

DO NOT OPEN THIS TEST BOOKLET UNTIL YOU ARE ASKED TO DO SO

**25-0002-AD**

## TEST BOOKLET

Time Allowed: 3:00 hrs

MAIN PAPER

Maximum Marks: 120

FORENSIC ANALYST

### INSTRUCTIONS TO CANDIDATES

*Read the instructions carefully before answering the questions: -*

1. This Test Booklet consists of 12 (twelve) pages and has 72 (seventy two ) items (questions).
2. IMMEDIATELY AFTER THE COMMENCEMENT OF THE EXAMINATION, YOU SHOULD CHECK THAT THIS BOOKLET *DOES NOT* HAVE ANY UNPRINTED OR TORN OR MISSING PAGES OR ITEMS ETC. IF SO, GET IT REPLACED BY A COMPLETE TEST BOOKLET.
3. Please note that it is the candidate's responsibility to fill in the Roll Number and other required details carefully and without any omission or discrepancy at the appropriate places in the OMR Answer Sheet and the Separate Answer Booklet. Any omission/discrepancy will render the OMR Answer Sheet and the Separate Answer Booklet liable for rejection.
4. Do not write anything else on the OMR Answer Sheet except the required information. Before you proceed to mark in the OMR Answer Sheet, please ensure that you have filled in the required particulars as per given instructions.
5. Use **only Black Ball Point Pen** to fill the OMR Answer Sheet.
6. This Test Booklet is divided into 4 (four) parts - **Part - I, Part - II and Part - III**
7. All **THREE** parts are **Compulsory**.
8. **Part-I consists of Multiple Choice-based Questions.** The answers to these questions have to be marked in the **OMR Answer Sheet** provided to you.
9. **Part - II and Part - III consists of Conventional Questions.** The answers to these questions have to be written in the **Separate Answer Booklet** provided to you.
10. In Part-I, each item (question) comprises of 04 (four) responses (answers). You are required to select the response which you want to mark on the OMR Answer Sheet. In case you feel that there is more than one correct response, mark the response which you consider the best. In any case, choose **ONLY ONE** response for each item.
11. After you have completed filling in all your responses on the OMR Answer Sheet and the Answer Booklet(s) and the examination has concluded, you should hand over to the Invigilator **only the OMR Answer Sheet and the Answer Booklet(s)**. You are permitted to take the Test Booklet with you.
12. **Penalty for wrong answers in Multiple Choice-based Questions:**  
THERE WIL BE **PENALTY** FOR WRONG ANSWERS MARKED BY A CANDIDATE.
  - (i) There are four alternatives for the answer to every question. For each question for which a wrong answer has been given by the candidate, **one-third** of the marks assigned to the question will be deducted as penalty.
  - (ii) If a candidate gives more than one answer, it will be treated as a **wrong answer** even if one of the given answers happens to be correct and there will be same penalty as above to the question.
  - (iii) If a question is left blank. i.e., no answer is given by the candidate, there will be **no penalty** for that question.

DO NOT OPEN THIS TEST BOOKLET UNTIL YOU ARE ASKED TO DO SO

## PART – I

### MULTIPLE CHOICE BASED QUESTIONS

Instructions for Questions 1 to 60:

- Choose the correct answer for the following questions
- Each question carries 1 marks (60 x 1 = 60 marks)

1. Who is known as the father of forensic science?

- a) Alphonse Bertillon
- b) Edmond Locard
- c) Francis Galton
- d) Karl Landsteiner

2. Locard's Exchange Principle states:

- a) Evidence never lies.
- b) Every contact leaves a trace.
- c) Fingerprints are unique.
- d) DNA is inherited.

3. The first forensic laboratory was established in:

- a) France
- b) USA
- c) India
- d) England

4. Blood grouping is based on:

- a) Antigens present on red blood cells
- b) Plasma proteins
- c) Platelets
- d) None of the above

5. Which is a confirmatory test for SALIVA?

- a) Acid phosphatase test
- b) Brentamine test
- c) PSA test
- d) Hemastix test

6. Which poison smells like bitter almonds?

- a) Arsenic
- b) Cyanide
- c) Methanol
- d) Strychnine



7. The Widmark Formula is used for:

- a) Blood grouping
- b) Estimating blood alcohol concentration
- c) Identifying poisons
- d) DNA profiling

8. The study of criminal behavior is called:

- a) Victimology
- b) Criminology
- c) Penology
- d) Sociology

9. The full form of FAT 32 is

- a) FILE ALLOCATION TABLE
- b) FILE ALLOCATION TABLE 32
- c) FILE ALTERNATIVE TABLE 32
- d) All of the above

10. The full form of MO is ?

- a) Modus Operandi
- b) Mode of Operation
- c) Modal operation
- d) Modal Opto

11. The principle of individuality means:

- a) No two fingerprints are the same
- b) Every object is unique
- c) Evidence is always unique
- d) DNA is identical for twins

12. A legal document prepared by a medical examiner is called:

- a) Postmortem report
- b) Death certificate
- c) Medicolegal certificate
- d) Inquest report

13. Rigor mortis develops first in:

- a) Legs
- b) Arms
- c) Face and neck
- d) Entire body simultaneously

14. Which technique is commonly used in DNA fingerprinting?

- a) PCR
- b) Northern blotting
- c) ELISA
- d) Spectroscopy

15. Who developed the DNA fingerprinting technique?

- a) Alec Jeffreys
- b) Kary Mullis
- c) Watson and Crick
- d) Maurice Wilkins

16. The stationary phase in TLC is typically:

- a) Liquid
- b) Gas
- c) Solid
- d) Plasma

17. TLC is used for:

- a) DNA analysis
- b) Drug identification
- c) Blood grouping
- d) Toxicology only

18. Which stain is used to identify sperm cells?

- a) Hematoxylin
- b) Eosin
- c) Christmas Tree Stain
- d) Gram stain

19. Forensic science primarily involves:

- a) Crime prevention
- b) Crime detection
- c) Criminal rehabilitation
- d) None of the above

20. Who is regarded as the father of fingerprinting?

- a) Edmond Locard
- b) Francis Galton
- c) Alphonse Bertillon
- d) Karl Landsteiner

21. The first forensic laboratory in India was established in:

- a) Delhi
- b) Mumbai
- c) Kolkata
- d) Chennai

22. The principle "Every contact leaves a trace" is attributed to:

- a) Alphonse Bertillon
- b) Hans Gross
- c) Edmond Locard
- d) Alec Jeffreys

23. Which branch of forensic science deals with the study of firearms and ammunition?

- a) Forensic Biology
- b) Forensic Ballistics
- c) Forensic Toxicology
- d) Forensic Anthropology

24. Blood grouping is based on the presence of:

- a) Hemoglobin
- b) Antigens and antibodies
- c) Platelets
- d) Enzymes

25. The confirmatory test for semen is:

- a) Acid phosphatase test
- b) PSA test
- c) Luminol test
- d) Benzidine test

26. Which is the universal donor blood group?

- a) A
- b) B
- c) Ab
- d) O

27. The Takayama test is used to detect:

- a) Saliva
- b) Blood
- c) Semen
- d) Urine



28. Blood spatter analysis helps in determining:

- a) Blood group
- b) DNA profile
- c) Sequence of events during a crime
- d) Blood volume at the scene

29. Cyanide poisoning produces the smell of:

- a) Garlic
- b) Bitter almonds
- c) Rotten eggs
- d) Sweet cherries

30. What is the lethal dose (LD50) used to measure?

- a) Poison's effectiveness
- b) Poison's fatality in half the test population
- c) Amount needed to cause paralysis
- d) Amount needed for recovery

31. Widmark's Formula is used to calculate:

- a) Time of death
- b) Alcohol concentration in blood
- c) Rate of metabolism
- d) Levels of carbon monoxide

32. Arsenic is commonly referred to as:

- a) The "silent killer"
- b) The "poison of kings"
- c) "Fool's gold"
- d) "Medicinal poison"

33. The Marsh test is used for detecting:

- a) Alcohol
- b) Arsenic
- c) Lead
- d) Cyanide

34. The scientific study of crimes and criminals is called:

- a) Penology
- b) Criminology
- c) Victimology
- d) Sociology

35. A person who commits a crime repeatedly is referred to as a:

- a) First-time offender
- b) Recidivist
- c) Victim
- d) Criminalist

36. The theory of "born criminals" was proposed by:

- a) Sigmund Freud
- b) Cesare Lombroso
- c) Jeremy Bentham
- d) Edwin Sutherland

37. Which is NOT a branch of criminology?

- a) Criminal psychology
- b) Criminal profiling
- c) Cybercrime studies
- d) Pharmacology

38. Which factor is central to Edwin Sutherland's differential association theory?

- a) Genetics
- b) Peer influence
- c) Economic conditions
- d) Law enforcement

39. Which file system is analyzed in most computer forensic investigations?

- a) FAT32
- b) NTFS
- c) exFAT
- d) All of the above

40. A hash value in computer forensics is used to:

- a) Store passwords
- b) Identify changes in files
- c) Track email addresses
- d) Encrypt data

41. Write blockers are used to:

- a) Prevent overwriting of digital evidence
- b) Recover deleted files
- c) Encrypt evidence files
- d) Create backup copies

42. What does volatile memory refer to?

- a) Memory that stores permanent data
- b) Memory that is erased when power is off
- c) Data stored on a hard disk
- d) Backup storage devices

43. Which of the following is a cybercrime?

- a) Identity theft
- b) Hacking
- c) Phishing
- d) All of the above

44. The principle of individuality implies:

- a) Everyone is unique
- b) DNA is the same for all humans
- c) Every crime is unique
- d) None of the above

45. Chain of custody refers to:

- a) The sequence of legal proceedings
- b) Tracking of evidence handling
- c) The examination of fingerprints
- d) Criminal profiling process

46. The legal term for a postmortem examination is:

- a) Biopsy
- b) Autopsy
- c) Inquest
- d) Necropsy

47. Which of the following is the primary focus of forensic anthropology?

- a) Identifying causes of death
- b) Identifying human remains
- c) Analysing blood samples
- d) Conducting autopsies

48. Which is the main focus of medical jurisprudence?

- a) Health laws
- b) Interaction of law and medical practice
- c) Criminal psychology
- d) None of the above



49. DNA fingerprinting was developed by:

- a) Kary Mullis
- b) Alec Jeffreys
- c) Francis Crick
- d) Watson and Wilkins

50. What stain is used to confirm the presence of sperm?

- a) Christmas Tree Stain
- b) Hematoxylin
- c) Eosin
- d) Safranin

51. Which scientist is associated with the development of the first forensic laboratory?

- a) Francis Galton
- b) Hans Gross
- c) Edmond Locard
- d) Alphonse Bertillon

52. The Kastle-Meyer test is used to detect:

- a) Semen
- b) Saliva
- c) Blood
- d) Urine

53. The universal recipient blood group is:

- a) O+
- b) AB+
- c) O-
- d) A+

54. Which poison causes a bright red coloration in blood?

- a) Cyanide
- b) Carbon monoxide
- c) Arsenic
- d) Methanol

55. The study of poisons and their effects on the human body is called:

- a) Pathology
- b) Toxicology
- c) Serology
- d) Pharmacology

56. The concept of "white-collar crime" was introduced by:
- a) Cesare Lombroso
  - b) Edwin Sutherland
  - c) Sigmund Freud
  - d) August Vollmer
57. A hash value is important in computer forensics because it:
- a) Encrypts data
  - b) Prevents tampering with evidence
  - c) Confirms data integrity
  - d) Identifies deleted files
58. Which of the following enzymes is used in the Polymerase Chain Reaction (PCR)?
- a) Ligase
  - b) Taq polymerase
  - c) Restriction enzymes
  - d) Helicase
59. The mobile phase in TLC is typically:
- a) A liquid
  - b) A solid
  - c) A gas
  - d) None of the above
60. A postmortem examination is conducted to determine:
- a) The cause of death
  - b) The type of poison used
  - c) The DNA profile
  - d) Blood alcohol level

## **PART – II**

### **SHORT ANSWER TYPE QUESTIONS**

(Answer any 5 out of 8 questions) 5x 6 marks each = 30 marks

- 61. Explain Locard's Exchange Principle with two examples.
- 62. Differentiate between forensic toxicology and clinical toxicology.
- 63. Discuss the significance of DNA fingerprinting in criminal investigations.
- 64. Write a note on the legal responsibilities of a forensic expert during a court trial.
- 65. Describe the procedure for collecting and analyzing blood evidence from a crime scene.
- 66. List the applications of computer forensics in cybercrime investigations.
- 67. Explain the principle and applications of Thin Layer Chromatography (TLC).
- 68. Describe the medicolegal importance of rigor mortis and postmortem lividity.

### **PART- III**

#### **LONG ANSWER TYPE QUESTIONS**

(Answer any 2 out of 4 questions) 2 x 15 marks each = 30 marks

69. Discuss in detail the role of forensic science in the criminal justice system, citing relevant principles and real-world applications.

70. Explain the steps involved in the DNA fingerprinting process and its applications in forensics.

71. What is forensic serology? Elaborate on the techniques used to identify and analyze blood and bodily fluids.

72. Write a detailed account of forensic toxicology, including sample collection, analysis, and its application in criminal investigations.

.....X.....