

INI CET Anaesthesiology

Sample Paper – 10

Duration: 14 Minutes

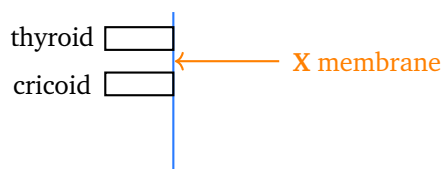
Maximum Marks: 15

Instructions

- This paper contains **15** Multiple Choice Questions (Single Best Response), modelled on the Anaesthesiology content of **INI CET** (Institutes of National Importance Combined Entrance Test) conducted by AIIMS New Delhi.
- The **15-question** length matches the number of Anaesthesiology 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.

Preoperative Assessment and Airway

- Q1.** In a 'cannot intubate, cannot oxygenate' emergency, a surgical cricothyroidotomy provides front-of-neck access. The membrane incised (marked X in the neck schematic below) lies between:



- (A) The hyoid bone and the thyroid cartilage
- (B) The first and second tracheal rings
- (C) The thyroid and cricoid cartilages



(D) The cricoid cartilage and the manubrium

Q2. When taking informed consent for anaesthesia during the preoperative visit, the anaesthetist must:

- (A) Obtain consent only after the patient has been premedicated and sedated
- (B) List every theoretical complication however remote and refuse surgery if any is declined
- (C) Explain the anaesthetic plan, the material risks and the alternatives in terms the patient understands, allowing questions
- (D) Delegate the discussion entirely to the surgeon since it is a surgical procedure

Q3. When deciding between regional and general anaesthesia for a frail elderly patient with severe chronic lung disease undergoing lower-limb surgery, the factor that most favours a regional (spinal or nerve block) technique is:

- (A) Avoidance of airway instrumentation and positive-pressure ventilation, preserving respiratory function
- (B) A guaranteed absence of any haemodynamic change
- (C) The patient's strong preference for being fully unconscious
- (D) The presence of a coagulopathy with a very low platelet count

General Anaesthesia and Pharmacology

Q4. A patient given intravenous morphine develops a respiratory rate of 6 per minute, pinpoint pupils and a falling oxygen saturation. The specific pharmacological reversal agent, and the reason repeated doses may be required, is:

- (A) Naloxone, a competitive opioid antagonist with a shorter half-life than most opioids, so re-sedation can occur
- (B) Flumazenil, because opioids act on benzodiazepine receptors



- (C) Neostigmine, which reverses opioid receptor binding
- (D) Atropine, which stimulates central respiratory drive

Q5. General anaesthesia and the supine position alter respiratory mechanics. The characteristic change that predisposes the anaesthetised patient to atelectasis and hypoxaemia is:

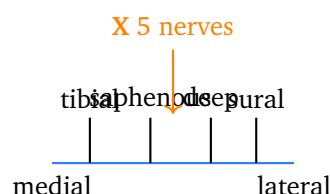
- (A) An increase in functional residual capacity above waking values
- (B) A reduction in functional residual capacity with basal airway closure and atelectasis
- (C) A rise in chest-wall muscle tone that splints the lungs open
- (D) Complete abolition of ventilation-perfusion mismatch

Q6. A patient with myasthenia gravis requires a muscle relaxant for surgery. The correct principle governing neuromuscular blocker use in this condition is:

- (A) They are resistant to all relaxants, so double doses are needed
- (B) Depolarising and non-depolarising agents behave identically to normal patients
- (C) Only depolarising agents are dangerous; non-depolarisers are entirely safe
- (D) They are markedly sensitive to non-depolarising blockers, which should be given in reduced doses and titrated to a nerve stimulator

Regional and Local Anaesthesia

Q7. A complete ankle block for forefoot surgery requires anaesthetising the terminal branches shown in the schematic below. The number of nerves that must be blocked, and their common trunk of origin for four of them, is:



- (A) Five nerves (posterior tibial, deep peroneal, superficial peroneal, sural and saphenous), four of which arise from the sciatic nerve
- (B) Two nerves only, both branches of the femoral nerve
- (C) Three nerves, all branches of the obturator nerve
- (D) A single nerve, the saphenous nerve alone

Q8. Twelve hours after removal of an epidural catheter a patient develops severe back pain, bilateral leg weakness and new urinary retention. The immediate priority is:

- (A) Reassurance and simple oral analgesia, reviewing the next day
- (B) Urgent MRI of the spine and neurosurgical referral, as an epidural haematoma or abscess causing cord compression must be excluded and decompressed early
- (C) Re-siting the epidural catheter to give more local anaesthetic
- (D) A single dose of intravenous paracetamol and discharge

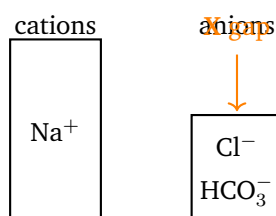
Monitoring, Fluids and Equipment

Q9. Processed electroencephalogram monitors such as Entropy and the bispectral index (BIS) are used during general anaesthesia mainly to:

- (A) Measure the arterial carbon dioxide directly
- (B) Confirm correct placement of the tracheal tube
- (C) Quantify the degree of neuromuscular blockade
- (D) Give a numerical index of the depth of hypnosis, helping to titrate anaesthesia and reduce the risk of awareness

Q10. An intraoperative arterial blood gas shows pH 7.28, low bicarbonate and a high anion gap. Using the schematic below (anion gap = Na^+ minus the sum of Cl^- and HCO_3^-), the disturbance and a typical perioperative cause are:





- (A) A respiratory alkalosis from hyperventilation
- (B) A metabolic alkalosis from vomiting
- (C) A normal-anion-gap acidosis from saline
- (D) A high-anion-gap metabolic acidosis, for example lactic acidosis from tissue hypoperfusion

Q11. A bleeding patient has a normal haemoglobin but a prolonged prothrombin time and raised INR after large-volume resuscitation. The blood product specifically indicated to replace the deficient clotting factors is:

- (A) Packed red blood cells
- (B) Fresh frozen plasma (FFP)
- (C) A platelet concentrate
- (D) Cryoprecipitate for isolated low fibrinogen

Complications and Critical Incidents

Q12. During surgery a patient with coronary disease develops new ST-segment depression on the monitor, tachycardia and hypotension. The most appropriate immediate management is:

- (A) Deliberately deepening the tachycardia with atropine to 'rest' the heart
- (B) Optimising myocardial oxygen supply and demand, giving oxygen, treating the tachycardia and hypotension, ensuring analgesia and calling for help
- (C) Immediately giving thrombolysis on the operating table without further assessment
- (D) Ignoring the change as an artefact and continuing surgery unchanged



- Q13.** After a difficult laryngoscopy a patient is found to have a chipped upper incisor. The correct approach to dental and airway trauma from laryngoscopy is:
- (A) Document the injury, retrieve any loose fragment to prevent aspiration, inform the patient and arrange dental review, and record risk factors for future care
 - (B) Conceal the injury as it is a recognised complication that needs no disclosure
 - (C) Leave any dislodged fragment in the airway as it will pass harmlessly
 - (D) Apply more force on the incisors at the next attempt to improve the view

Critical Care, Resuscitation and Pain

- Q14.** Under the Sepsis-3 definitions, septic shock is identified when, despite adequate fluid resuscitation, the patient needs vasopressors to maintain a mean arterial pressure of at least:
- (A) 45 mmHg with a normal lactate
 - (B) 55 mmHg with a lactate below 1 mmol/L
 - (C) 65 mmHg together with a serum lactate above 2 mmol/L
 - (D) 90 mmHg with any lactate value
- Q15.** The modern management of chronic pain is best described by the biopsychosocial model, which means that treatment should:
- (A) Rely on escalating opioid doses alone until the pain stops
 - (B) Treat only the physical tissue damage and ignore mood and function
 - (C) Combine physical, psychological and social approaches, using multi-modal analgesia, physiotherapy and psychological support to restore function
 - (D) Recommend indefinite bed rest and avoidance of all activity



Detailed Solutions**Q1.****Solution**

Concept – surgical cricothyroidotomy landmarks: Emergency front-of-neck access is the final step of the failed-airway drill.

Step 1 – locate the membrane: The **cricothyroid membrane** lies in the midline between the thyroid cartilage above and the cricoid cartilage below, palpable as a soft dip just beneath the laryngeal prominence.

Step 2 – why this site: It is superficial, relatively avascular and free of major structures, allowing a rapid scalpel-bougie-tube technique to oxygenate the patient.

Why the other options are wrong:

- A, hyoid to thyroid: is the thyrohyoid membrane, above the target.
- B, first and second tracheal rings: is the site for a formal tracheostomy, not the emergency membrane.
- D, cricoid to manubrium: lies over the lower trachea and great vessels.

Final Answer: Between the thyroid and cricoid cartilages ⇒ **C**

Answer: (C) [Go Back to Q1](#)

Q2.**Solution**

Concept – informed consent for anaesthesia: Consent must be voluntary, informed and given by a patient with capacity.

Step 1 – state the standard: The anaesthetist should **explain the anaesthetic plan, the material risks and the reasonable alternatives** in plain language and allow the patient to ask questions.

Step 2 – when and how: This discussion happens before any sedative premedication, while the patient can still weigh the information and decide freely.

Why the other options are wrong:

- A, consent after sedation: a premedicated patient may lack capacity to consent.
- B, listing every remote risk: consent covers material and significant risks, not an exhaustive catalogue.



- D, delegating wholly to the surgeon: the anaesthetist is responsible for the anaesthetic consent discussion.

Final Answer: Explain plan, risks and alternatives, allowing questions ⇒ C

Answer: (C) [Go Back to Q2](#)

Q3.

Solution

Concept – choosing regional over general anaesthesia: The technique is matched to the patient's physiology and the surgery.

Step 1 – weigh the respiratory disease: In a frail patient with severe lung disease, regional anaesthesia **avoids airway instrumentation and positive-pressure ventilation**, preserving respiratory function and reducing pulmonary complications.

Step 2 – suitability: Lower-limb surgery is well covered by a spinal or nerve block, so the patient can breathe spontaneously without a general anaesthetic.

Why the other options are wrong:

- B, no haemodynamic change: spinal anaesthesia can itself cause hypotension, so this is untrue.
- C, preference to be unconscious: this favours general, not regional, anaesthesia.
- D, coagulopathy with very low platelets: this is a contraindication to neuraxial blockade, arguing against regional.

Final Answer: Avoiding airway instrumentation and ventilation ⇒ A

Answer: (A) [Go Back to Q3](#)

Q4.

Solution

Concept – opioid-induced respiratory depression: Opioids depress the brainstem respiratory centres in a dose-dependent way.

Step 1 – recognise and reverse: The triad of a slow respiratory rate, pinpoint pupils and sedation is classic. The specific antidote is **naloxone**, a competitive opioid antagonist.

Step 2 – why redosing matters: Naloxone has a **shorter half-life than most**



opioids, so its effect can wear off and the patient may re-sedate, requiring repeat doses or an infusion and continued monitoring.

Why the other options are wrong:

- B, flumazenil: reverses benzodiazepines, not opioids.
- C, neostigmine: reverses non-depolarising neuromuscular block, not opioids.
- D, atropine: is an antimuscarinic and does not reverse opioid respiratory depression.

Final Answer: Naloxone, shorter half-life so re-sedation can occur ⇒ **A**

Answer: (A) [Go Back to Q4](#)

Q5.

Solution

Concept – respiratory effects of general anaesthesia: Induction and the supine position reduce lung volumes.

Step 1 – identify the key change: General anaesthesia causes a **fall in functional residual capacity (FRC)**, so the lung volume drops below the closing capacity, leading to basal airway closure and **atelectasis**.

Step 2 – the consequence: The resulting shunt and ventilation-perfusion mismatch cause hypoxaemia, which is why anaesthetised patients are preoxygenated and often given PEEP or recruitment breaths.

Why the other options are wrong:

- A, increased FRC: the opposite occurs; FRC falls.
- C, raised chest-wall tone: muscle tone is lost, not increased.
- D, abolition of mismatch: anaesthesia worsens ventilation-perfusion mismatch.

Final Answer: Reduced FRC with atelectasis ⇒ **B**

Answer: (B) [Go Back to Q5](#)



Q6.

Solution

Concept – neuromuscular blockers in myasthenia gravis: Myasthenia reduces the number of functioning acetylcholine receptors at the motor end-plate.

Step 1 – state the principle: These patients are **markedly sensitive to non-depolarising blockers**, so doses are reduced and titrated carefully against a peripheral nerve stimulator.

Step 2 – the depolarising side: They are relatively resistant to suxamethonium and may need a larger dose, but non-depolarisers are the clinically important sensitivity to remember.

Why the other options are wrong:

- A, resistant to all relaxants: they are sensitive, not resistant, to non-depolarisers.
- B, identical to normal patients: their receptor deficit changes the response.
- C, only depolarisers dangerous: the key hazard is exaggerated non-depolarising block.

Final Answer: Sensitive to non-depolarisers, reduce and titrate ⇒ **D**

Answer: (D) [Go Back to Q6](#)

Q7.

Solution

Concept – the ankle block: A complete ankle block anaesthetises the foot by targeting five terminal nerves.

Step 1 – list the five nerves: The **posterior tibial, deep peroneal, superficial peroneal, sural and saphenous** nerves must all be blocked to cover the whole foot.

Step 2 – their origin: Four of them (posterior tibial, deep peroneal, superficial peroneal and sural) are branches of the **sciatic nerve**; only the saphenous nerve, a branch of the femoral nerve, is not.

Why the other options are wrong:

- B, two femoral branches: undercounts the nerves and the origins.
- C, three obturator branches: the obturator does not supply the foot.
- D, saphenous alone: a single nerve cannot anaesthetise the whole foot.



Final Answer: Five nerves, four from the sciatic nerve $\Rightarrow$ **A**

Answer: (A) [Go Back to Q7](#)

Q8.

Solution

Concept – epidural haematoma and abscess: New neurological signs after an epidural are red flags for cord compression.

Step 1 – recognise the emergency: Severe back pain, bilateral leg weakness and urinary retention suggest an **epidural haematoma or abscess** compressing the cord or cauda equina.

Step 2 – the immediate action: Arrange an **urgent MRI and neurosurgical referral**, because surgical decompression within hours offers the best chance of neurological recovery.

Why the other options are wrong:

- A, reassurance and review next day: delay risks permanent paralysis.
- C, re-siting the catheter: adds risk and ignores the compressive cause.
- D, paracetamol and discharge: misses a time-critical surgical emergency.

Final Answer: Urgent MRI and neurosurgical referral $\Rightarrow$ **B**

Answer: (B) [Go Back to Q8](#)

Q9.

Solution

Concept – processed-EEG depth-of-anaesthesia monitors: Entropy and the bispectral index derive a number from the frontal EEG.

Step 1 – state the purpose: They give a **numerical index of the depth of hypnosis**, helping the anaesthetist titrate the anaesthetic and reduce the risk of accidental awareness.

Step 2 – how they work: As anaesthesia deepens the EEG slows, and the processed value falls into a target range (for example BIS 40 to 60) for adequate hypnosis.

Why the other options are wrong:

- A, arterial CO₂: is measured by capnography or a blood gas.



- B, tube placement: is confirmed by capnography and auscultation.
- C, neuromuscular block: is measured with a peripheral nerve stimulator.

Final Answer: Index of depth of hypnosis $\Rightarrow$ D

Answer: (D) [Go Back to Q9](#)

Q10.

Solution

Concept – anion-gap interpretation: The anion gap equals Na^+ minus the sum of Cl^- and HCO_3^- , normally about 8 to 12 mmol/L.

Step 1 – classify the gas: A low pH with a low bicarbonate is a metabolic acidosis; a raised gap makes it a **high-anion-gap metabolic acidosis**.

Step 2 – the perioperative cause: A common intraoperative cause is **lactic acidosis** from tissue hypoperfusion (for example hypovolaemia or sepsis) generating unmeasured lactate anions.

Why the other options are wrong:

- A, respiratory alkalosis: would raise the pH, not lower it.
- B, metabolic alkalosis: would show a high bicarbonate and high pH.
- C, normal-gap saline acidosis: has a normal anion gap, not a raised one.

Final Answer: High-anion-gap acidosis, for example lactic acidosis $\Rightarrow$ D

Answer: (D) [Go Back to Q10](#)

Q11.

Solution

Concept – blood products and their indications: Each component replaces a specific deficiency.

Step 1 – match the defect: A prolonged prothrombin time and raised INR indicate deficient coagulation factors, replaced by **fresh frozen plasma (FFP)**, which contains all the clotting factors.

Step 2 – the other products: Packed red cells raise haemoglobin, platelet concentrates treat thrombocytopenia, and cryoprecipitate replaces fibrinogen; none of these corrects a global factor deficiency the way FFP does.

Why the other options are wrong:



- A, packed red cells: the haemoglobin is already normal here.
- C, platelets: the platelet count is not the abnormality described.
- D, cryoprecipitate: is for isolated low fibrinogen, not a general factor deficiency.

Final Answer: Fresh frozen plasma ⇒ **B**

Answer: (B) [Go Back to Q11](#)

Q12.

Solution

Concept – perioperative myocardial ischaemia: Ischaemia arises when myocardial oxygen demand outstrips supply.

Step 1 – recognise it: New ST-segment depression with tachycardia and hypotension signals **myocardial ischaemia**.

Step 2 – the management: **Optimise oxygen supply and demand**, give oxygen, slow the tachycardia, restore blood pressure and coronary perfusion, ensure adequate analgesia and call for help; this restores the supply-demand balance.

Why the other options are wrong:

- A, atropine to worsen tachycardia: tachycardia increases demand and shortens diastolic filling, worsening ischaemia.
- C, on-table thrombolysis: is inappropriate and dangerous during surgery.
- D, ignoring it: risks infarction and arrest.

Final Answer: Optimise oxygen supply and demand and call for help ⇒ **B**

Answer: (B) [Go Back to Q12](#)

Q13.

Solution

Concept – dental and airway trauma from laryngoscopy: Dental damage is among the commonest anaesthetic complications and medicolegal claims.

Step 1 – act on the injury: **Document the injury, retrieve any loose fragment** to prevent aspiration, inform the patient honestly and arrange dental review.

Step 2 – prevention and duty of candour: Recording risk factors (loose or capped teeth, poor dentition) guides safer future airway management, and open disclosure is required.



Why the other options are wrong:

- B, concealing the injury: breaches the duty of candour.
- C, leaving a fragment in the airway: risks aspiration and airway obstruction.
- D, more force on the incisors: causes further dental trauma.

Final Answer: Document, retrieve fragment, inform and arrange review ⇒ **A**

Answer: (A) [Go Back to Q13](#)

Q14.

Solution

Concept – Sepsis-3 and septic shock: Sepsis is life-threatening organ dysfunction from a dysregulated response to infection.

Step 1 – define septic shock: Septic shock is present when, despite adequate fluid resuscitation, vasopressors are needed to keep the **mean arterial pressure at least 65 mmHg** and the **serum lactate is above 2 mmol/L**.

Step 2 – the resuscitation bundle: Early management measures lactate, takes cultures, gives broad-spectrum antibiotics and a fluid bolus, and starts vasopressors to reach the pressure target.

Why the other options are wrong:

- A, 45 mmHg; B, 55 mmHg: fall short of the 65 mmHg target and omit the lactate criterion.
- D, 90 mmHg with any lactate: overstates the pressure target and drops the lactate threshold.

Final Answer: MAP at least 65 mmHg with lactate above 2 mmol/L ⇒ **C**

Answer: (C) [Go Back to Q14](#)

Q15.

Solution

Concept – the biopsychosocial model of chronic pain: Chronic pain reflects biological, psychological and social factors together.

Step 1 – state the principle: Management should **combine physical, psychological and social approaches**, using multimodal analgesia, physiotherapy and psychological support to restore function rather than chase a pain score to zero.



Step 2 – the practical aim: Improving function, mood and participation matters more than opioid escalation, which carries tolerance and harm.

Why the other options are wrong:

- A, escalating opioids alone: ignores the psychological and social dimensions and causes harm.
- B, treating tissue damage only: misses the drivers of chronic pain.
- D, indefinite bed rest: worsens deconditioning and disability.

Final Answer: Combine physical, psychological and social approaches ⇒ C

Answer: (C) [Go Back to Q15](#)



Answer Key

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

