vasoactive drugs with antibiotics and early endoscopy for optimal control of variceal hemorrhage.

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15. What is the leading cause of chronic kidney disease worldwide as per recent global burden studies?

(A) Hypertension

(B) Glomerulonephritis

(C) Diabetes mellitus

(D) Obstructive nephropathy

Correct Answer: (C) Diabetes mellitus

Correct Answer: (C) Diabetes mellitus

Solution:

Step 1: Understanding the question.

The question asks for the primary etiology of CKD globally, driven by metabolic factors.

Step 2: Analyzing the options.

(A) Hypertension: Major contributor but second to diabetes.

(B) Glomerulonephritis: More prevalent in some regions but not globally leading.

(C) Diabetes mellitus: Correct — High fasting glucose is the top risk factor per GBD studies.

(D) Obstructive nephropathy: Less common globally.

Step 3: Conclusion.

The correct answer is **(C) Diabetes mellitus**, the leading cause of chronic kidney disease worldwide.

Quick Tip

Tight glycemic and blood pressure control are key to delaying diabetic nephropathy progression.
