

INI CET Forensic Medicine

Sample Paper – 8

Duration: 14 Minutes

Maximum Marks: 15

Instructions

- This paper contains **15** Multiple Choice Questions (Single Best Response), modelled on the Forensic Medicine and Toxicology content of **INI CET** (Institutes of National Importance Combined Entrance Test) conducted by AIIMS New Delhi.
- The **15-question** length matches the number of Forensic 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 based on standard forensic pathology, thanatology and toxicology.
- Attempt this practice paper in one timed sitting of about **14 minutes**, the pace the real computer-based test demands.

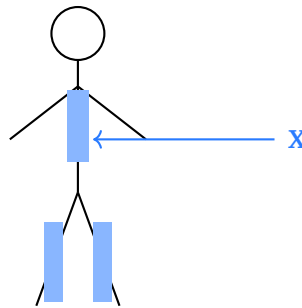
Thanatology

- Q1.** Which of the following is a post-mortem artefact that may be mistaken for an ante-mortem injury on the body?
- (A) A bruise showing colour change with vital tissue reaction
(B) A patterned abrasion with a distinct vital reaction
(C) An incised wound that gapes and shows brisk haemorrhage
(D) Postmortem ant and cockroach feeding erosions resembling abrasions
- Q2.** Which feature best distinguishes post-mortem hypostasis (lividity) from an ante-mortem bruise on incision of the discoloured area?



- (A) Lividity is raised above the skin surface and firm to touch
- (B) Lividity always lies at the site of mechanical impact
- (C) In lividity the blood stays within vessels and washes away, whereas a bruise shows extravasated blood in tissue that does not wash off
- (D) Lividity is invariably accompanied by swelling and coagulated clot

Q3. In the body schematic shown, the bluish-purple discolouration (marked X) collects in the dependent parts but spares the areas pressed against the ground and under tight clothing. This distribution is characteristic of:

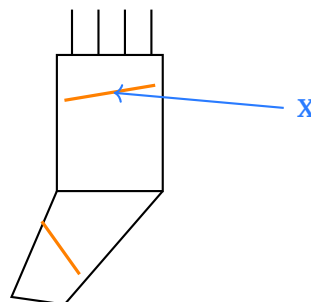


dependent parts stained; contact points pale

- (A) Widespread ante-mortem bruising
- (B) Post-mortem hypostasis (lividity)
- (C) Generalised cyanosis of a live patient
- (D) Cadaveric spasm of the trunk

Mechanical Injuries

Q4. The cuts shown across the palm and the ulnar (little-finger) border of the forearm (marked X), sustained by a victim while warding off an assailant's sharp weapon, are called:



- (A) Defence wounds
- (B) Fabricated (fictitious) wounds
- (C) Hesitation (tentative) cuts
- (D) Patterned pressure abrasions

Q5. Which single feature most strongly suggests that a wound is fabricated (fictitious / self-inflicted) rather than genuinely inflicted by an assailant?

- (A) Multiple superficial parallel cuts of uniform depth on easily reachable sites, sparing vital and sensitive areas, with the overlying clothing left undamaged
- (B) A single deep wound in the centre of the upper back between the scapulae
- (C) A wound running through torn, blood-stained clothing over a vital area
- (D) A deep irregular wound with underlying fracture and heavy bleeding

Asphyxial Deaths

Q6. A middle-aged man collapses and dies suddenly while eating a meal at a restaurant, from impaction of a large food bolus at the laryngeal inlet. This sudden death is known as:

- (A) Simple vagal inhibition without any obstruction
- (B) Cafe coronary
- (C) Autoerotic asphyxia
- (D) Burking

Q7. A man is found dead alone in a locked room, partially suspended by a soft ligature, surrounded by a mirror, pornographic material and cross-dressing, with an escape mechanism that failed. The most likely manner and type of death is:

- (A) Accidental autoerotic (sexual) asphyxia



- (B) Homicidal ligature strangulation
- (C) Suicidal hanging with intent to die
- (D) Cafe coronary during eating

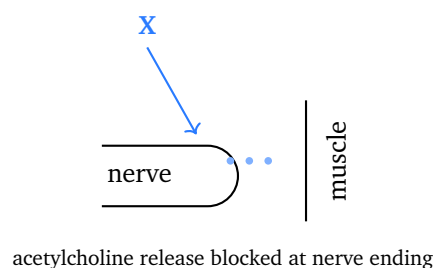
Forensic Identification and Medical Jurisprudence

- Q8.** A surgical mop is discovered inside a patient's abdomen after an operation. The negligence is so self-evident that the very fact of its occurrence speaks for itself and shifts the burden of proof onto the doctor. This doctrine is:
- (A) Contributory negligence
 - (B) Vicarious liability
 - (C) Res ipsa loquitur
 - (D) Novus actus interveniens
- Q9.** A hospital is held legally answerable for the negligent act of its salaried junior doctor committed during the course of employment. The principle applied is:
- (A) Res ipsa loquitur
 - (B) Vicarious liability
 - (C) Contributory negligence
 - (D) Therapeutic misadventure
- Q10.** A patient's condition worsens partly because he failed to take the prescribed medicines and ignored clear follow-up instructions, thereby sharing the blame for his own harm. The defence available to the doctor is:
- (A) Res ipsa loquitur
 - (B) Vicarious liability
 - (C) Therapeutic misadventure
 - (D) Contributory negligence



General Toxicology and Corrosive Poisons

- Q11.** Which bacterial food poisoning has the shortest incubation period (about 1 to 6 hours), is caused by a preformed heat-stable enterotoxin, and presents chiefly with sudden vomiting?
- (A) *Staphylococcus aureus* food poisoning
(B) *Salmonella* food poisoning
(C) *Clostridium botulinum* food poisoning
(D) *Vibrio parahaemolyticus* food poisoning
- Q12.** Botulinum toxin from *Clostridium botulinum* causes descending flaccid paralysis by acting at the neuromuscular junction (the presynaptic terminal marked X). Its mechanism of action is:



- (A) Blockade of acetylcholine receptors on the muscle end-plate
(B) Increased release of acetylcholine causing sustained contraction
(C) Inhibition of acetylcholine release from the presynaptic nerve terminal
(D) Inhibition of acetylcholinesterase with acetylcholine accumulation

Specific Poisons

- Q13.** A farmer develops sudden generalised convulsions after occupational exposure to the organochlorine insecticide endrin. Organochlorine compounds produce their toxicity mainly by:
- (A) Cellular hypoxia due to inhibition of cytochrome oxidase
(B) Conversion of haemoglobin to methaemoglobin



- (C) Irreversible inhibition of acetylcholinesterase at synapses
- (D) Interference with axonal cation flux and GABA, producing central nervous system stimulation and convulsions

Q14. Strychnine poisoning produces violent symmetrical convulsions with the body arched backwards (opisthotonus) while the patient stays fully conscious between fits. The underlying mechanism is:

- (A) Irreversible inhibition of acetylcholinesterase
- (B) Blockade of dopamine receptors in the basal ganglia
- (C) Antagonism of the inhibitory neurotransmitter glycine at the spinal cord (Renshaw cells)
- (D) Enhancement of GABA action in the cerebral cortex

Q15. Nicotine acts on autonomic ganglionic and neuromuscular nicotinic receptors, first stimulating and then blocking them by persistent depolarisation. In acute nicotine poisoning, death is usually caused by:

- (A) Cardiac arrhythmia secondary to severe hyperkalaemia
- (B) Respiratory failure from paralysis of the respiratory muscles
- (C) Fulminant hepatic failure and encephalopathy
- (D) Acute renal failure from tubular necrosis



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

Concept – post-mortem artefacts: An artefact is a change produced after death or during handling that can mimic a true injury.

Step 1 – identify the artefact: **Ant and cockroach feeding** after death leaves dry, brownish, irregular erosions with a bevelled margin that closely resemble abrasions.

Step 2 – how to tell: These erosions show **no vital reaction** (no redness, no bleeding into tissue), confirming they arose after death.

Why the other options are wrong:

- A, a bruise with colour change: shows a vital reaction, so it is ante-mortem.
- B, a patterned abrasion with vital reaction: again a true ante-mortem injury.
- C, a gaping incised wound with haemorrhage: brisk bleeding proves it happened in life.

Final Answer: Insect (ant/cockroach) feeding erosions ⇒ D

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

Q2.**Solution**

Concept – lividity versus bruise: Both look bluish, but the location of the blood differs.

Step 1 – the key test: On incision, **hypostasis shows blood confined within vessels**, which can be washed away, leaving clean tissue.

Step 2 – contrast with a bruise: A bruise shows **extravasated blood in the tissue spaces** that cannot be washed off, because vessels were torn during life.

Why the other options are wrong:

- A, raised and firm: lividity is not raised; a bruise may be swollen.
- B, at the site of impact: lividity follows gravity (dependent parts), not the point of impact.
- D, swelling with clot: describes a bruise, not hypostasis.

Final Answer: Blood in vessels washes away in lividity ⇒ C



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

Q3.

Solution

Concept – distribution of lividity: The pattern of a post-mortem stain follows gravity and contact pressure.

Step 1 – read the schematic: The discolouration (X) collects in the **dependent parts** and **sparing the contact points** and areas under tight clothing, where capillaries are compressed.

Step 2 – interpret: This gravity-dependent, contact-pale pattern is the signature of **post-mortem hypostasis (lividity)**.

Why the other options are wrong:

- A, bruising: located at sites of trauma, not uniformly in dependent parts.
- C, cyanosis: a generalised bluish tint seen in a living, hypoxic patient.
- D, cadaveric spasm: an instantaneous stiffening of muscles, not a colour change.

Final Answer: Post-mortem hypostasis (lividity) ⇒ **B**

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

Q4.

Solution

Concept – defence wounds: Wounds sustained while resisting an attack have a typical site.

Step 1 – identify X: Cuts across the **palm, fingers and ulnar border of the forearm** are classic **defence wounds**, made while the victim grasps or raises an arm to ward off the weapon.

Step 2 – significance: Their presence indicates the victim was conscious and able to resist.

Why the other options are wrong:

- B, fabricated wounds: superficial, on reachable sites, and self-made.
- C, hesitation cuts: shallow tentative cuts near a suicidal wound, not on the palm.
- D, patterned abrasion: a pressure imprint, not a sharp-force cut.



Final Answer: Defence wounds $\Rightarrow$ A

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

Q5.

Solution

Concept – fabricated (fictitious) wounds: Self-made wounds meant to accuse another follow a recognisable pattern.

Step 1 – name the giveaway: **Multiple superficial parallel cuts of uniform depth on accessible sites**, sparing vital and sensitive areas, with clothing left intact, strongly suggest fabrication.

Step 2 – reasoning: A person avoids painful or dangerous areas and rarely damages their own clothes, so these features betray a self-inflicted origin.

Why the other options are wrong:

- B, a wound between the scapulae: an unreachable site, so not self-inflicted.
- C, a wound through torn clothing over a vital area: features of a genuine assault.
- D, a deep wound with fracture and heavy bleeding: severe, not the shallow uniform pattern of fabrication.

Final Answer: Superficial uniform cuts on reachable sites, clothing intact $\Rightarrow$ A

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

Q6.

Solution

Concept – sudden death while eating: A food bolus at the larynx can kill within minutes.

Step 1 – name it: Sudden collapse and death from a **food bolus impacting the laryngeal inlet** while eating is called a **cafe coronary**.

Step 2 – mechanism: It combines airway obstruction with reflex vagal cardiac inhibition; it mimics a heart attack, hence the name.

Why the other options are wrong:

- A, vagal inhibition alone: a mechanism, but here there is a physical obstruction.



- C, autoerotic asphyxia: a solitary sexual asphyxial death, unrelated to eating.
- D, burking: homicidal smothering plus chest compression.

Final Answer: Cafe coronary $\Rightarrow$

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

Q7.

Solution

Concept – autoerotic asphyxia: Scene findings decide the manner of an asphyxial death.

Step 1 – read the scene: A **locked room**, a soft ligature with a failed escape mechanism, a mirror, pornographic material and cross-dressing point to **accidental autoerotic (sexual) asphyxia**.

Step 2 – mechanism: Deliberate partial hypoxia is used to heighten sexual gratification; death follows when the release device fails.

Why the other options are wrong:

- B, homicidal strangulation: no second party and a self-arranged setup argue against it.
- C, suicidal hanging: there is no intent to die; the escape mechanism shows the opposite.
- D, cafe coronary: unrelated to eating.

Final Answer: Autoerotic (sexual) asphyxia $\Rightarrow$

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

Q8.

Solution

Concept – res ipsa loquitur: Latin for “the thing speaks for itself.”

Step 1 – apply it: A **mop left inside the abdomen** is an outcome that could not occur without negligence, so the doctrine of **res ipsa loquitur** applies.

Step 2 – effect: The plaintiff need not prove the exact act; the burden shifts to the doctor to explain.

Why the other options are wrong:

- A, contributory negligence: fault shared by the patient, not relevant here.



- B, vicarious liability: an employer's liability for an employee, a different concept.
- D, novus actus interveniens: a new intervening cause breaking the chain of causation.

Final Answer: Res ipsa loquitur ⇒

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

Q9.

Solution

Concept – vicarious liability: One party answers for the acts of another.

Step 1 – apply it: A hospital liable for its salaried doctor's negligence during employment illustrates **vicarious liability** (the “master answers” rule).

Step 2 – requirement: The employee must be acting in the course of employment for the employer to be liable.

Why the other options are wrong:

- A, res ipsa loquitur: about proof of negligence from the fact itself.
- C, contributory negligence: patient's own fault contributing to harm.
- D, therapeutic misadventure: unforeseen harm from correct treatment, not employer liability.

Final Answer: Vicarious liability ⇒

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

Q10.

Solution

Concept – contributory negligence: The patient's own carelessness can share the blame.

Step 1 – apply it: A patient who **does not take prescribed drugs and ignores follow-up advice** contributes to his own harm, giving the doctor the defence of **contributory negligence**.

Step 2 – effect: It reduces or removes the doctor's liability in proportion to the patient's fault.

Why the other options are wrong:



- A, res ipsa loquitur: helps the patient prove negligence, not a doctor's defence.
- B, vicarious liability: employer's responsibility for an employee.
- C, therapeutic misadventure: harm despite correct care, not the patient's fault.

Final Answer: Contributory negligence ⇒ D

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

Q11.

Solution

Concept – bacterial food poisoning: Incubation period and toxin type identify the organism.

Step 1 – match the clue: A very short 1 to 6 hour onset with dominant **vomiting** from a **preformed heat-stable enterotoxin** points to **Staphylococcus aureus**.

Step 2 – reasoning: Because the toxin is preformed in the food, symptoms appear rapidly and are not prevented by reheating.

Why the other options are wrong:

- B, Salmonella: longer incubation (12 to 48 hours) with fever and diarrhoea.
- C, Clostridium botulinum: neurological paralysis, not early vomiting.
- D, Vibrio: watery diarrhoea after a longer incubation.

Final Answer: Staphylococcus aureus ⇒ A

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

Q12.

Solution

Concept – botulinum toxin mechanism: The toxin acts at the neuromuscular junction to cause flaccid paralysis.

Step 1 – identify X: The site marked X is the **presynaptic nerve terminal**, where botulinum toxin **inhibits the release of acetylcholine**.

Step 2 – consequence: Without acetylcholine reaching the muscle, transmission fails and **descending flaccid paralysis** results, threatening the respiratory muscles.



Why the other options are wrong:

- A, receptor blockade on muscle: that is the action of curare, not botulinum.
- B, increased acetylcholine release: the opposite of what happens.
- D, cholinesterase inhibition: causes acetylcholine excess and is the mechanism of organophosphates.

Final Answer: Inhibits presynaptic acetylcholine release $\Rightarrow$ C

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

Q13.

Solution

Concept – organochlorine insecticides: Endrin belongs to the organochlorine group of insecticides.

Step 1 – name the mechanism: Organochlorines **interfere with axonal sodium and potassium flux and antagonise GABA**, producing central nervous system stimulation and convulsions.

Step 2 – clinical picture: The patient develops headache, tremors and sudden seizures after dermal or inhalational exposure.

Why the other options are wrong:

- A, cytochrome oxidase inhibition: the mechanism of cyanide.
- B, methaemoglobin formation: caused by nitrites and aniline dyes.
- C, cholinesterase inhibition: the mechanism of organophosphates and carbamates, not organochlorines.

Final Answer: CNS stimulation via cation flux and GABA interference $\Rightarrow$ D

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

Q14.

Solution

Concept – strychnine poisoning: Strychnine is a powerful spinal convulsant.

Step 1 – name the mechanism: Strychnine **antagonises the inhibitory neurotransmitter glycine** at the spinal cord (blocking Renshaw-cell inhibition of motor neurons).

Step 2 – consequence: Loss of inhibition causes violent symmetrical convulsions



and opisthotonus, while the patient stays **conscious** because the cortex is spared.

Why the other options are wrong:

- A, cholinesterase inhibition: mechanism of organophosphates, with muscarinic features.
- B, dopamine blockade: causes extrapyramidal reactions, not tonic convulsions.
- D, GABA enhancement: would sedate rather than convulse.

Final Answer: Glycine antagonism at the spinal cord ⇒ C

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

Q15.

Solution

Concept – nicotine poisoning: Nicotine acts biphasically on nicotinic receptors.

Step 1 – trace the fatal event: After initial stimulation, nicotine causes **persistent depolarising blockade** of the neuromuscular junction, paralysing the **respiratory muscles**.

Step 2 – consequence: Death results from **respiratory failure** due to paralysis of the diaphragm and intercostal muscles.

Why the other options are wrong:

- A, hyperkalaemic arrhythmia: not the usual mode of death in nicotine poisoning.
- C, hepatic failure: not a feature of acute nicotine toxicity.
- D, renal failure: not the primary lethal mechanism.

Final Answer: Respiratory muscle paralysis ⇒ B

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



Answer Key

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

