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# **ONE Touch** Forensic Medicine & Toxicology

For NEET/NEXT/FMGE/INI-CET

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- Entire theory covered in just 120 pages in Flowcharts, Tables and One-Liners format
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## **J Magendran**

## **ONE Touch** Forensic Medicine & Toxicology

For NEET/NEXT/FMGE/INI-CET

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## Preface

#### 'ज्ञानं परमं बलम्' (Gyaanam Paramam Balam)

'Knowledge is the Supreme Power'

Dear Students,

This motto has been the driving force behind my thirst for knowledge. I have been immensely blessed to be in the teaching industry which provides me an opportunity to stay in touch with students on regular basis, and this close association always inspires me to learn more and more each day.

I want to begin by expressing my deep gratitude to all the students. Your questions and suggestions have been invaluable in shaping my teaching approach and my own growth as an educator.

The motivation behind this revision book arises from your consistent requests for a concise resource to swiftly review or fully grasp the concepts of Forensic Medicine. I have spent many months contemplating this idea, and I am thrilled to present you with a condensed version of Forensic Medicine and Toxicology theory that I believe will greatly aid you in your pursuit of excellence. It's not a shortcut but the best tool for fast revision.

What can you expect from this book?

- Concise Theory (Just 120 pages): I have condensed the entire content merely in 120 pages by employing a flowchart approach and optimizing page space usage.
- Important Images: I have included essential clinical images throughout the book for ease of understanding the concept.
- Mnemonics: Text is supplemented with many mnemonics for easy recall.
- **Previous Years Questions:** To aid in quick exam revision, I have included the Previous Years Questions (PYQs) from the last 3 years (NEET PG/FMGE/INI-CET) at the end of the book (up to July 2023).

The students who have already covered Forensic Medicine from any other sources, this concise resource can serve as a rapid revision tool before their exams. This book will prove to be immensely helpful for such students. Memorizing this content alone will suffice for Forensic Medicine. Throughout the book, the content is presented in the form of Flowcharts, Figures, Tables and various boxes for Last-minute revision.

I have put forth my utmost efforts to make this book concise, productive, and error-free. However, if you happen to spot any mistakes, please bring them to my attention by emailing me at drmagi83@yahoo.co.in.

If you wish to connect with me directly, you can find me on Instagram using my handle-drmagendranjfmt

I extend my best wishes to all of you. Sending you lots of love and blessings!

J Magendran



Preface	 iii

#### THEORY

1.	Forensic Thanatology	3
2.	Human Identification	13
3.	Asphyxial Deaths	29
4.	Forensic Traumatology	43
5.	Forensic Toxicology	73
6.	Sexual Jurisprudence	93
7.	Legal Procedure and Medical Jurisprudence	103
8.	Forensic Psychiatry and Blood Stains	110
9.	Legal Sections of Importance	.113

#### LATEST QUESTION PAPERS

NEET PG 2023	119
NEET PG 2022	
NEET PG 2021	
INI-CET May 2023	123
INI-CET November 2022	124
INI-CET May 2022	
INI-CET November 2021	
INI-CET July 2021	
FMGE July 2023	
FMGE January 2023	130
FMGE May 2022	131
FMGE December 2021	132
FMGE July 2021	133



# THEORY

#### **1. FORENSIC THANATOLOGY**

#### THANATOLOGY

The study of death $^{Q}$  in all its aspects.

#### TAPHONOMY

The study of the decomposition processes of human remains.



#### APPARENT DEATH/SUSPENDED ANIMATION

(The person appears to be dead but he/she is not actually dead) The signs of life are reduced to very minimum that it cannot be detected by routine clinical methods.

#### Conditions Causing Suspended Animation

#### Mnemonic:

#### Suspended Animation IN NEW HD TV

- In Insanity/iatrogenic as in cardiopulmonary surgeries and anesthesia
- $N Newborn^{Q}$  (most common)
- $E Electrocution^{Q}$
- W Wasting diseases like cholera
- H Heat stroke/Hypothermia<sup>Q</sup>/Hanging
- D Drowning<sup>Q</sup>/Drugs like barbiturates
- T Typhoid
- V Voluntary (Yoga practitioners<sup>Q</sup>) (only voluntary cause)

#### Medicolegal Importance

If death is declared and certified prematurely, in this case the doctor can be punished for premature declaration of death.

#### POSTMORTEM CHANGES



#### CHANGES IN THE EYES

- Corneal opacity (in 1 hour)
- Flaccidity of eyeball (Within half/2 hours after death, I.O.P decreases from 20 mm Hg to 0 mm Hg)
- **Pupils** (initially dilated, later constricted due to rigor mortis)

#### Retinal vessels:

Kevorkian sign<sup>°</sup>/cattle trucking/ railway rucking sign<sup>°</sup>

**Appearance:** Fragmentation or **segmentation of blood columns**<sup>a</sup> in retinal vessels

Seen by **ophthalmoscope**<sup>°</sup>

TSD: Appears within seconds to minutes<sup>°</sup> after death, persists till 1 hour. Earliest sign after death in eye<sup>°</sup> Sclera: Tache noire sclerotica If eye lids open

> Drying/desiccation, deposition of dust<sup>a</sup>

> > 3–6 hours after death

2 triangular opacities on both sides of iris (base on the limbus, apex at the outer canthus) first yellow<sup>2</sup>, then brown and finally black **Vitreous humor:** Best medium for time since death<sup>°</sup>

For TSD, potassium level from vitreous is the best indicator<sup>a</sup>. (up to 4–5 days after death)





Apply pressure  $\rightarrow$  No Blanching (fixed).

## Distribution of PM Staining—Depends on the Position of the Body (Dependent Parts)

Supine	Appears in the neck, and the entire back (Exception: Areas directly pressed on the ground)
Prone	It is seen in front
Suspended vertically (as in hanging)	Legs, external genitalia, lower parts of forearms and hands ( <b>Glove and stocking</b> ) <sup>9</sup>
Submersion in water (drowning)	Face, upper part of the chest, hands, lower arms and feet, as they are the dependent parts
<ul> <li>Running water (drowning in the river) (as the position of the body constantly changes)</li> <li>Severe anemia</li> <li>Severe hemorrhage</li> </ul>	No lividityª

#### Color of Livor Mortis

Conditions	Color of lividity
Normal	Blue/purplish
Carbon monoxide burns	Cherry red <sup>Q</sup>
Cyanide	Bright red <sup>a/</sup> Brick red <sup>a</sup>

Conditions	Color of lividity
Hypothermia/refrigeration	Bright pink <sup>q</sup>
NaCl/nitrite/nitrate/ aniline/potassium chlorate/ phosphorus/bromates	Chocolate brown <sup>q</sup>
Aniline	Deep blue
Septic abortion	Bronze
Hydrogen sulphide	Bluish green <sup>Q</sup>

#### Areas of Pallor in Lividity



#### "Contact pallor/Pressure pallor"

- Body parts in tight contact with the ground do not show staining.
- Example: Occipital area, shoulder blades, buttocks, posterior aspects of thighs, calves and heels.

#### Medicolegal Importance

- Helps in estimating the **time of death**.
- Indicates the posture of the body at the time of fixation and death.
- Color of lividity may indicate the cause of death poisoning.

#### RIGOR MORTIS—POSTMORTEM STIFFENING OF MUSCLES

#### Synonyms

- Cadaveric rigidity
- Postmortem rigor
- Postmortem rigidity
- Postmortem stiffening

Contd...

- Rigor mortis is state of the muscles becoming stiff or rigid in a dead body.
- Mechanism: Due to depletion of ATP stores after death.
- Rigor mortis begins in 1–2 hours after the period of primary relaxation.

**Rigor mortis is generalized**  $\rightarrow$  seen in both voluntary and involuntary muscles.

Rigor mortis begins in 1–2 hours, progresses in 3–4 hours and complete in 6–12 hours.

First seen in:	First site of rigor	First external
Involuntary	mortis: Myocardium	site of rigor
muscles	(1 hour)	mortis: Eyelid

## Order of Appearance of Rigor Mortis: Nysten's Rule (1811)

#### Sequence of Rigor Appearance

- Myocardium, eyelids, neck and lower jaw, then face, chest muscles, upper limb, abdomen, lower limb and lastly fingers and toes.
- Rigor mortis disappears in the same order<sup>Q</sup> of appearance in which it develops.

#### Rule of 12

- It takes roughly 12 hours to appear.
- Persists for another 12 hours.
- Disappears in another 12 hours.



#### CONDITIONS SIMULATING (LOOKING LIKE) RIGOR MORTIS

<b>Heat stiffening</b> (burns)	<ul> <li>Heat exposure to body &gt;65°C, stiffness is produced.</li> <li>Mechanism: Muscle protein coagulation<sup>Q</sup> due to heat.</li> <li>Attitude</li> <li>The legs are flexed at the hips and knees, the arms are flexed at the elbows and held out in front of the body and the fingers are hooked like claws.</li> </ul>	•	Boxer's attitude Pugilistic attitude Defense attitude Fencing attitude
Cold stiffening	<ul> <li>Exposure to freezing temperatures, the tissues become frozen and stiff, simulating rigor.</li> <li>Mechanism: Hardening of the subcutaneous fatty tissue<sup>Q</sup>.</li> </ul>		
Gas rigidity	Accumulation of decomposing gas in putrefying body.		
<ul> <li>Cadaveric spasm (instantaneous rigor)</li> <li>Firearms in victim's hands in suicides.</li> <li>Weeds in the hands of victims in drowning.</li> </ul>	<ul> <li>The group of voluntary muscles<sup>Q</sup> goes into a sudden state of stiffening, instead of passing to primary flaccidity after death.</li> <li>Salient features of cadaveric spasm:</li> <li>Seen immediately<sup>Q</sup> after death.</li> <li>No primary relaxation phase<sup>Q</sup></li> <li>Involves only a group of voluntary muscles<sup>Q</sup> (which were in contraction before death).</li> <li>Exclusively Antemortem<sup>Q</sup> in nature and it cannot be produced artificially<sup>Q</sup>.</li> <li>Great force<sup>Q</sup> is required to overcome the stiffness.</li> </ul>	•	The attitude/last act of the person at the time of death is preserved <sup>Q</sup> . Mechanism: Unknown <sup>Q</sup> , neurogenic



#### DECOMPOSITION-LATE CHANGES

Autolysis: (auto: self; lysis: breakdown) without bacterial involvement (by lysosomal enzymes) Putrefaction with bacterial involvement. Among these bacteria, clostridium is the chief destructive agent<sup>Q</sup> as it produces 'LECITHINASE<sup>Q</sup>' enzyme.

#### Stage of Putrefaction

#### Putrefaction involves three stages:

- 1. Color changes
- 2. Production of gases
- 3. Colliquative liquefaction of tissues (5–10 days after death  $^{\rm Q})$

#### 1. Color Change

- 1<sup>st</sup> overall site: Aortic intima—reddish/brownish discoloration.
- 1<sup>st</sup> external site: Right iliac fossa—greenish discoloration.
- Time since death: Summer—12–18 hours and winter—1–2 days.



#### Marbling (Marbled Patterns on the Skin<sup>q</sup>)

- Areas noted: Shoulder, roots of the limbs, thighs, sides of abdomen, chest and neck
- Time: 36–72 hours<sup>q</sup>.



#### Mechanism

- In putrefaction, when bacteria spread through the blood vessels, hydrogen sulfide gas is formed.
- It results in the conversion of hemoglobin to  ${\color{black}{sulphmethemoglobin}}^{\mathrm{q}}$
- It caused greenish staining of inner walls of the vessels<sup>q</sup>, a 'marbled' ('road map')<sup>q</sup> appearance of the skin.

#### 2. Effects of Gas Formation

- Gases formed: Ammonia, carbon dioxide, hydrogen sulfide, phosphorated hydrogen and methane.
- **Principal gas:** Hydrogen sulfide<sup>Q</sup>

Effects	Timeline
<b>Postmortem Skin Blisters</b> Content: gas Base: pale	18–24 hours <sup>q</sup>
Abdomen gets distended due to the accumulation of gases in the intestines <b>(gas stiffening</b> ° <b>)</b>	18–36 hours

#### **REGIONAL INJURIES**

#### Types of Skull Fractures

#### Fractures of Skull Vault

Type of fracture	Causative force	Description
Fissure Fracture Blows with an agent having a relatively broad striking surface <sup>Q</sup>		<ul> <li>Most common fracture<sup>Q</sup>.</li> <li>Thin linear cracks without any displacement of the fragments.</li> <li>Difficult to detect in X-ray, and can only be detected at autopsy.</li> </ul>
Depressed fracture Heavy weapon with a small striking surface <sup>q</sup> Like hammer		<ul> <li>Fractured bone is depressed inward into the cranial cavity.</li> <li>The fractured segment resembles the pattern of the striking surface of the weapon<sup>Q</sup>.</li> <li>It is also called 'fracture ala signature' (signature fracture).</li> </ul>
Comminuted fracture		<ul> <li>Two or more fracture lines intersect and divide the bone into three or more fragments.<sup>Q</sup></li> <li>When there is no displacement of fragments, it resembles a spider's web or mosaic.</li> </ul>
Pond fracture (indented fracture) <b>Obstetric forceps</b> <sup>q</sup>		<ul> <li>A simple dent in the skull without a fracture line.</li> <li>Dura and brain are not damaged.</li> <li>Occurring only in the skull of infants and children<sup>Q</sup> due to pliability.</li> <li>Also known as ping-pong fracture.</li> </ul>
Diastatic/sutural fracture		<ul> <li>Separation of skull sutures<sup>q</sup>.</li> <li>Common in sagittal suture.</li> <li>Occurring in the skull of children and young adults.</li> </ul>
Gutter fracture Oblique bullet wounds <sup>q</sup>	A A A A A A A A A A A A A A A A A A A	When a part of the thickness of the skull bone is removed so as to form a gutter/channel/trench.

#### Skull Base Fractures



#### Coup and Contrecoup Injury

- Coup injury is one which occurs immediately beneath the area of impact.
- Contrecoup injury means that the brain injury opposite to the site of impact.
- Seen when head is free and mobile.
- It is caused when the moving head is suddenly decelerated by hitting a firm surface, e.g. striking of the head on the ground during a fall.
- When a person falls with his occiput hitting the ground, he may sustain injury at the occipital lobes (coup injury) and a more prominent injury to the frontal lobes (contrecoup injury).

#### Possibilities

Соир	Contrecoup
Mild/nil injury	Severe injury.
Occipital fall	Frontal lobe contusion (m/c).
Frontal impact	No occipital injury as inner surface of occipital bone is smooth.
Temporal lobe (one side)	<ul> <li>Opposite temporal lobe.</li> <li>Contralateral surface of ipsilateral lobe (opposite surface of same lobe).</li> </ul>

#### TESTS FOR BLOOD STAINS

To know the origin: human or not?	Presumptive tests Tests based on H <sub>2</sub> O <sub>2</sub>	Confirmatory tests
Serological tests <sup>Q</sup> Precipitin test	<ul> <li>Benzidine test: Blue indicates positivity.</li> <li>Kastle-Meyer test or Phenolphthalein test: Pink indicates positivity</li> </ul>	<ul> <li>Spectroscopy<sup>Q</sup> Most reliable test<sup>Q</sup> for detecting blood in recent and old stains</li> <li>Microchemical tests</li> <li>Takayama Haemochromogen Crystal Test: Pink feathery crystals of haemochromogen.</li> <li>Teichmann' Hemin Crystal Test: Brown crystals of hemin chloride</li> </ul>

#### 9. LEGAL SECTIONS OF IMPORTANCE

#### INDIAN PENAL CODE (IPC) 1860

The various legal sections have been incorporated in the relevant sections of the chapters. The additional sections are discussed here.

Sec. 44 IPC Injury definition

#### Criminal Responsibility

Sec. 82 IPC <sup>Q</sup>	Criminal responsibility of person <7 years = Not liable	
Sec. 83 IPC <sup>Q</sup>	Criminal responsibility of person 7–12 years = Liability depends on the mental maturity	
Sec. 84 IPC <sup>Q</sup>	Criminal responsibility of insane person = Not liable	
Sec. 85 IPC	Criminal responsibility of involuntary drunkenness = Not liable	
	(intoxicating substance is given without the knowledge of the person)	
Sec. 86 IPC	Criminal responsibility of voluntary drunkenness = Liable	
	(intoxicating substance is taken with intent)	

#### Treatment of Rape Victim

Sec. 166 B IPC	Punishment for <b>not treating a rape victim</b> in government or private hospital is punishable—1 year imprisonment
Sec. 228 A IPC	Disclosing the identity of rape victim – 2 years

#### Issuing False Medical Certificates

#### Sections Related to Preservation of Evidences and Police Intimation

Sec. 201 IPC <sup>Q</sup>	Causing disappearance/destruction of evidences (up to 10 years)	
	Suspected articles of poison to be preserved. (noncompliance—Sec. 201 IPC)	
	Embalming in poisoning case before autopsy	

#### Transmission of Fatal Infections

Sec. 269 IPC <sup>Q</sup>	Negligent act likely to spread disease dangerous to life—Punishment
Sec. 270 IPC	Willful act likely to spread disease dangerous to life—Punishment

#### Offences on Human Body

Definition of culpable homicide not amounting to murder
Definition of murder (culpable homicide amounting to murder)
Punishment for murder—Death or Imprisonment for life
Culpable homicide not amounting to murder. Imprisonment for life or 10 years and also fine.
Death caused by rash and negligent act—2 years.
Dowry death—Death of a female within 7 years of marriage.
Abetment of suicide—10 years, also fine.
Attempt to murder—10 years.
Attempt to commit culpable homicide—Up to 10 years.
Definition of Hurt—Bodily pain, disease or infirmity
Grievous Hurt—Definition
Punishment for voluntarily causing hurt $-1$ year, with fine.
Voluntarily causing hurt with dangerous weapon—3 years also fine.
Voluntarily causing grievous hurt—7 years, also fine.
Voluntarily causing grievous hurt by dangerous weapon $-10$ years, also fine.
Punishment for acid throwing (vitriolage)—Life imprisonment
Attempt to acid throwing—5 years

#### Causing Harm on Provocation or Negligent Act

Sec. 337 IPC	Causing hurt by doing rash or negligent act—6 months imprisonment
Sec. 338 IPC	Causing grievous hurt by doing rash or negligent $act-2$ years imprisonment
Sec. 351 IPC	Assault definition
Sec. 352 IPC	Punishment for assault

#### Offences Against Woman

Sec. 354 A IPC	Punishment for sexual harassment (1–3 years)
Sec. 354 B IPC	Use of criminal force on woman to disrobe (3–7 years)
Sec. 354 C IPC <sup>Q</sup>	Voyeurism
Sec. 354 D IPC <sup>Q</sup>	Stalking:
	(1 <sup>st</sup> offence: Cognizable and Bailable; 2 <sup>nd</sup> offence: Cognizable and Nonbailable)



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- → INI-CET JULY 2021
- → FMGE JULY 2023
- → FMGE JANUARY 2023
- → FMGE MAY 2022
- → FMGE DECEMBER 2021
- → FMGE JULY 2021

	NEET PG 2023	6.	A child has been brought by the police to the dept. of Forensic Medicine. Examination
1.	<ul> <li>'En masse' dissection technique of autopsy where the organs removed from tongue to prostate refers to:</li> <li>a. Ghon's technique</li> <li>b. Letulle's technique</li> <li>c. Virchow's technique</li> <li>d. Rokitansky's technique</li> </ul>		revealed reddening around the anus with tenderness during examination. Laboratory examination of anal swab by using picric acid reagent showed yellow needle shaped crystals under microscope. The test conducted is: a. Teichmann's test b. Takayama test c. Florence test d. Barberio's test
	Ans h letulle's technique		Ans. d. Barberio's test
2.	The technique of autopsy used in cases of HIV infected dead body is: a. Ghon's b. Letulle's c. Virchow's d. Rokitansky's	7.	A playing child, plucked the fruit from a plant and consumed it. The child was brought to hospital with painful swallowing, photophobia, inability to pass urine and hyperthermia. The poison and the antidote in this case are: a. Datura and physostigmine b. Datura and pralidoxime c. Yellow oleander and physostigmine d. Yellow oleander and pralidoxime
	Ars. a. Nokicarsky's		
3.	A laborer while working under hot sun collapsed with loss of consciousness and brought to the emergency department. On examination, his body temperature was found to be 106°F. The least likely finding is: a. Hypotension b. Tachycardia	8.	Ans. a. Datura and physostigmine After consuming some seed, a 45-year-old man presented to the emergency room with generalized muscular spasm and backward arching. The probable seed she had consumed is/are: a. Datura seeds
	c. Hot skin		b. Strychnos nux vomica
	d. Sweating		c. Abrus precatorius
	Ans. d. Sweating		d. Ricinus communis
4.	Section 314 of IPC deals with:		Ans. b. Strychnos nux vomica
	<ul> <li>a. Causing miscarriage with the consent of the mother</li> <li>b. Causing miscarriage without the consent of the mother</li> <li>c. Causing death of the mother by miscarriage</li> <li>d. Causing death of quick unborn child while trying to kill mother</li> </ul>	9.	A poor farmer with history of successive crop failure develops progressive spastic paraparesis, upper motor neuron signs, and unstable gait. The toxin responsible is: a. Beta-N-oxalyl amino-L-alanine (BOAA) b. Aflatoxin c. Strychnine d. Ergotoxine
	Ans. c. Causing death of the mother by miscarriage		And a Rate M evalul amine L alaring (ROAA)
5.	A dead body is brought to the mortuary. On external examination, rectal temperature was found to be 39°C. The probable cause could be: a. Intraabdominal hemorrhage b. Septicemia c. Corrosive poisoning d. Cyanide poisoning	10.	The hyperthermia associated with the treatment of organophosphorus compounds poisoning with atropine and pralidoxime is due to: a. OPC poison b. Atropine toxicity c. Oximes toxicity d. Aspiration pneumonia

Ans. b. Atropine toxicity

- Ammoniacal a.
- Foul C.
- d. Rancid

b. Odorless

Ans. b. Odorless

#### 128. Identify the postmortem finding:



- Left lung missing a.
- Fat necrosis Ь.
- Cardiac tamponade С.
- Pulmonary embolism d.

#### Ans. c. Cardiac tamponade

129. Identify the blood test shown in the image below:



- Barberio's test b. Florence test
- d. Teichmann's test Takayama's test C.

Ans. d. Teichmann's test

a.

- 130. A patient who took an unknown poison brought to the hospital. On examination, there was excessive sweating, lacrimation, bradycardia. Blood pressure was 80/60 mm Hg. Which of the following antidote should be given?
  - Diazepam b. Atropine a.
  - d. Naloxone Oximes C

Ans. b. Atropine

#### 131. Lucid interval is most commonly seen in:

- a. Subdural hemorrhage
- b. Extradural hemorrhage
- c. Subarachnoid hemorrhage
- d. Intracranial hemorrhage
- Ans. b. Extradural hemorrhage

#### 132. Battle sign is seen in:

- a. Fracture of anterior cranial fossa
- b. Fracture of middle cranial fossa
- Ring fracture с.
- Fracture of posterior cranial fossa d.

Ans. b. Fracture of middle cranial fossa

- 133. A couple did not want a girl child and aborted by using an abnormal method. What could be the method used for criminal abortion?
  - a. Vacuum aspiration
  - Prostaglandins Ь.
  - Dilatation and curettage с.
  - Abortion stick d.
  - Ans. d. Abortion stick

#### FMGE JULY 2021

#### 134. Gutter fracture of skull is associated with:

- Sharp object a.
- Blunt object Ь.
- С. Fall from height
- d. Bullet

#### Ans. d. Bullet

- 135. Cherry red colored PM lividity is associated with poisoning by:
  - Hydrogen sulfide а.
  - Hydrocyanic acid Ь.
  - Carbon monoxide С.
  - d. Nitrites

Ans. c. Carbon monoxide

136. In Barberio's test, yellow needle-shaped crystals are seen under microscope. This is done to detect:

а.	Saliva	Ь.	Semen
с.	Blood	d.	CSF

Ans. b. Semen

- 137. A 42-year-old patient was brought to the casualty. At the time of the presentation, he was unconscious. He was presented because of unknown poisoning. On examination, it was seen that there were some needle track ulcers on the upper limb. He had increased blood pressure and heart rate. Which of the following poisoning can be expected?
  - a. Heroin b. Cocaine c. LSD d. Cannabis

#### Ans. b. Cocaine

- 138. A person met with an accident and he was taken by the local people to the hospital. He was not accompanied by any of his relatives or friends. As the condition of the patient was bad, the doctors have to suggest him emergency surgery. According to ethics, What should be done?
  - a. Doctor can do the surgery in the case of emergency
  - b. Has to wait for getting consent from his relatives
  - c. Has to wait for the consent of the hospital administrators
  - d. Has to get consent from the police station

Ans. a. Doctor can do the surgery in the case of emergency

- 139. A farmer was brought to the casualty with pinpoint pupil, increased secretions and garlicky odor from the breath. The ideal antidote for poisoning is:
  - a. Oximes b. Atropine
  - c. Physostigmine d. N-acetyl cysteine

Ans. b. Atropine

- 140. Judicial hanging is the method of execution of a condemned criminal in our country. The cause of death in such cases would be:
  - a. Vagal inhibition
  - b. Fracture dislocation of cervical vertebrae
  - c. Cerebral hypoxia
  - d. Asphyxia

Ans. b. Fracture dislocation of cervical vertebrae

- 141. A 35-year-old person comes to the casualty with a history of consumption of some unknown seeds. On examination, there was dilated pupil, dry mouth and decreased secretions. The suspected poisoning is by:
  - a. Cocaine b. Cannabis
    - c. Heroin d. Datura

Ans. d. Datura

#### 142. First tooth to appear is:

- a. Lower central incisor
- b. Upper central incisor
- c. First molar
- d. None of the above

Ans. a. Lower central incisor

143. A person who has committed a crime has been brought before the court of law by the police. The court may direct the police to take him to the Juvenile court, if his age is:

а.	17 years	b. 19 years
С.	20 years	d. None of these

#### Ans. a. 17 years

- 144. A person died due to chronic starvation. The true finding is:
  - a. Expanded lungs
  - b. Enlarged heart
  - c. Enlarged stomach
  - d. Distended gallbladder

Ans. d. Distended gallbladder

- 145. A child consumes iron tablets used by its mother. The antidote is:
  - a. BAL b. EDTA
  - c. Deferoxamine d. Trientine

Ans. c. Deferoxamine

146. Partial hanging may resemble strangulation by:

- a. Knot mark
- b. Situation below the thyroid cartilage
- c. Dribbling of saliva
- d. Transverse ligature mark

Ans. d. Transverse ligature mark

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#### **About the Author**

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