

INI CET Forensic Medicine

Sample Paper – 10

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.
- Attempt this practice paper in one timed sitting of about **14 minutes**, the pace the real computer-based test demands.

Thanatology

Q1. A drowning victim is recovered clutching weeds tightly in one hand, the grip having been present from the very moment of death. Which post-mortem change explains this and distinguishes it from ordinary rigor mortis?

- (A) Cadaveric spasm, appearing instantly and confined to muscles active at the moment of death
- (B) Primary flaccidity of muscle
- (C) Cold stiffening of the limb
- (D) Heat stiffening of the limb

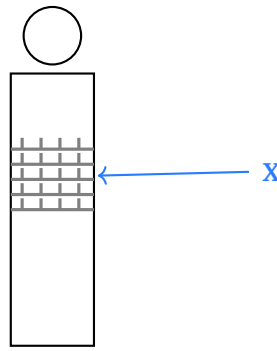


- Q2.** A body pulled from a house fire is rigid, with the limbs held in a flexed “pugilistic (boxer’s) attitude”. This stiffening is due to:
- (A) Rigor mortis developing early
 - (B) Cadaveric spasm of the flexor muscles
 - (C) Heat stiffening from coagulation of muscle proteins by heat
 - (D) Cold stiffening from freezing of the tissues
- Q3.** A body stored in a freezer becomes stiff because of freezing of the tissues and solidification of subcutaneous fat. On rewarming, this stiffness disappears and true rigor may then set in. This form of stiffening is:
- (A) Cadaveric spasm
 - (B) Rigor mortis
 - (C) Heat stiffening
 - (D) Cold stiffening

Mechanical Injuries

- Q4.** In a pedestrian struck by a moving car, the injury produced by the first contact of the vehicle (typically the bumper striking the leg) with the body is called the:
- (A) Primary impact injury
 - (B) Secondary impact injury
 - (C) Secondary injury
 - (D) Run-over injury
- Q5.** In the schematic of a run-over pedestrian, the parallel tyre-tread pattern imprinted across the skin of the trunk (marked X) is best classified as a:





- (A) Primary impact injury
- (B) Secondary impact injury
- (C) Patterned (imprint) abrasion reproducing the tyre tread
- (D) Laceration caused by the bumper edge

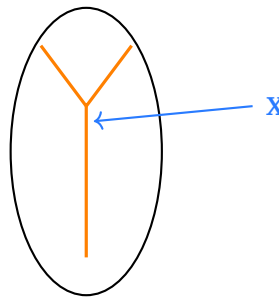
Asphyxial Deaths

- Q6.** An intoxicated man is found dead wedged head-down in a narrow gap between a bed and a wall, with no injuries or ligature. Death resulted because the body position mechanically prevented adequate respiration. This is:
- (A) Traumatic asphyxia
 - (B) Postural (positional) asphyxia
 - (C) Smothering
 - (D) Manual strangulation
- Q7.** A 2-month-old infant sleeping in the parents' bed is found dead in the morning after the mother, in deep sleep, rolled over on top of it. This accidental mechanical asphyxia of an infant is termed:
- (A) Choking
 - (B) Gagging
 - (C) Overlaying (overlying)
 - (D) Mugging

Forensic Identification and Medical Jurisprudence



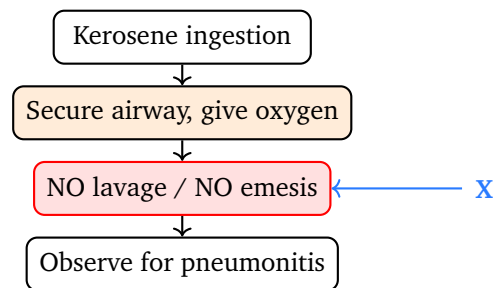
- Q8.** Which statement best distinguishes a medico-legal (forensic) autopsy from a clinical (pathological) autopsy?
- (A) It requires the written consent of the relatives before it can proceed
 - (B) It is ordered by a legal authority and needs no consent of the relatives
 - (C) It may be restricted to a single organ of interest
 - (D) Its main purpose is to audit the clinical diagnosis
- Q9.** In the autopsy diagram, the standard thoraco-abdominal skin incision marked X, running from each shoulder tip to the lower sternum and then straight down to the pubis, is the:



- (A) I-shaped (straight midline) incision
 - (B) T-shaped incision
 - (C) Y-shaped incision
 - (D) Elliptical incision
- Q10.** An autopsy in which no anatomical, toxicological, microbiological or histological cause of death is found even after a thorough and complete examination is called a:
- (A) Second autopsy
 - (B) Partial autopsy
 - (C) Obscure autopsy
 - (D) Negative autopsy



- Q11.** A toddler who swallowed kerosene is brought to the emergency. The management flow shown (marked **X**) deliberately omits gastric lavage and induced emesis. This step is avoided chiefly because kerosene:



- (A) Is rapidly absorbed and provokes a fatal cardiac arrhythmia
 - (B) Can be aspirated into the lungs, causing chemical (aspiration) pneumonitis
 - (C) Corrodes the oesophagus, producing strictures like a strong acid
 - (D) Precipitates as a solid mass within the stomach
- Q12.** A child with G6PD deficiency who has swallowed naphthalene mothballs develops dark urine and jaundice over the next day. The mechanism of this reaction is:
- (A) Methaemoglobinaemia alone, without red-cell destruction
 - (B) Direct hepatocellular toxicity
 - (C) Acute renal tubular necrosis
 - (D) Oxidative haemolysis of the red blood cells

Specific Poisons

- Q13.** A rodenticide-paste poisoning presents with a garlicky odour of the breath, luminous “smoking” vomitus in the dark, and later fulminant hepatic failure, running a classic three-stage course. The poison is:
- (A) Yellow phosphorus
 - (B) Zinc phosphide
 - (C) Thallium
 - (D) Barium carbonate



- Q14.** Diffuse loss of scalp hair (alopecia) together with painful peripheral neuropathy and transverse white Mees' lines on the nails, following chronic rodenticide or homicidal poisoning, is most characteristic of:
- (A) Thallium
 - (B) Lead
 - (C) Mercury
 - (D) Cadmium
- Q15.** The seeds of *Abrus precatorius* (rosary pea or "jequirity"), traditionally crushed into needle-like "sui" for cattle poisoning, contain a toxalbumin that inhibits ribosomal protein synthesis. This toxalbumin is:
- (A) Ricin
 - (B) Abrin
 - (C) Croton
 - (D) Robin



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

Concept – cadaveric spasm: A grip fixed from the instant of death is a special muscular change.

Step 1 – identify the change: **Cadaveric spasm** is an instantaneous stiffening of a group of voluntary muscles that were in active use at the moment of death.

Step 2 – distinguish from rigor mortis: It appears at once, with no preceding period of primary flaccidity, and cannot be reproduced after death; it is medico-legally valuable as it shows what the hand was doing when the person died.

Why the other options are wrong:

- B, primary flaccidity: the immediate limpness after death, the opposite of a firm grip.
- C, cold stiffening: caused by freezing, affecting the whole body, not a selective grip.
- D, heat stiffening: caused by heat, again generalised and unrelated to a purposeful grip.

Final Answer: Cadaveric spasm $\Rightarrow$ A

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

Q2.**Solution**

Concept – effect of heat on a body: Intense heat coagulates muscle protein and fixes the limbs.

Step 1 – name the change: The flexed “pugilistic attitude” of a burnt body is due to **heat stiffening**.

Step 2 – mechanism: Heat coagulates and shortens the muscles; because the flexors are bulkier than the extensors, the limbs are drawn into flexion, resembling a boxer’s guard. This is a post-mortem artefact and is not evidence that the person was alive in the fire.

Why the other options are wrong:

- A, rigor mortis: a chemical stiffening from ATP loss, unrelated to the flexed burnt posture.



- B, cadaveric spasm: an instant grip of active muscles, not a generalised flexion by heat.
- D, cold stiffening: caused by freezing, the opposite thermal condition.

Final Answer: Heat stiffening $\Rightarrow$

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

Q3.

Solution

Concept – effect of cold on a body: Freezing itself stiffens the tissues.

Step 1 – name the change: Stiffness from storage in a freezer is **cold stiffening**, due to freezing of the body fluids and solidification of subcutaneous fat.

Step 2 – key point: It disappears when the body is rewarmed, and only then can true rigor mortis begin, an important pitfall when estimating the time since death of a refrigerated body.

Why the other options are wrong:

- A, cadaveric spasm: an instant selective grip, not a cold artefact.
- B, rigor mortis: a chemical stiffening that here is delayed by the cold, not the cause of the initial stiffness.
- C, heat stiffening: caused by heat, the opposite condition.

Final Answer: Cold stiffening $\Rightarrow$

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

Q4.

Solution

Concept – sequence of vehicular injuries: Pedestrian injuries are named by the order in which they occur.

Step 1 – name the first injury: The injury from the vehicle's first contact with the body, usually the bumper striking the leg, is the **primary impact injury**.

Step 2 – its value: Its height above the heel helps estimate the vehicle type and whether it braked before impact.

Why the other options are wrong:

- B, secondary impact injury: from a further part of the vehicle (bonnet or



windscreen) as the victim is thrown up.

- C, secondary injury: from the body striking the ground after being flung off.
- D, run-over injury: from a wheel passing over the body, a later and separate event.

Final Answer: Primary impact injury ⇒

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

Q5.

Solution

Concept – patterned abrasions: Some abrasions carry the imprint of the object that made them.

Step 1 – identify X: The parallel tread pattern printed on the skin when a tyre rolls over the body is a **patterned (imprint) abrasion**, a type of pressure abrasion that faithfully reproduces the tread.

Step 2 – medico-legal value: The imprint can be matched to a specific tyre and confirms that a run-over occurred, and can indicate the direction of travel.

Why the other options are wrong:

- A, primary impact injury: the first bumper contact, not a tyre imprint.
- B, secondary impact injury: from the bonnet or windscreen, not a wheel.
- D, laceration: a split of the tissues, whereas a tyre-mark is a superficial patterned abrasion.

Final Answer: Patterned (imprint) abrasion ⇒

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

Q6.

Solution

Concept – postural asphyxia: Body position alone can obstruct breathing.

Step 1 – name the mechanism: Death of a helpless (often intoxicated) person wedged head-down so that the chest cannot expand is **postural (positional) asphyxia**.

Step 2 – typical picture: There is no external injury or ligature; the position itself mechanically prevents adequate respiration and venous return.



Why the other options are wrong:

- A, traumatic asphyxia: needs an external crushing force on the chest, absent here.
- C, smothering: closure of the mouth and nose by a hand or object.
- D, manual strangulation: pressure on the neck by hands, which would leave neck marks.

Final Answer: Postural (positional) asphyxia ⇒ B

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

Q7.

Solution

Concept – accidental infant asphyxia: A sleeping adult can smother a co-sleeping infant.

Step 1 – name it: When a parent in deep sleep rolls onto an infant sharing the bed and occludes its airway, the accidental death is called **overlaying**.

Step 2 – context: It is a form of smothering and is a recognised hazard of bed-sharing, often after parental fatigue or intoxication; it must be distinguished from sudden infant death syndrome.

Why the other options are wrong:

- A, choking: obstruction inside the air passages by a foreign body.
- B, gagging: closure of the mouth and nose by a cloth or gag.
- D, mugging: strangulation by pressure from the forearm around the neck.

Final Answer: Overlaying ⇒ C

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

Q8.

Solution

Concept – types of autopsy: Clinical and medico-legal autopsies differ in authority and consent.

Step 1 – key distinction: A medico-legal autopsy is **ordered by a legal authority** (police or magistrate) to establish the cause and manner of death, and **no consent of the relatives is required**.



Step 2 – contrast: A clinical autopsy is done for medical audit and teaching and does need the relatives' consent.

Why the other options are wrong:

- A, needs consent: true of the clinical autopsy, not the medico-legal one.
- C, single organ: a medico-legal autopsy must be complete and examine all three body cavities.
- D, audit clinical diagnosis: the aim of the clinical, not the forensic, autopsy.

Final Answer: Ordered by law, no consent needed ⇒ B

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

Q9.

Solution

Concept – autopsy incisions: The primary skin incision has standard shapes.

Step 1 – identify X: The incision running from each shoulder to the lower sternum and then straight down to the pubis forms a **Y-shaped incision**, the commonly used pattern.

Step 2 – purpose: The two upper limbs over the chest and the single lower mid-line limb give wide access to the neck, thorax and abdomen while keeping the incision hidden by clothing.

Why the other options are wrong:

- A, I-shaped: a single straight chin-to-pubis line, without the shoulder limbs.
- B, T-shaped: a horizontal shoulder-to-shoulder line meeting a vertical one.
- D, elliptical: an oval incision used to excise a lesion, not for the routine autopsy.

Final Answer: Y-shaped incision ⇒ C

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



Q10.

Solution

Concept – outcomes of an autopsy: Some autopsies fail to reveal a cause of death.

Step 1 – name it: When a complete autopsy, including toxicology, microbiology and histology, reveals no cause of death, it is a **negative autopsy**.

Step 2 – causes: Common reasons include inadequate history, a missed vaginal/reflex or biochemical death, or an unretrieved toxin; it differs from an obscure autopsy where only vague or non-specific findings are present.

Why the other options are wrong:

- A, second autopsy: a re-examination, usually after exhumation, not a description of the findings.
- B, partial autopsy: one limited to certain organs, against the medico-legal rule.
- C, obscure autopsy: has some findings, but they are too vague to explain death.

Final Answer: Negative autopsy $\Rightarrow$ D

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

Q11.

Solution

Concept – petroleum distillate poisoning: The danger of kerosene lies in the lungs, not the stomach.

Step 1 – read the flow: The management box marked X omits lavage and emesis because kerosene, a low-viscosity volatile hydrocarbon, **is easily aspirated into the lungs and causes chemical (aspiration) pneumonitis**.

Step 2 – correct approach: Treatment is supportive: protect the airway, give oxygen, and watch for pneumonitis; lavage would risk further aspiration.

Why the other options are wrong:

- A, arrhythmia: a feature of halogenated hydrocarbon sniffing, not the reason lavage is withheld here.
- C, corrosion: kerosene is an irritant, not a corrosive acid causing strictures.
- D, precipitation: it does not form a solid mass in the stomach.



Final Answer: Risk of aspiration pneumonitis $\Rightarrow$ **B**

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

Q12.

Solution

Concept – naphthalene toxicity: Naphthalene is an oxidant stress to red cells.

Step 1 – state the mechanism: In a G6PD-deficient child, naphthalene metabolites impose oxidative stress that the cell cannot neutralise, causing **oxidative haemolysis of the red blood cells**.

Step 2 – clinical picture: Haemolysis releases haemoglobin, producing dark urine, jaundice and anaemia; methaemoglobinaemia may coexist but the dark urine and jaundice reflect red-cell destruction.

Why the other options are wrong:

- A, methaemoglobinaemia alone: does not explain the haemoglobinuria and jaundice.
- B, hepatotoxicity: not the primary mechanism of naphthalene injury.
- C, renal tubular necrosis: a possible secondary effect of pigment load, not the primary cause.

Final Answer: Oxidative haemolysis $\Rightarrow$ **D**

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

Q13.

Solution

Concept – yellow phosphorus poisoning: A rodenticide with a distinctive, luminous presentation.

Step 1 – identify the poison: Garlicky breath, luminous “smoking” vomit and stools, and a three-stage course ending in hepatic failure point to **yellow phosphorus**.

Step 2 – the stages: Stage 1, gastrointestinal irritation; Stage 2, a deceptive symptom-free interval; Stage 3, hepatic and renal failure with jaundice; the “smell of garlic and luminous vomitus” is classic.

Why the other options are wrong:



- B, zinc phosphide: liberates phosphine gas with a fishy/garlicky smell but no luminous smoking vomitus.
- C, thallium: causes alopecia and neuropathy, not luminous vomit.
- D, barium carbonate: causes profound hypokalaemia and paralysis, a different picture.

Final Answer: Yellow phosphorus $\Rightarrow$

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

Q14.

Solution

Concept – thallium poisoning: Hair loss with neuropathy is the signature.

Step 1 – identify the poison: Diffuse alopecia together with painful peripheral neuropathy and Mees' lines is the hallmark of **thallium**, once used as a rodenticide and a notorious homicidal poison.

Step 2 – confirmation and treatment: Diagnosis is by raised urinary thallium; Prussian blue is the specific antidote that binds thallium in the gut.

Why the other options are wrong:

- B, lead: causes a wrist drop, a gum line and anaemia, but not diffuse alopecia.
- C, mercury: causes tremor, gingivitis and erethism, not the alopecia-neuropathy pattern.
- D, cadmium: causes itai-itai bone disease and renal damage, not alopecia.

Final Answer: Thallium $\Rightarrow$

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

Q15.

Solution

Concept – toxalbumins of plant seeds: Each toxalbumin comes from a specific plant.

Step 1 – match the plant: *Abrus precatorius* seeds contain **abrin**, a toxalbumin that inhibits ribosomal protein synthesis and causes cell death.

Step 2 – forensic note: The seeds are made into sharp “sui” spikes to poison cattle; abrin resembles ricin in action but is the abrus-specific toxin.



Why the other options are wrong:

- A, ricin: the toxalbumin of the castor plant (*Ricinus communis*), not abrus.
- C, crotin: found in *Croton tiglium* seeds.
- D, robin: found in *Robinia* (black locust), a different plant.

Final Answer: Abrin ⇒ B

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



Answer Key

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

