INI CET Medicine

Sample Paper – 7

Duration: 14 Minutes **Maximum Marks: 15**

Instructions

- This paper contains **15** Multiple Choice Questions (Single Best Response), modelled on the General Medicine content of **INI CET** (Institutes of National Importance Combined Entrance Test) conducted by AIIMS New Delhi.
- The **15-question** length matches the number of Medicine items you actually meet in the real 200-question paper.
- Each correct answer carries **+1 mark**. There is **negative marking of one-third (0.33) mark** for every incorrect answer; unattempted questions carry no penalty.
- Every question has **exactly one best answer**. Choose the single most appropriate option.
- Attempt this practice paper in one timed sitting of about **14 minutes**, the pace the real computer-based test demands.

Cardiology

Q1. According to the revised Jones criteria, which of the following is a **major** manifestation of acute rheumatic fever?

(A) Arthralgia

(B) Fever

(C) Carditis

(D) Raised erythrocyte sedimentation rate (ESR)

Q2. The most common chronic valvular lesion resulting from rheumatic heart disease is:

(A) Aortic regurgitation

(B) Mitral stenosis

(C) Tricuspid stenosis

(D) Pulmonary stenosis

Q3. A child who has had rheumatic carditis needs long-term secondary prophylaxis, most appropriately with:

(A) Oral aspirin

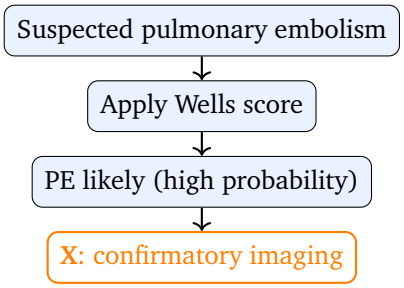
(B) Oral prednisolone

(C) Intramuscular benzathine penicillin G

(D) Oral warfarin

Respiratory Medicine

Q4. The flowchart shows the work-up of suspected pulmonary embolism in a haemodynamically stable patient. When the Wells score makes PE **likely**, the confirmatory investigation marked **X** is:



(A) Chest X-ray

(B) Electrocardiogram (ECG)

(C) Echocardiography

(D) CT pulmonary angiography

Q5. In a patient with a **low** clinical probability of pulmonary embolism, a normal result of which test safely excludes the diagnosis without imaging?

(A) Chest X-ray

(B) Serum troponin

(C) Arterial blood gas

(D) D-dimer

Gastroenterology and Hepatology

Q6. The recommended first-line serological test for coeliac disease in a patient with chronic diarrhoea and iron deficiency is:

(A) IgA anti-tissue transglutaminase (anti-tTG) antibody

(B) Antinuclear antibody (ANA)

(C) Anti-mitochondrial antibody (AMA)

(D) Anti-Saccharomyces cerevisiae antibody (ASCA)

Q7. The gold-standard confirmatory investigation for coeliac disease is:

(A) Faecal fat estimation

(B) Barium follow-through

(C) Serum total IgA level

(D) Duodenal biopsy showing villous atrophy and crypt hyperplasia

Endocrinology and Nephrology

Q8. The most common electrolyte disturbance in hospitalised patients, causing confusion and seizures when severe, is:

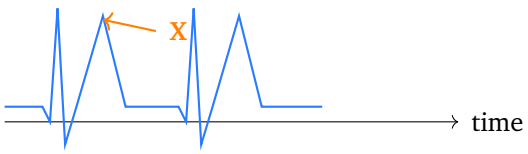
(A) Hypernatraemia

(B) Hypokalaemia

(C) Hyponatraemia

(D) Hypercalcaemia

Q9. The ECG strip shows tall, tented (peaked) T waves, the earliest change marked **X**. This finding is characteristic of:



(A) Hyperkalaemia

(B) Hypokalaemia

(C) Hypercalcaemia

(D) Hyponatraemia

Q10. In a patient with severe hyperkalaemia and ECG changes, the most appropriate **first** step to stabilise the myocardium is intravenous:

(A) Insulin with dextrose

(B) Calcium gluconate

(C) Salbutamol nebulisation

(D) Sodium bicarbonate

Neurology

Q11. A pulsatile, unilateral headache with photophobia, phonophobia and nausea, sometimes preceded by a visual aura, is most typical of:

(A) Tension-type headache

(B) Migraine

(C) Cluster headache

(D) Trigeminal neuralgia

Q12. Which feature in a patient presenting with headache is a **red flag** that warrants urgent neuroimaging?

(A) Sudden-onset “thunderclap” headache reaching maximum intensity within seconds

(B) Bilateral tight band-like pain

(C) Headache relieved by rest and simple analgesia

(D) Long-standing recurrent headaches unchanged in pattern

Infectious Diseases, Hematology and Rheumatology

Q13. A tropical fever with severe retro-orbital pain, “breakbone” myalgia, thrombocytopenia and a positive tourniquet test is most likely:

(A) Dengue

(B) Typhoid

(C) Leptospirosis

(D) Malaria

Q14. A fever with a stepwise rising temperature, relative bradycardia, rose spots and blood culture positive for *Salmonella* Typhi is:

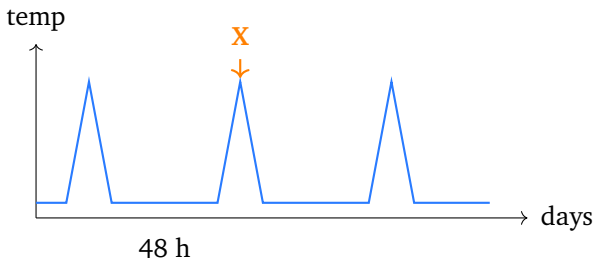
(A) Dengue

(B) Typhoid (enteric fever)

(C) Malaria

(D) Leptospirosis

Q15. The chart shows a fever spiking every 48 hours (tertian pattern) marked **X**, matching synchronous rupture of erythrocytic schizonts. This periodicity is classic for:



(A) Dengue

(B) Typhoid

(C) Malaria (*Plasmodium vivax*)

(D) Leptospirosis

Detailed Solutions

Q1.

Solution

Concept – revised Jones criteria: Diagnosis needs major and minor manifestations plus evidence of preceding streptococcal infection.

Step 1 – recall the major criteria: They are carditis, migratory polyarthritis, Sydenham chorea, subcutaneous nodules and erythema marginatum.

Step 2 – pick the option: Carditis is a major manifestation and the one that determines long-term prognosis.

Why the other options are wrong:

- A, arthralgia: a minor criterion (joint pain without swelling).
- B, fever: a minor criterion.
- D, raised ESR: a minor criterion (acute-phase reactant).

Final Answer: Carditis $\Rightarrow$ C

Answer: (C) Go Back to Q1

Q2.

Solution

Concept – chronic rheumatic valve disease: Repeated valvulitis scars the valves years later.

Step 1 – name the commonest lesion: Mitral stenosis is the most common chronic lesion of rheumatic heart disease.

Step 2 – clinical clue: It gives a loud S1, an opening snap and a mid-diastolic rumble at the apex.

Why the other options are wrong:

- A, aortic regurgitation: can occur but is less common than mitral disease.
- C, tricuspid stenosis: rare and usually accompanies mitral disease.
- D, pulmonary stenosis: almost always congenital, not rheumatic.

Final Answer: Mitral stenosis $\Rightarrow$ B

Answer: (B) Go Back to Q2

Q3.

Solution

Concept – secondary prophylaxis: The aim is to prevent recurrent streptococcal infection and further valve damage.

Step 1 – name the drug: Intramuscular benzathine penicillin G, given every 3 to 4 weeks, is the standard secondary prophylaxis.

Step 2 – duration: With carditis and residual valve disease it continues for at least 10 years or until age 40, whichever is longer.

Why the other options are wrong:

- A, aspirin: treats the acute arthritis, not prophylaxis.
- B, prednisolone: used for severe acute carditis, not long-term prevention.
- D, warfarin: for mechanical valves or atrial fibrillation, not streptococcal prophylaxis.

Final Answer: Intramuscular benzathine penicillin G $\Rightarrow$ C

Answer: (C) Go Back to Q3

Q4.

Solution

Concept – PE diagnostic pathway: The Wells score sorts patients into likely or unlikely before testing.

Step 1 – identify X: When PE is **likely**, the confirmatory test is **CT pulmonary angiography**, which images the pulmonary arteries directly.

Step 2 – role: It shows filling defects in the pulmonary vessels and is the first-line imaging test in a stable patient.

Why the other options are wrong:

- A, chest X-ray: often normal or non-specific, used to exclude mimics.
- B, ECG: may show sinus tachycardia or the S1Q3T3 pattern but does not confirm PE.
- C, echocardiography: useful for right-heart strain in unstable patients, not the confirmatory test here.

Final Answer: CT pulmonary angiography $\Rightarrow$ D

Answer: (D) Go Back to Q4

Q5.

Solution

Concept – excluding PE in low-probability patients: A sensitive test is used to rule out, not rule in.

Step 1 – name the test: A normal **D-dimer** in a patient with low pretest probability safely excludes PE without imaging.

Step 2 – reasoning: D-dimer has high sensitivity but low specificity, so a negative result is reassuring while a positive one needs imaging.

Why the other options are wrong:

- A, chest X-ray: cannot exclude PE.
- B, troponin: a marker of right-heart strain and prognosis, not exclusion.
- C, arterial blood gas: may be normal even in confirmed PE.

Final Answer: D-dimer $\Rightarrow$ $\boxed{\text{D}}$

Answer: (D) Go Back to Q5

Q6.

Solution

Concept – serology in coeliac disease: Gluten-driven immunity produces specific autoantibodies.

Step 1 – name the first-line test: IgA anti-tissue transglutaminase (anti-tTG) is the recommended first-line serological test.

Step 2 – caveat: A total IgA level is checked at the same time, because IgA deficiency can give a false-negative anti-tTG.

Why the other options are wrong:

- B, ANA: a marker of connective tissue disease.
- C, AMA: associated with primary biliary cholangitis.
- D, ASCA: associated with Crohn disease.

Final Answer: IgA anti-tissue transglutaminase $\Rightarrow$ $\boxed{\text{A}}$

Answer: (A) Go Back to Q6

Q7.

Solution

Concept – confirming coeliac disease: Serology screens, but histology confirms.

Step 1 – name the gold standard: A **duodenal biopsy** taken on a gluten-containing diet, showing villous atrophy, crypt hyperplasia and intraepithelial lymphocytosis, confirms the diagnosis.

Step 2 – follow-up: The mucosa recovers after a strict gluten-free diet, supporting the diagnosis.

Why the other options are wrong:

- A, faecal fat: shows malabsorption but is non-specific.
- B, barium follow-through: an imaging study, not diagnostic of coeliac disease.
- C, serum IgA: checked only to interpret the anti-tTG, not to confirm the disease.

Final Answer: Duodenal biopsy with villous atrophy $\Rightarrow$ $\boxed{\text{D}}$

Answer: (D) Go Back to Q7

Q8.

Solution

Concept – common electrolyte disorders: Sodium disturbances top the list in hospital.

Step 1 – name the commonest: Hyponatraemia (serum sodium below 135 mmol/L) is the most common electrolyte abnormality in inpatients.

Step 2 – clinical effect: Cerebral oedema causes confusion and, when severe, seizures and coma.

Why the other options are wrong:

- A, hypernatraemia: less common, usually from water loss.
- B, hypokalaemia: common but not the most frequent overall.
- D, hypercalcaemia: less common, often from malignancy or hyperparathyroidism.

Final Answer: Hyponatraemia $\Rightarrow$ $\boxed{\text{C}}$

Answer: (C) Go Back to Q8

Q9.

Solution

Concept – ECG in electrolyte disorders: Potassium changes alter repolarisation.

Step 1 – read the strip: Tall, tented (peaked) T waves marked X are the **earliest** ECG change of **hyperkalaemia**.

Step 2 – progression: As potassium rises further, the P wave flattens, the PR prolongs and the QRS widens into a sine-wave pattern.

Why the other options are wrong:

- B, hypokalaemia: gives flat T waves, ST depression and U waves.
- C, hypercalcaemia: shortens the QT interval.
- D, hyponatraemia: has no characteristic peaked-T pattern.

Final Answer: Hyperkalaemia $\Rightarrow$ A

Answer: (A) Go Back to Q9

Q10.

Solution

Concept – emergency management of hyperkalaemia: Protect the heart first, then shift and remove potassium.

Step 1 – first step: Intravenous calcium gluconate stabilises the cardiac membrane and is given first when ECG changes are present.

Step 2 – next steps: Insulin with dextrose and salbutamol then shift potassium into cells, and dialysis or resins remove it from the body.

Why the other options are wrong:

- A, insulin-dextrose: shifts potassium but does not protect the myocardium immediately.
- C, salbutamol: a shifting agent, slower and adjunctive.
- D, sodium bicarbonate: modest effect, used mainly with acidosis.

Final Answer: Calcium gluconate $\Rightarrow$ B

Answer: (B) Go Back to Q10

Q11.

Solution

Concept – primary headache types: The description points to a specific disorder.

Step 1 – identify it: A pulsatile, unilateral headache with photophobia, phonophobia and nausea, often with an aura, is **migraine**.

Step 2 – management: Acute attacks respond to triptans and NSAIDs; frequent attacks need prophylaxis such as propranolol or topiramate.

Why the other options are wrong:

- A, tension-type: bilateral, band-like, non-pulsatile and without nausea.
- C, cluster headache: strictly unilateral orbital pain with tearing and nasal congestion, in clusters.
- D, trigeminal neuralgia: brief electric-shock facial pains triggered by touch.

Final Answer: Migraine $\Rightarrow$ B

Answer: (B) Go Back to Q11

Q12.

Solution

Concept – headache red flags: Certain features suggest a dangerous secondary cause.

Step 1 – spot the red flag: A **sudden-onset "thunderclap" headache** peaking within seconds suggests subarachnoid haemorrhage and demands urgent imaging.

Step 2 – action: Non-contrast CT head is done first, and if normal a lumbar puncture looks for xanthochromia.

Why the other options are wrong:

- B, band-like pain: typical of benign tension-type headache.
- C, relieved by rest: a reassuring, benign feature.
- D, unchanged long-standing pattern: consistent with a chronic primary headache.

Final Answer: Thunderclap headache $\Rightarrow$ A

Answer: (A) Go Back to Q12

Q13.

Solution

Concept – differentiating tropical fevers: Each illness has a signature cluster of features.

Step 1 – match the clues: Retro-orbital pain, "breakbone" myalgia, thrombocytopenia and a positive tourniquet test point to **dengue**.

Step 2 – confirm: NS1 antigen early, then dengue IgM/IgG serology, confirm the infection.

Why the other options are wrong:

- B, typhoid: stepwise fever, relative bradycardia and rose spots, not retro-orbital pain.
- C, leptospirosis: conjunctival suffusion, calf myalgia and jaundice with renal failure (Weil disease).
- D, malaria: paroxysmal fever with rigors and splenomegaly, not the tourniquet-positive picture.

Final Answer: Dengue $\Rightarrow$ $\boxed{\text{A}}$

Answer: (A) Go Back to Q13

Q14.

Solution

Concept – enteric fever pattern: A slow-building fever with abdominal features suggests *Salmonella*.

Step 1 – match the clues: Stepwise rising temperature, relative bradycardia (Faget sign), rose spots and *Salmonella* Typhi in blood culture define **typhoid (enteric fever)**.

Step 2 – confirm and treat: Blood culture in the first week is the gold standard; treatment is with azithromycin or a third-generation cephalosporin.

Why the other options are wrong:

- A, dengue: abrupt high fever with retro-orbital pain and thrombocytopenia.
- C, malaria: paroxysmal fever with rigors, not a stepwise rise.
- D, leptospirosis: conjunctival suffusion and calf tenderness with renal and hepatic involvement.

Final Answer: Typhoid (enteric fever) $\Rightarrow$ $\boxed{\text{B}}$

Answer: (B) Go Back to Q14

Q15.

Solution

Concept – periodicity of malarial fever: Fever paroxysms follow the synchronous rupture of infected red cells.

Step 1 – read the chart: A spike every 48 hours (tertian pattern) marked X matches **malaria due to *Plasmodium vivax***, whose 48-hour erythrocytic cycle causes benign tertian malaria.

Step 2 – confirm: A peripheral blood smear or rapid antigen test identifies the parasite and its species.

Why the other options are wrong:

- A, dengue: continuous or saddleback fever, not a strict 48-hour cycle.
- B, typhoid: sustained stepwise fever without paroxysmal spikes.
- D, leptospirosis: often biphasic, not a tertian pattern.

Final Answer: Malaria (*Plasmodium vivax*) $\Rightarrow$ C

Answer: (C) Go Back to Q15

Answer Key

Q	Ans	Q	Ans	Q	Ans	Q	Ans	Q	Ans
1	C	2	B	3	C	4	D	5	D
6	A	7	D	8	C	9	A	10	B
11	B	12	A	13	A	14	B	15	C