

INI CET Anaesthesiology

Sample Paper – 9

Duration: 14 Minutes

Maximum Marks: 15

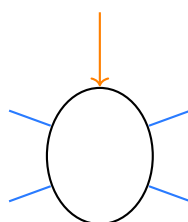
Instructions

- 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. A trauma patient with a suspected unstable cervical spine injury needs urgent tracheal intubation. The airway technique that best protects the spine, shown below with an assistant holding the head and neck steady, is:

X hands steady the head



neck held neutral



- (A) Full head-tilt chin-lift with maximal neck extension
- (B) A blind nasal intubation without any neck support
- (C) Direct laryngoscopy with manual in-line stabilisation of the head and neck
- (D) Deferring the airway until cervical imaging is complete

Q2. In a fit, asymptomatic 30-year-old woman scheduled for minor day-case surgery, the correct approach to routine preoperative investigations is:

- (A) Order a full battery of blood tests, chest X-ray and ECG for every patient
- (B) Order coagulation studies routinely before all operations
- (C) Order an echocardiogram in every adult before anaesthesia
- (D) Order tests selectively, guided by the history, examination and the planned procedure

Q3. When planning the airway of a morbidly obese (bariatric) patient, the recommended optimal position for pre-oxygenation and laryngoscopy is:

- (A) Supine and flat with no head support
- (B) Steep head-down (Trendelenburg) position
- (C) Full left lateral position
- (D) The 'ramped' position, aligning the external auditory meatus with the sternal notch

General Anaesthesia and Pharmacology

Q4. During inhalational induction, the ratio of alveolar to inspired anaesthetic concentration (F_A/F_I) rises fastest for an agent that is:

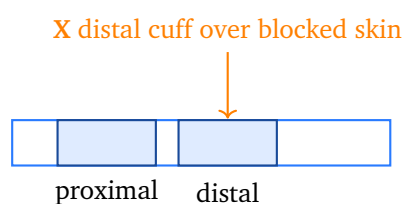
- (A) Highly soluble in blood, with a high blood-gas partition coefficient
- (B) Poorly soluble in blood, with a low blood-gas partition coefficient
- (C) Highly protein bound in the plasma
- (D) Rapidly metabolised by the liver



- Q5.** A patient is given midazolam as premedication and later becomes over-sedated with respiratory depression. The specific pharmacological reversal agent is:
- (A) Naloxone
 - (B) Neostigmine
 - (C) Sugammadex
 - (D) Flumazenil
- Q6.** Ondansetron, a widely used antiemetic for postoperative nausea and vomiting, acts mainly by blocking which receptor?
- (A) The 5-HT₃ (serotonin) receptor
 - (B) The dopamine D₂ receptor
 - (C) The histamine H₁ receptor
 - (D) The muscarinic acetylcholine receptor

Regional and Local Anaesthesia

- Q7.** Intravenous regional anaesthesia (Bier block) uses a double tourniquet, shown below, to anaesthetise a limb. The main safety purpose of the double cuff is to:



- (A) Speed the onset of the block
 - (B) Allow a larger dose of local anaesthetic to be used
 - (C) Let the distal cuff be inflated over already-anaesthetised skin, reducing tourniquet pain
 - (D) Remove the need to exsanguinate the limb first
- Q8.** Compared with a landmark or nerve-stimulator technique, the principal advantage of ultrasound-guided regional anaesthesia is that it:



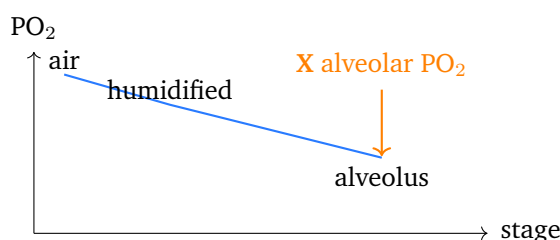
- (A) Allows real-time visualisation of the nerve, needle and spread of local anaesthetic
- (B) Eliminates the need for any local anaesthetic
- (C) Guarantees that systemic toxicity can never occur
- (D) Removes the need for sterile technique

Monitoring, Fluids and Equipment

Q9. An anaesthetic gas scavenging system is fitted to the anaesthetic machine chiefly in order to:

- (A) Remove waste anaesthetic gases from the theatre, protecting staff from chronic exposure
- (B) Warm and humidify the inspired gases for the patient
- (C) Increase the fresh gas flow delivered to the patient
- (D) Monitor the depth of anaesthesia

Q10. The oxygen cascade below traces the fall in oxygen partial pressure from dry inspired air to the alveolus. The alveolar gas equation is used to estimate the value marked **X**, the:



- (A) Mixed venous oxygen content
- (B) Arterial carbon dioxide production rate
- (C) Alveolar partial pressure of oxygen (PAO_2)
- (D) Haemoglobin concentration

Q11. In a mechanically ventilated patient, a high stroke volume variation and a rise in cardiac output after a passive leg raise together indicate that the patient is:



- (A) Fluid overloaded and needs a diuretic
- (B) In established cardiogenic shock unresponsive to fluid
- (C) Fluid responsive and likely to benefit from a fluid bolus
- (D) Adequately filled and needing no further assessment

Complications and Critical Incidents

Q12. Midway through surgery a patient develops sudden hypotension, bronchospasm, a widespread urticarial rash and rising airway pressures; latex is the suspected trigger. The single most important first drug is:

- (A) Intravenous hydrocortisone as the first-line drug
- (B) Intramuscular or titrated intravenous adrenaline (epinephrine)
- (C) An intravenous antihistamine alone
- (D) A nebulised bronchodilator alone

Q13. A patient shivers vigorously in the recovery room after general anaesthesia, increasing oxygen consumption. Besides active warming, the drug most commonly used to treat postoperative shivering is:

- (A) Intravenous adrenaline
- (B) Intravenous pethidine (meperidine)
- (C) Intravenous furosemide
- (D) Intravenous atropine

Critical Care, Resuscitation and Pain

Q14. A conscious adult at a restaurant suddenly clutches the throat, cannot speak or cough and is going blue. Recognising complete foreign-body airway obstruction, the correct immediate action is:

- (A) Give back blows and then abdominal thrusts (Heimlich manoeuvre)
- (B) Lay the patient flat and start chest compressions at once
- (C) Offer water to help swallow the object down



(D) Do nothing and wait for the obstruction to clear on its own

Q15. An acute pain service promotes pre-emptive (and preventive) analgesia, the principle of which is to:

- (A) Give analgesia only once the patient reports severe pain
- (B) Begin analgesia before the surgical stimulus to reduce central sensitisation and later pain
- (C) Rely solely on a single strong opioid for every patient
- (D) Avoid all analgesia until the day after surgery



Detailed Solutions

Q1.

Solution

Concept – airway in suspected cervical spine injury: A potentially unstable neck must be moved as little as possible while the airway is secured.

Step 1 – name the technique: Perform **direct laryngoscopy with manual in-line stabilisation**, where an assistant holds the head and neck in the neutral position to limit movement while intubation proceeds.

Step 2 – why it is preferred: It secures a definitive airway promptly while minimising cervical movement; the anterior part of a hard collar can be temporarily opened to aid mouth opening.

Why the other options are wrong:

- A, head-tilt with extension: dangerously moves an unstable spine.
- B, blind nasal without support: is uncontrolled and still moves the neck.
- D, deferring for imaging: an urgent airway cannot wait for scans.

Final Answer: Direct laryngoscopy with manual in-line stabilisation ⇒ **C**

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

Q2.

Solution

Concept – rational preoperative investigation: Tests should be ordered for a reason, not by ritual.

Step 1 – state the principle: Investigations are ordered **selectively, guided by the history, examination and the planned procedure**, not as a blanket panel.

Step 2 – apply it: A fit young woman for minor surgery needs few or no routine tests; testing is escalated only where comorbidity or a major procedure justifies it.

Why the other options are wrong:

- A, full battery for all: wastes resources and yields false positives.
- B, routine coagulation: is unnecessary without a bleeding history.
- C, echocardiogram for all: is not indicated without cardiac signs.

Final Answer: Test selectively, guided by history and procedure ⇒ **D**

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



Q3.

Solution

Concept – positioning the obese airway: Excess soft tissue makes obese patients desaturate fast and can be hard to intubate.

Step 1 – name the position: Use the **ramped position**, building up the head and shoulders so the external auditory meatus lines up horizontally with the sternal notch.

Step 2 – why it helps: Ramping improves the laryngeal view, opens the upper airway and prolongs safe apnoea time during pre-oxygenation.

Why the other options are wrong:

- A, supine and flat: worsens the view and hastens desaturation.
- B, steep head-down: splints the diaphragm and reduces reserve.
- C, full lateral: is not the standard intubating position.

Final Answer: The ramped position (meatus to sternal notch) $\Rightarrow$ **D**

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

Q4.

Solution

Concept – uptake of inhaled anaesthetics: The speed of induction depends on how fast alveolar concentration approaches the inspired concentration (F_A/F_I).

Step 1 – pick the property: F_A/F_I rises fastest for an agent that is **poorly soluble in blood, with a low blood-gas partition coefficient**.

Step 2 – the reasoning: An insoluble agent is taken up little by blood, so the alveolar tension climbs quickly (for example sevoflurane and nitrous oxide induce faster than the more soluble older agents).

Why the other options are wrong:

- A, high solubility: slows the F_A/F_I rise because blood absorbs the agent.
- C, high protein binding: is not the main determinant of inhaled uptake.
- D, rapid hepatic metabolism: does not govern the alveolar wash-in rate.

Final Answer: Poorly soluble, low blood-gas coefficient $\Rightarrow$ **B**

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



Q5.

Solution

Concept – reversing benzodiazepine sedation: Midazolam acts at the GABA_A benzodiazepine site, and its effect can be pharmacologically reversed.

Step 1 – name the antagonist: Flumazenil is the specific competitive benzodiazepine receptor antagonist that reverses excessive sedation and respiratory depression from midazolam.

Step 2 – a caution: Its action is shorter than that of midazolam, so re-sedation can occur and the patient must be watched.

Why the other options are wrong:

- A, naloxone: reverses opioids, not benzodiazepines.
- B, neostigmine; C, sugammadex: reverse neuromuscular blockade, not sedation.

Final Answer: Flumazenil ⇒ D

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

Q6.

Solution

Concept – antiemetic receptor targets: Different antiemetics block different receptors involved in vomiting.

Step 1 – match ondansetron: Ondansetron is a 5-HT₃ (serotonin) receptor antagonist, highly effective for postoperative nausea and vomiting.

Step 2 – the wider map: Metoclopramide and prochlorperazine block D₂, cyclizine blocks H₁, and hyoscine blocks the muscarinic receptor.

Why the other options are wrong:

- B, D₂: is the target of dopamine antagonists, not ondansetron.
- C, H₁: is blocked by antihistamine antiemetics.
- D, muscarinic: is blocked by antimuscarinics such as hyoscine.

Final Answer: The 5-HT₃ serotonin receptor ⇒ A

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



Q7.

Solution

Concept – the Bier block double tourniquet: Intravenous regional anaesthesia fills an exsanguinated limb with local anaesthetic held in by a tourniquet.

Step 1 – state the purpose: The double cuff lets the distal cuff be inflated over already-anaesthetised skin, so tourniquet pain is reduced when the proximal cuff is released.

Step 2 – the sequence: The proximal cuff is inflated first for the block; later the distal cuff (over numb skin) is inflated and the proximal one deflated for comfort.

Why the other options are wrong:

- A, speed onset: the second cuff does not affect onset speed.
- B, allow a larger dose: dose is limited by toxicity, not the cuff.
- D, remove exsanguination: the limb must still be exsanguinated first.

Final Answer: Distal cuff inflated over numb skin, easing tourniquet pain ⇒ C

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

Q8.

Solution

Concept – ultrasound-guided regional anaesthesia: Ultrasound has transformed nerve blocks by making the anatomy visible.

Step 1 – state the advantage: It allows real-time visualisation of the nerve, the advancing needle and the spread of local anaesthetic, improving accuracy.

Step 2 – the benefits that follow: Better targeting can reduce the dose needed, improve success rates and lower (though not abolish) the risk of vascular puncture.

Why the other options are wrong:

- B, no local anaesthetic: the drug is still essential.
- C, guarantees no toxicity: risk is reduced, not eliminated.
- D, no sterile technique: asepsis is still mandatory.

Final Answer: Real-time view of nerve, needle and spread ⇒ A

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



Q9.

Solution

Concept – gas scavenging: Chronic exposure to trace anaesthetic gases is an occupational hazard for theatre staff.

Step 1 – state the purpose: The scavenging system **removes waste anaesthetic gases from the theatre**, protecting staff from chronic exposure.

Step 2 – how it works: Expired and excess gas is collected at the expiratory valve or ventilator outlet and vented safely away from the working area.

Why the other options are wrong:

- B, warm and humidify: that is the role of a heat-moisture exchanger.
- C, increase fresh gas flow: is set by the flowmeters, not scavenging.
- D, monitor depth: is done clinically or with processed EEG.

Final Answer: Remove waste gases to protect staff $\Rightarrow$ **A**

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

Q10.

Solution

Concept – the oxygen cascade and the alveolar gas equation: Oxygen tension falls in steps from the atmosphere to the alveolus.

Step 1 – identify X: The alveolar gas equation estimates the **alveolar partial pressure of oxygen (PAO₂)**, the value marked X.

Step 2 – the equation: $PAO_2 = FiO_2(P_{atm} - P_{H_2O}) - PaCO_2/R$, accounting for humidification and carbon dioxide, and this PAO₂ drives diffusion into the blood.

Why the other options are wrong:

- A, mixed venous oxygen: is a separate measured value.
- B, CO₂ production rate: is not the output of this equation.
- D, haemoglobin: relates to oxygen content, not alveolar tension.

Final Answer: Alveolar partial pressure of oxygen (PAO₂) $\Rightarrow$ **C**

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



Q11.

Solution

Concept – assessing fluid responsiveness: Dynamic indices predict whether a fluid bolus will raise cardiac output.

Step 1 – read the signs: A high stroke volume variation with a rise in cardiac output after a passive leg raise shows the patient is **fluid responsive and likely to benefit from a fluid bolus**.

Step 2 – the physiology: The leg raise gives a reversible ‘auto-transfusion’ of venous blood; a rising output means the heart is operating on the steep part of the Frank-Starling curve.

Why the other options are wrong:

- A, overloaded needing a diuretic: is the opposite picture.
- B, cardiogenic shock unresponsive: a positive leg-raise response argues against this.
- D, adequately filled: high variation shows the patient is under-filled.

Final Answer: Fluid responsive, will benefit from a bolus $\Rightarrow$ **C**

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

Q12.

Solution

Concept – perioperative anaphylaxis: Latex is a recognised trigger of intraoperative anaphylaxis, presenting with cardiovascular and respiratory collapse and a rash.

Step 1 – name the first drug: Give **adrenaline (epinephrine)**, titrated intravenously or intramuscularly, as the single most important first-line treatment, along with removing the trigger, oxygen and fluids.

Step 2 – why adrenaline: It reverses bronchospasm, supports blood pressure and stabilises mast cells; antihistamines and steroids are second-line adjuncts.

Why the other options are wrong:

- A, hydrocortisone first: steroids act too slowly to be first-line.
- C, antihistamine alone: does not treat the shock or bronchospasm adequately.
- D, bronchodilator alone: ignores the circulatory collapse.



Final Answer: Adrenaline (epinephrine) ⇒ **B**

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

Q13.

Solution

Concept – postoperative shivering: Shivering after anaesthesia raises oxygen consumption and is uncomfortable.

Step 1 – name the drug: Besides active warming, **intravenous pethidine (meperidine)** is the drug most commonly used to stop postoperative shivering.

Step 2 – the mechanism: Pethidine acts partly through kappa-opioid activity to lower the shivering threshold; clonidine and tramadol are alternatives.

Why the other options are wrong:

- A, adrenaline: would worsen tachycardia and does not treat shivering.
- C, furosemide: is a diuretic, unrelated to shivering.
- D, atropine: is an antimuscarinic, not an antishivering drug.

Final Answer: Intravenous pethidine (meperidine) ⇒ **B**

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

Q14.

Solution

Concept – choking (foreign-body airway obstruction) in an adult: Inability to speak, cough or breathe signals complete obstruction in a conscious victim.

Step 1 – state the action: While the victim is still conscious, give up to five **back blows and then abdominal thrusts (the Heimlich manoeuvre)**, alternating until the object clears.

Step 2 – if they collapse: Only if the victim becomes unconscious do you lower them and begin CPR, checking the mouth for the dislodged object.

Why the other options are wrong:

- B, immediate compressions: are for the unconscious victim, not yet.
- C, offer water: risks worsening the obstruction.
- D, do nothing: complete obstruction is rapidly fatal without action.

Final Answer: Back blows then abdominal thrusts (Heimlich) ⇒ **A**



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

Q15.

Solution

Concept – pre-emptive analgesia: The acute pain service promotes treating pain before it becomes established.

Step 1 – state the principle: Pre-emptive analgesia means **beginning analgesia before the surgical stimulus** to blunt central sensitisation and reduce postoperative pain.

Step 2 – how it is applied: Multimodal drugs and regional techniques are started before or at incision as part of a preventive, opioid-sparing plan.

Why the other options are wrong:

- A, only once severe: is reactive, not pre-emptive.
- C, a single strong opioid: ignores the multimodal approach.
- D, avoid analgesia until next day: leaves pain untreated and worsens sensitisation.

Final Answer: Start analgesia before the stimulus to cut sensitisation ⇒ **B**

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



Answer Key

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

