



Test Booklet Code &amp; Serial No.

प्रश्नपत्रिका कोड व क्रमांक

**Paper-II****FORENSIC SCIENCE****C****Signature and Name of Invigilator**

Seat No.

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(In figures as in Admit Card)

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OMR Sheet No.

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(To be filled by the Candidate)

**JUN - 39225****Time Allowed : 2 Hours]****[Maximum Marks : 200****Number of Pages in this Booklet : 20****Number of Questions in this Booklet : 100****Instructions for the Candidates**

- Write your Seat No. and OMR Sheet No. in the space provided on the top of this page.
- This paper consists of 100 objective type questions. Each question will carry two marks. All questions of Paper II will be compulsory. At the commencement of examination, the question booklet will be given to the student. In the first 5 minutes, you are requested to open the booklet and compulsorily examine it as follows :
  - To have access to the Question Booklet, tear off the paper seal on the edge of this cover page. Do not accept a booklet without sticker-seal or open booklet.
  - Tally the number of pages and number of questions in the booklet with the information printed on the cover page. Faulty booklets due to missing pages/questions or questions repeated or not in serial order or any other discrepancy should not be accepted and correct booklet should be obtained from the invigilator within the period of 5 minutes. Afterwards, neither the Question Booklet will be replaced nor any extra time will be given. The same may please be noted.
  - After this verification is over, the OMR Sheet Number should be entered on this Test Booklet.
- Each question has four alternative responses marked (A), (B), (C) and (D). You have to darken the circle as indicated below on the correct response against each item.  
**Example :** where (B) is the correct response.



Following wrong methods should not be used as they are not recognised by scanning machine in digitized assessment. Candidate using such method will be responsible for their loss.



- Your responses to the items are to be indicated in the **OMR Sheet given inside the Booklet only**. If you mark at any place other than in the circle in the OMR Sheet, it will not be evaluated. Read instructions given inside carefully.
- Rough Work is to be done at the end of this booklet.
- If you write your Name, Seat Number, Phone Number or put any mark on any part of the OMR Sheet, except for the space allotted for the relevant entries, which may disclose your identity, or use abusive language or employ any other unfair means, you will render yourself liable to disqualification.
- You have to return original OMR Sheet to the invigilator at the end of the examination compulsorily and must not carry it with you outside the Examination Hall. You are, however, allowed to carry the Test Booklet and duplicate copy of OMR Sheet on conclusion of examination.
- Use only Blue/Black Ball point pen.
- Use of any calculator or log table, etc., is prohibited.
- There is no negative marking for incorrect answers.

**विद्यार्थ्यासाठी महत्वाच्या सूचना**

- परीक्षार्थींनी आपला आसन क्रमांक या पृष्ठावरील वरच्या कोपऱ्यात लिहावा. तसेच आपणास दिलेल्या उत्तरपत्रिकेचा क्रमांक त्याखाली लिहावा.
- सदर प्रश्नपत्रिकेत 100 बहुपर्यायी प्रश्न आहेत. प्रत्येक प्रश्नास दोन गुण आहेत. या प्रश्नपत्रिकेतील सर्व प्रश्न सोडविणे अनिवार्य आहे.
- परीक्षा सुरू झाल्यावर विद्यार्थ्याला प्रश्नपत्रिका दिली जाईल. सुरुवातीच्या 5 मिनिटांमध्ये आपण सदर प्रश्नपत्रिका उघडून खालील बाबी अवश्य तपासून घ्याव्यात.
  - प्रश्नपत्रिका उघडण्यासाठी प्रश्नपत्रिकेवर लावलेले सील उघडावे. सील नसलेली किंवा सील उघडलेली प्रश्नपत्रिका स्वीकारू नये.
  - पहिल्या पृष्ठावर नमूद केल्याप्रमाणे प्रश्नपत्रिकेची एकूण पृष्ठे तसेच प्रश्नपत्रिकेतील एकूण प्रश्नांची संख्या पडताळून घ्यावी. पृष्ठे कमी असलेली/कमी प्रश्न असलेली/प्रश्नांचा चुकीचा क्रम असलेली किंवा इतर त्रुटी असलेली सदोष प्रश्नपत्रिका सुरुवातीच्या 5 मिनिटांतच पर्यवेक्षकाला परत देऊन दुसरी प्रश्नपत्रिका मागवून घ्यावी. त्यानंतर प्रश्नपत्रिका बदलून मिळणार नाही तसेच वेळही वाढवून मिळणार नाही याची कृपया विद्यार्थ्यांनी नोंद घ्यावी.
  - वरीलप्रमाणे सर्व पडताळून पाहिल्यानंतरच प्रश्नपत्रिकेवर ओ.एम.आर. उत्तरपत्रिकेचा नंबर लिहावा.
- प्रत्येक प्रश्नासाठी (A), (B), (C) आणि (D) अशी चार विकल्प उत्तरे दिली आहेत. त्यातील योग्य उत्तराचा रकाना खाली दर्शविल्याप्रमाणे ठळकपणे काढू/निळा करावा.

**उदा. :** जर (B) हे योग्य उत्तर असेल तर.

खालील चुकीच्या पद्धती वापरू नये, कारण डिजिटाइज्ड (Digitized) मूल्यांकनात स्कॅनिंग मशीन त्यांना ओळखत नाही. त्या पद्धती वापरून नुकसान झाल्यास त्यास विद्यार्थ्यांचे जबाबदार असतील.



- या प्रश्नपत्रिकेतील प्रश्नांची उत्तरे ओ.एम.आर. उत्तरपत्रिकेतच दर्शवावीत. इतर ठिकाणी लिहिलेली उत्तरे तपासली जाणार नाहीत.
- आत दिलेल्या सूचना काळजीपूर्वक वाचाव्यात.
- प्रश्नपत्रिकेच्या शेवटी जोडलेल्या कोऱ्या पानावरच कच्चे काम करावे.
- जर आपण ओ.एम.आर. वर नमूद केलेल्या ठिकाणाव्यतिरिक्त इतर कोठेही नाव, आसन क्रमांक, फोन नंबर किंवा ओळख पटेल अशी कोणतीही खूण केलेली आढळून आल्यास अथवा असभ्य भाषेचा वापर किंवा इतर गैरमार्गांचा अवलंब केल्यास विद्यार्थ्याला परीक्षेस आपात्र ठरविण्यात येईल.
- परीक्षा संपल्यानंतर विद्यार्थ्याने मूळ ओ.एम.आर. उत्तरपत्रिका पर्यवेक्षकांकडे परत करणे आवश्यक आहे. तथापि, प्रश्नपत्रिका व ओ.एम.आर. उत्तरपत्रिकेची द्वितीय प्रत आपल्याबरोबर नेण्यास विद्यार्थ्यांना परवानगी आहे.
- फक्त निळ्या किंवा काळ्या बॉल पेनचाच वापर करावा.
- कॅलक्युलेटर किंवा लॉग टेबल वापरण्यास परवानगी नाही.
- चुकीच्या उत्तरासाठी गुण कपात केली जाणार नाही.





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Your Personal Exam Guide





**JUN - 39225/II—C**

**Forensic Science**  
**Paper II**

**Time Allowed : 120 Minutes]**

**[Maximum Marks : 200**

**Note :** This paper contains **Hundred (100)** multiple choice questions. Each question carrying **Two (2)** marks. Attempt *All* questions.

|                                                                                                                                                                                                         |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
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| <p>1. An instability caused by the eccentricity or imbalance of the bullet in flight is known as :</p> <p>(A) Bullet Bushing</p> <p>(B) Bullet Upset</p> <p>(C) Bullet Yaw</p> <p>(D) Bullet Splash</p> | <p>3. In ammunition, which of the following denotes a numerical term included in a cartridge name to indicate the nominal bullet diameter ?</p> <p>(A) Canting</p> <p>(B) Caliber</p> <p>(C) Cannelure</p> <p>(D) Bushing</p> <p>4. Which of the following are serial number restoration methods ?</p> <p><b>List</b></p> <p>(i) Chemical etching</p> <p>(ii) Electrolytic chemical etching</p> <p>(iii) Magnetic particle inspection</p> <p>(iv) Light and alternate light sources</p> <p>(v) Overstamping</p> <p><b>Codes :</b></p> <p>(A) (i), (ii), (iii), (iv)</p> <p>(B) (i), (ii), (iii), (v)</p> <p>(C) (i), (ii), (v)</p> <p>(D) (ii), (iv), (v)</p> |
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5. Singeing is found in which type of firing ?
  - (A) Near-contact range firing
  - (B) Mid-range firing
  - (C) Long distance firing
  - (D) Intermediate-range firing
6. Which of the following is caused by the carbonaceous material in the discharge residues mainly resulting from incomplete combustion of the propellant ?
  - (A) Scorching
  - (B) Dustring
  - (C) Blackening
  - (D) Tattooing
7. What is the full form of NIBIN ?
  - (A) National Integrated Ballistic Information Network
  - (B) National Integrated Ballistic Identification Network
  - (C) National Institute of Ballistic Identification Network
  - (D) National Integrated Ballistic Investigation Network
8. The term 'Vierling' and 'Drilling' are associated with :
  - (A) LMG
  - (B) MMG
  - (C) Shotgun
  - (D) Grenade Launcher
9. Ratchet mechanism is associated with which type of firearm ?
  - (A) Shotgun
  - (B) Airgun
  - (C) Revolver
  - (D) Pistol
10. In modified Griess test, the positive result is indicated by :
  - (A) Green-blue colour
  - (B) Dark blue colour
  - (C) Orange red colour
  - (D) Dark green colour
11. Which of the following is an element of fire tetrahedron which is not present in fire triangle ?
  - (A) Fuel
  - (B) Heat
  - (C) Oxygen
  - (D) Uninhibited chain reaction





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| <p>12. What is the fundamental principle of photogrammetry ?</p> <p>(A) Interference</p> <p>(B) Resection</p> <p>(C) Triangulation</p> <p>(D) Intersection principle</p> <p>13. Who invented the negative-positive process in photography ?</p> <p>(A) Roger Bacon</p> <p>(B) Al-Haitham</p> <p>(C) Louis Jacques Mande Deguerre</p> <p>(D) William Henry Fox Talbot</p> <p>14. What is Pyrolysis ?</p> <p>(A) The decomposition of solid organic matter by heat</p> <p>(B) Evaporation of combustible liquids at low temperature</p> <p>(C) The red glow of hot charcoal</p> <p>(D) Burning of cigarette</p> <p>15. Which of the following phenomenon does not require any medium to transfer heat ?</p> <p>(A) Conduction</p> <p>(B) Convection</p> <p>(C) Radiation</p> <p>(D) Bloating</p> | <p>16. Deflagration is referred as :</p> <p>(A) An extremely rapid oxidation reaction accompanied by violent disruptive effect, high-speed shock wave</p> <p>(B) A very rapid oxidation reaction accompanied by the generation of low intensity pressure wave that can disrupt the surroundings</p> <p>(C) Removing the safety fuse of the explosives</p> <p>(D) Expansion of gases</p> <p>17. N-nitration compound include :</p> <p>(A) Nitrocellulose</p> <p>(B) Nitroglycerine</p> <p>(C) Picric acid</p> <p>(D) Nitroguanidine</p> <p>18. What is the unit for API Gravity ?</p> <p>(A) m/s</p> <p>(B) Degree</p> <p>(C) <math>\text{kg/m}^2</math></p> <p>(D) <math>\text{cm}^3</math></p> <p>19. Which of the following is a friction and impact sensitive explosive that is extremely potent when confined in a container such as a pipe ?</p> <p>(A) TATP</p> <p>(B) RDX</p> <p>(C) PETN</p> <p>(D) ANFO</p> |
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20. A small opening that controls the amount of light to take picture is called as :

- (A) Aperture
- (B) Shutter
- (C) Exposure
- (D) Depth of field

21. The common shapes of crystalline pigments are :

- (a) Spherical
- (b) Cubic
- (c) Rectangular
- (d) Needle-shaped

Choose the correct answer from the options given below :

- (A) (a), (b) and (c) only
- (B) (a), (b) and (d) only
- (C) (a), (c) and (d) only
- (D) (b), (c) and (d) only

22. Rootkit is an example of :

- (A) Virus
- (B) DOS attack
- (C) Logic bombs
- (D) Trojan

23. Which of the following are formats (extension) of forensic images of hard drives ?

- (a) EO1
- (b) AD1
- (c) OO1
- (d) FI1

Choose the correct answer from the options given below :

- (A) (a), (b) and (c) only
- (B) (a), (b) and (d) only
- (C) (a), (c) and (d) only
- (D) (b), (c) and (d) only

24. Setting time of cement is determined using :

- (A) Berner apparatus
- (B) Bunsen apparatus
- (C) Vicat apparatus
- (D) Burden apparatus

25. Density for which of the following liquid is the maximum ?

- (A) Xylene
- (B) Nitrobenzene
- (C) Bromobenzene
- (D) Bromoform





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26. The hairs formed in the embryo as the first product of follicular development is better known as :
- (A) Vellus hairs
  - (B) Lanugo hairs
  - (C) Terminal hairs
  - (D) Fuzz hairs
27. Which of the following glass is also used in bulletproof screens ?
- (A) Laminated glass
  - (B) Tempered glass
  - (C) Crown glass
  - (D) Slit glass
28. Match the following :

**Colourants**

- (a) Copper
- (b) Nickel
- (c) Manganese
- (d) Antimony Sulphide

**Glass Colour**

- (i) Red
- (ii) Purple
- (iii) Yellow
- (iv) Blue

**Codes :**

- (a) (b) (c) (d)
- (A) (i) (iii) (ii) (iv)
- (B) (iv) (iii) (ii) (i)
- (C) (iv) (ii) (iii) (i)
- (D) (i) (iv) (iii) (ii)

29. The pennate diatoms which possess a raphe is known as :
- (A) Fragilariineae
  - (B) Bacillariineae
  - (C) Rhizosoleniineae
  - (D) Biddulphiineae
30. Diatom is basically a :
- (A) Bacteria
  - (B) Protozoa
  - (C) Microalgae
  - (D) Virus
31. **Statement I :** Mass and tension of vocal folds are more important than length in determining fundamental frequency.
- Statement II :** Lengthening of folds makes them less massive and more tense, causing fundamental frequency to fall.
- (A) Both Statement I and Statement II are true
  - (B) Statement I is true but Statement II is false
  - (C) Statement I is false but Statement II is true
  - (D) Both Statement I and Statement II are false





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32. **Statement I :** Different inflation of tyres will lead to different appearance of the skid marks.

**Statement II :** The appearance of each skid mark pattern is special.

- (A) Both Statement I and Statement II are true
- (B) Statement I is true but Statement II is false
- (C) Statement I is false but Statement II is true
- (D) Both Statement I and Statement II are false

33. Which of the following is used for the development of footwear impression in blood ?

- (a) Coomassie Blue
- (b) Fuchsin Acid
- (c) Hungarian Black
- (d) Patent Red

Choose the correct answer from the options given below :

- (A) (a) and (b) only
- (B) (b) and (c) only
- (C) (c) and (d) only
- (D) (d) and (a) only

34. Which of the following lifters is commonly chosen when a latent impression is on a fragile surface ?

- (A) Lifting sheets
- (B) Rubber gelatin lifters
- (C) Transparent type lifters
- (D) Hinge lifters

35. In case of amputation of one finger, the following print is considered in classification :

- (A) Index finger of other hand
- (B) Thumb impression of other hand
- (C) Corresponding finger of the other hand
- (D) Next finger of the same hand

36. Which of the following algorithms are used for appearance-based face recognition techniques ?

- (a) Principal component analysis
- (b) Linear discriminant analysis
- (c) Independent component analysis
- (d) Local binary pattern analysis

Choose the correct answer from the options given below :

- (A) (a), (b) and (c) only
- (B) (a), (b) and (d) only
- (C) (a), (c) and (d) only
- (D) (b), (c) and (d) only





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| <p>37. Which of the following is a popular face detection algorithm ?</p> <p>(A) Adaboost</p> <p>(B) Haar-wavelet</p> <p>(C) Roberts</p> <p>(D) Viola-Jones</p> <p>38. Thermogram is captured under which of the following spectral range for biometric purposes ?</p> <p>(A) 0.1–0.2 <math>\mu\text{m}</math></p> <p>(B) 0.2–0.4 <math>\mu\text{m}</math></p> <p>(C) 0.4–0.7 <math>\mu\text{m}</math></p> <p>(D) 0.9–1.7 <math>\mu\text{m}</math></p> <p>39. Admissibility of a voice sample recorded in a micro-SD card copied from phone memory is under which of the following sections of Indian Evidence Act ?</p> <p>(A) 65B</p> <p>(B) 79A</p> <p>(C) 83A</p> <p>(D) 104B</p> | <p>40. Which of the following surface is the lowest automobile-tire coefficient of friction ?</p> <p>(A) Dry asphalt</p> <p>(B) Wet asphalt</p> <p>(C) Mud</p> <p>(D) Ice</p> <p>41. An individual when tries to imitate handwriting of another person, the handwriting is known as :</p> <p>(A) Copied handwriting</p> <p>(B) Disguised handwriting</p> <p>(C) Traced forgery</p> <p>(D) Simulated forgery</p> <p>42. In “elite” typewriters, the spacing per 100 characters is :</p> <p>(A) 254 mm</p> <p>(B) 225 mm</p> <p>(C) 212 mm</p> <p>(D) 185 mm</p> |
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| <p>43. The deliberate departure from one's own natural writing habit is known as :</p> <p>(A) Simulated Handwriting</p> <p>(B) Disguised Handwriting</p> <p>(C) Personal Handwriting</p> <p>(D) Abnormal Handwriting</p> <p>44. Individuality of Handwriting was statistically validated by :</p> <p>(A) Osborn</p> <p>(B) Hilton</p> <p>(C) Harrison</p> <p>(D) Srihari</p> <p>45. An ambidextrous individual is the one :</p> <p>(A) A person who writes with feet only</p> <p>(B) A person who writes with left hand only</p> <p>(C) A person who writes with both hands with equal fluency</p> <p>(D) A person who is a disguiser</p> | <p>46. Cryptography is a science of :</p> <p>(A) Script writing</p> <p>(B) Chemicals library</p> <p>(C) Encoding and decoding</p> <p>(D) Way to encrypt and decrypt only</p> <p>47. A document entirely written and signed by the same person is better known as :</p> <p>(A) Holograph</p> <p>(B) Genuine document</p> <p>(C) Pil crow</p> <p>(D) Recto document</p> <p>48. Among the following which type of writing forgery is least liable to detection.</p> <p>(A) Random forgery</p> <p>(B) Traced forgery</p> <p>(C) Freehand forgery</p> <p>(D) Lifted forgery</p> |
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49. The measuring parameters for the determination of the age of ink based on extractability are :

- (a) R-ratio
- (b) Dye ratio
- (c) Percent sublimation
- (d) Percent extraction

Choose the correct answer from the options given below :

- (A) (a), (b) and (c) only
- (B) (a), (c) and (d) only
- (C) (a), (b) and (d) only
- (D) (b), (c) and (d) only

50. A fraudulent signature in which there was no apparent attempt at simulation or imitation is known as :

- (A) Guided signature
- (B) Abnormal signature
- (C) Spurious signature
- (D) Fraudulently genuine signature

51. Minnesota criteria of the moment of death is based on death of which of the following ?

- (A) Brain
- (B) Heart
- (C) Lungs
- (D) Brain stem

52. The method used for the collection of CSF on intact body before autopsy is known as :

- (A) Lumbar puncture
- (B) Sacral puncture
- (C) Thoracic puncture
- (D) Coccygeal puncture

53. In photographic superimposition technique, small photograph is enlarged to exact life size by which of the following techniques ?

- (a) From an object in picture
- (b) From interpupillary distance
- (c) From image registration
- (d) From intrapupillary distance

Choose the correct answer from the options given below :

- (A) (a) and (b) only
- (B) (b) and (c) only
- (C) (c) and (d) only
- (D) (d) and (a) only





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54. **Statement I :** Human bones do not display sexual dimorphism.

**Statement II :** In pelvis, sexual dimorphism is present since fetal life.

- (A) Both Statement I and Statement II are true
- (B) Statement I is true but Statement II is false
- (C) Statement I is false but Statement II is true
- (D) Both Statement I and Statement II are false

55. The stature from fragmentary remains of bones can be estimated by :

- (A) Steele's formula
- (B) Smith and Fiddle's formula
- (C) Multiplication factor
- (D) McKern and Steele's formula

56. Which of the following offence is a type of sexual perversion ?

- (A) Sodomy
- (B) Buccal coitus
- (C) Tribadism
- (D) Sadism

57. Match the following :

**Age of Hymenal Tears**

- (a) Immediate after the act
- (b) 3-4 days
- (c) 7 days
- (d) Several months

**Characteristic of hymen**

- (i) V-shaped
- (ii) Edges of tear are congested and swollen
- (iii) Hymen margin are red, sharp and bleed on touch
- (iv) Complete healing but torn parts not united

Choose the correct answer from the options given below :

(a) (b) (c) (d)

- (A) (iii) (ii) (i) (iv)
- (B) (iii) (ii) (iv) (i)
- (C) (ii) (iii) (i) (iv)
- (D) (ii) (iii) (iv) (i)

58. Space between two teeth is known as :

- (A) Diastema
- (B) Periodontosis
- (C) Prosthesis
- (D) Denture





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| <p>59. Surgical wounds produced by doctors during treatment are known as :</p> <p>(A) Offence wounds</p> <p>(B) Iatrogenic wounds</p> <p>(C) Fabricated wounds</p> <p>(D) Defence wounds</p> <p>60. The characteristic attitude adopted by the body after severe burns, which cause heat coagulation of muscle protein is known as :</p> <p>(A) Sikken attitude</p> <p>(B) Conative attitude</p> <p>(C) Affective attitude</p> <p>(D) Pugilistic attitude</p> <p>61. What is the full form of “BEOSP” ?</p> <p>(A) Brain Electrical Oscillation Signature Performance</p> <p>(B) Brain Electronic Oscillation Signature Profiling</p> <p>(C) Brain Electrical Oscillation Signature Profiling</p> <p>(D) Brain Electrical Oscillation Signature Program</p> | <p>62. Which article of the Indian Constitution provides for “Right to Education” ?</p> <p>(A) Article 14</p> <p>(B) Article 21A</p> <p>(C) Article 22</p> <p>(D) Article 23</p> <p>63. <b>Statement I :</b> Blood drops that strike a target at an angle less than <math>90^\circ</math> will create elliptical bloodstains and the width and length of an elliptical bloodstain can be used to determine the angle of impact.</p> <p><b>Statement II :</b> A mathematical relationship exists between the width and length of an elliptical bloodstain.</p> <p>(A) Statement I and Statement II both are true</p> <p>(B) Statement I is true, Statement II is false</p> <p>(C) Statement I is false, Statement II is true</p> <p>(D) Statement I and Statement II both are false</p> |
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64. Which of the following standard deals with information security and privacy protection ?  
(A) ISO/IEC 27001  
(B) ISO/IEC 17025  
(C) ISO/IEC 9000  
(D) ISO/IEC 14001
65. How many location photographs are required (at least) for photogrammetry ?  
(A) 1  
(B) 2  
(C) 3  
(D) 4
66. The chain of custody of all evidence must include the following details :  
List  
(i) Exhibit number  
(ii) Item description  
(iii) Location where the item was found  
(iv) Name and signature of the person who collected the evidence  
(v) Name of the victim  
(vi) Case reference number, FIR, Date, Police station  
**Codes :**  
(A) (i), (ii), (iii), (iv), (v), (vi)  
(B) (i), (ii), (iii), (iv), (vi)  
(C) (i), (ii), (iv), (v), (vi)  
(D) (i), (ii), (iii), (v), (vi)
67. The court of magistrate of first class may pass a sentence of imprisonment for a term not exceeding :  
(A) One year  
(B) Three years  
(C) Five years  
(D) Seven years
68. Which section of the Criminal Procedure Code, 1973 states that a person cannot be bound to answer the questions which would have a tendency to expose him to a criminal charge or to a penalty or forfeiture ?  
(A) Section 171  
(B) Section 172 (1)  
(C) Section 161 (1)  
(D) Section 161 (2)
69. An office of the government handwriting expert of Bengal was established in Kolkata in 1904 which was shifted in 1906 to which of the following places ?  
(A) Delhi  
(B) Mumbai  
(C) Shimla  
(D) Chennai





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70. When was the First Chemical Examiner's Laboratory established in Madras Presidency ?

- (A) 1849
- (B) 1851
- (C) 1869
- (D) 1839

71. Which of the following are correct regarding adsorbents ?

- (a) Silica is more acidic
- (b) Alumina is more basic
- (c) Silica is good for the separation of acidic materials
- (d) Alumina is good for the separation of basic materials

Choose the correct answer from the options given below :

- (A) (a) and (b) only
- (B) (b) and (c) only
- (C) (c) and (d) only
- (D) (d) and (a) only

72. Which of the following is a gas-phase ionization technique ?

- (A) Electron impact
- (B) Fast atom bombardment
- (C) Field Desorption
- (D) Laser Desorption

73. Match the following :

### GLC Detector

- (a) Flame Ionization
- (b) Thermal Conductivity
- (c) Electron Capture
- (d) Thermionic

### Applicable Samples

- (i) Universal detector
- (ii) Halogenated compounds
- (iii) Nitrogen and Phosphorus compound
- (iv) Hydrocarbons

Choose the correct answer from the options given below :

- (a) (b) (c) (d)
- (A) (iv) (i) (ii) (iii)
- (B) (i) (iv) (iii) (ii)
- (C) (ii) (iii) (i) (iv)
- (D) (iii) (ii) (iv) (i)

74. The Medullary index of hair is :

- (A)  $\frac{\text{Diameter of hair shaft}}{\text{Diameter of medulla}}$
- (B)  $\frac{\text{Circumference of hair shaft}}{\text{Diameter of medulla}}$
- (C)  $\frac{\text{Diameter of hair shaft}}{\text{Circumference of hair shaft}}$
- (D)  $\frac{\text{Diameter of medulla}}{\text{Diameter of hair shaft}}$



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75. Which of the following technique is used in assays for small molecules where only a single epitope is present on the antigen ?
- (A) Double antibody sandwich ELISA  
(B) Triple antibody sandwich ELISA  
(C) Competitive ELISA  
(D) Dissociation enhanced lanthanide fluorescence immunoassay
76. Which of the following crystal, used as dispersing element in X-ray monochromators, has the highest interplanar distance ?
- (A) Topaz  
(B) Lithium Fluoride  
(C) Sodium Chloride  
(D) Ammonium dihydrogen phosphate
77. Generally, XRF is used for the qualitative identification of elements having atomic numbers greater than :
- (A) 2  
(B) 4  
(C) 6  
(D) 8
78. 'Mulling' technique is associated with which instrument ?
- (A) AES  
(B) AAS  
(C) U.V. visible spectrometry  
(D) IR spectrometry
79. Which of the following diodes, used in LED as a source in UV-visible spectroscopy, produces maximum wavelength ?
- (A) Gallium Nitride  
(B) Gallium Phosphide  
(C) Gallium Arsenic Phosphide  
(D) Gallium Aluminium Arsenide
80. Which of the following are off-axis aberration ?
- (a) Spherical aberration  
(b) Chromatic aberration  
(c) Coma  
(d) Field curvature
- Choose the correct answer from the options given below :
- (A) (a) and (c) only  
(B) (b) and (d) only  
(C) (c) and (d) only  
(D) (a) and (b) only



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| <p>81. Corpora-basal index is used to determine :</p> <p>(A) Sex</p> <p>(B) Age</p> <p>(C) Race</p> <p>(D) Stature</p> <p>82. Optimum temperature of DNA polymerase of Taq polymerase is :</p> <p>(A) 54°C</p> <p>(B) 37°C</p> <p>(C) 25°C</p> <p>(D) 72°C</p> <p>83. 'Star activity' affects the result of RFLP. Star activity refers to :</p> <p>(A) Matching jump curve</p> <p>(B) Deviation of specificity of cleavage site of restriction enzyme</p> <p>(C) Condition where large amount of restriction enzyme is used</p> <p>(D) Separation based on molecular weight</p> <p>84. Which of the following translation method uses radioisotope labelled probes ?</p> <p>(A) miRNA translation</p> <p>(B) Nick translation</p> <p>(C) Sanger sequencing</p> <p>(D) mtRNA translation</p> | <p>85. Christmas tree stain is used for the identification of :</p> <p>(A) Sperm cells</p> <p>(B) Salivary cells</p> <p>(C) Erythrocytes</p> <p>(D) Epithelial cells</p> <p>86. The modified version of the organic extraction method that separates epithelial and sperm cells from vaginal swab is :</p> <p>(A) Differential extraction</p> <p>(B) Microwave assisted extraction</p> <p>(C) Reflux extraction</p> <p>(D) Soxhet extraction</p> <p>87. The polymorphic markers on mitochondrial DNA can be useful in :</p> <p>(A) Species identification</p> <p>(B) Race recognition</p> <p>(C) Paternity testing</p> <p>(D) Identifying a victim by comparing samples of maternal relative DNA</p> |
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88. FUT3 gene name belongs to which of the following blood group system ?  
(A) Lewis  
(B) Kell  
(C) Duffy  
(D) MNS
89. How many antigens are present in Diego blood group system ?  
(A) 25  
(B) 02  
(C) 49  
(D) 21
90. What do you mean by the term Teratospermia ?  
(A) Low sperm  
(B) No sperm  
(C) Sperm with abnormal morphology  
(D) Immobile and dead sperms
91. Candyflipping refers to :  
(A) Excessive consumption of LSD  
(B) Intentional combination of ethanol and benzodiazepines  
(C) Intentional combination of LSD and Cocaine  
(D) Intentional combination of LSD and ecstasy
92. In 1859, who isolated cocaine as the active ingredient of the plant ?  
(A) Vassili von Anrep  
(B) Karl Koller  
(C) Albert Niemann  
(D) Sigmund Freud
93. Which of the following is an example of carbamates ?  
(A) Malathion  
(B) Parathion  
(C) DDT  
(D) Baygon
94. During World War II, Ricin was given the code name :  
(A) Compound Ric  
(B) Compound C  
(C) Compound R  
(D) Compound W
95. Dille Koppanyi test is used for the preliminary examination of :  
(A) Amphetamines  
(B) LSD  
(C) Marijuana  
(D) Barbiturate





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96. Which of the following drug is commonly known as “Krokodil” ?

- (A) Rohypnol
- (B) Desomorphine
- (C) Codeine
- (D) Cannabis

97. Which of the following is an example of opium alkaloids ?

- (a) Morphine
- (b) Codeine
- (c) Thebaine
- (d) Cannibinol

Choose the correct answer from the options given below :

- (A) (a), (b) and (c) only
- (B) (b), (c) and (d) only
- (C) (c), (d) and (a) only
- (D) (a), (b) and (d) only

98. Which of the following screening tests is recommended for organo-phosphorous compounds ?

- (A) Marquis test
- (B) Ammonium Molybdate test
- (C) Froehde’s test
- (D) Husemann’s test

99. Match the following :

**List I (Vegetable Poison)**

- (a) Nux Vomica
- (b) Opium
- (c) Dhatura
- (d) Abrus Precatorius

**List II (Active Principles)**

- (i) Papaverine
- (ii) Abrin
- (iii) Brucine
- (iv) Atropine

**Codes :**

- (a) (b) (c) (d)
- (A) (ii) (i) (iv) (iii)
- (B) (iv) (iii) (ii) (i)
- (C) (iii) (i) (iv) (ii)
- (D) (ii) (iv) (i) (iii)

100. The club drug mephedrone was included in the NDPS Act 1985 in the year :

- (A) 2011
- (B) 2013
- (C) 2015
- (D) 2007





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**ROUGH WORK**

