

Test Booklet Code & Serial No.

प्रश्नपत्रिका कोड व क्रमांक

**Paper-II**

**FORENSIC SCIENCE**

**A**

**Signature and Name of Invigilator**

Seat No.

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1. (Signature) .....

(In figures as in Admit Card)

(Name) .....

Seat No. ....

(In words)

2. (Signature) .....

(Name) .....

OMR Sheet No.

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(To be filled by the Candidate)

**MAR - 39223**

**Time Allowed : 2 Hours]**

**[Maximum Marks : 200**

**Number of Pages in this Booklet : 16**

**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 (C) is the correct response.

**(A) (B) (C) (D)**
- 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.

**विद्यार्थ्यांसाठी महत्वाच्या सूचना**

- परीक्षार्थीनी आपला आसन क्रमांक या पृष्ठवरील वरच्या कोपऱ्यात लिहावा. तसेच आपणांस दिलेल्या उत्तरपत्रिकेचा क्रमांक त्याखाली लिहावा.
- सदर प्रश्नपत्रिकेत **100** बहुपर्यायी प्रश्न आहेत. प्रत्येक प्रश्नास **दोन** गुण आहेत. या प्रश्नपत्रिकेतील **सर्व** प्रश्न सोडविणे अनिवार्य आहे.
- परीक्षा सुरु 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 काळा/निळा करावा.

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

**(A) (B) (C) (D)**
- या प्रश्नपत्रिकेतील प्रश्नांची उत्तरे **ओ.एम.आर. उत्तरपत्रिकेतच दर्शावावीत**. 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 खूप केलेली आढळून आल्यास अथवा असभ्य भाषेचा वापर किंवा इतर गैरमार्गांचा अवलंब केल्यास विद्यार्थ्याला परीक्षेस अपात्र 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.

**MAR - 39223/II—A**

## 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.

- |   |   |
|---|---|
| <p>1. Which of the following military explosives is having the lowest detonation velocity ?</p> <p>(A) Composition C-4</p> <p>(B) Amatol</p> <p>(C) Torpex</p> <p>(D) Tetryl</p> <p>2. Paper making process was introduced around the year 1150 in :</p> <p>(A) Spain      (B) Italy</p> <p>(C) France      (D) Germany</p> <p>3. Evidence of officers of Bank Note Press is relevant under which of the following sections of CrPC ?</p> <p>(A) Section-291</p> <p>(B) Section-292</p> <p>(C) Section-293</p> <p>(D) Section-294</p> | <p>4. The conventional black powder consists of potassium nitrate, charcoal and sulphur in a proportion of :</p> <p>(A) 70 : 10 : 20</p> <p>(B) 85 : 10 : 5</p> <p>(C) 75 : 15 : 10</p> <p>(D) 75 : 10 : 15</p> <p>5. Among the following ectocranial sutures of an adult human skull, which obliterates the last ?</p> <p>(A) Sagittal      (B) Lambdoid</p> <p>(C) Coronal      (D) Basilar</p> <p>6. Loknayak Jaiprakash Narayan National Institute of Criminology and Forensic Science was established in New Delhi in which of the following years ?</p> <p>(A) 1971      (B) 1972</p> <p>(C) 1967      (D) 1974</p> |
|---|---|

7. **Assertion :**

Link method is often coupled with other geometric search method.

**Reason :**

No single crime scene search method is suitable for all types of scene.

- (A) Both Assertion and Reason are true
- (B) Assertion is true but Reason is false
- (C) Assertion is false but Reason is true
- (D) Both Assertion and Reason are false.

8. A cast made of a shoeprint in mud is :

- (A) Positive replica of the impression
- (B) Negative replica of the impression
- (C) Neither negative nor positive impression of the shoe
- (D) Is larger than the shoe.

9. For embalming, chemicals are injected into :

- (A) Femoral artery
- (B) Abdominal cavity
- (C) Chest cavity
- (D) Rectum

10. Match the following :

**List I**

- (a) Ketamine
- (b) Mephedrone
- (c) Phencyclidine
- (d) Methamphetamine

**List II**

- (i) Angel dust
- (ii) Ice
- (iii) Kit Kat
- (iv) Meow Meow

**Codes :**

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

11. Total Station Surveying System (TSSS) is related to which of the following steps of crime scene investigation :

- (A) Searching
- (B) Documentation
- (C) Protection
- (D) Collection of evidence

12. Which of the following features of the hip bone provides a better assessment of sex of a human skeleton ?

- (A) Sub-pubic angle
- (B) Ischial Tuberosity
- (C) Obturator Foramen
- (D) Curvature of Iliac crest

13. Seminal fluid choline originate from the :
- (A) Seminal Vesicle
  - (B) Sertoli's cell
  - (C) Leydig cell
  - (D) Prostrate
14. Bindle and coin envelopes are the example of :
- (A) Primary container
  - (B) Secondary container
  - (C) Tertiary container
  - (D) Quaternary container
15. Sexual arousal through inflicting pain on another person is known as :
- (A) Pyromania
  - (B) Masochism
  - (C) Sadism
  - (D) Triolism
16. "V" pattern in a fire scene indicates :
- (A) Type of fire
  - (B) Point of origin
  - (C) Type of fuel used
  - (D) Extent of fire
17. Hunter Russell syndrome occurs due to chronic exposure of :
- (A) Dimethyl zinc
  - (B) Tetramethyl lead
  - (C) Methyl mercury
  - (D) Methyl nickel
18. Deposition of medical witness is dealt under which of the following sections of CrPC ?
- (A) Section-291
  - (B) Section-292
  - (C) Section-293
  - (D) Section-294
19. IEC in ISO/IEC 17025 : 2017 stands for :
- (A) International Eligibility Certification
  - (B) International Electrotechnical Commission
  - (C) International Efficiency Commission
  - (D) International Efficiency Certification
20. "Time Difference of Arrival", "Time of Arrival (TOA)" and "Enhanced Observed Time Difference (EOTD)" are the approaches for :
- (A) Estimation of location of cellphones
  - (B) Network protocols
  - (C) Note making at scene of crime
  - (D) Crime Scene Documentation

21. Anti-H Section is prepared from :
- (A) Dolichos biflorus seeds
  - (B) Semecarpus anacardium seeds
  - (C) Ulex europaeus seeds
  - (D) Ricinus communis seeds
22. Who among the following is called as the father of fingerprint science ?
- (A) Henery (B) Herschell
  - (C) Galton (D) Locard
23. The fingerprint pattern may be damaged permanently in persons with cases of :
- (A) Eczema (B) Scalds
  - (C) Leprosy (D) Scabies
24. To obtain maximum detail while photographing 3-dimensional footwear print impression :
- (A) No special lighting arrangements are used
  - (B) A flash light kept vertically above footprint is used
  - (C) Oblique light should always be used
  - (D) Ultraviolet light kept vertically above the impression is used.
25. Which of the following is the earliest sign of death ?
- (A) Loss of skin elasticity
  - (B) Corneal clouding
  - (C) Cooling of body
  - (D) Postmortem lividity
26. Which of the following is a liquid explosive ?
- (A) RDX (B) DETN
  - (C) HMX (D) TATP
27. Grazing angle in case of oblique light examination of documents pertains to :
- (A) 10°–15° (B) 20°–25°
  - (C) 25°–30° (D) 30°–35°
28. If the left iris and right iris are combined to make a biometric system, it is better known as :
- (A) Multi-samples biometric system
  - (B) Multi-sensors biometric system
  - (C) Multi-instances biometric system
  - (D) Multi-representation biometric system

29. Examination of cervix of a rape victim is best done with :
- (A) Stereoscope
  - (B) Colposcope
  - (C) Stethoscope
  - (D) Fetoscope
30. A composite fingerprint pattern, consisting of two interlocked loops, in which the coursing of the ridges when traced from the core emerge on the same side of the digit is known as :
- (A) Central Pocket Loop
  - (B) Lateral Pocket Loop
  - (C) Twin Loop
  - (D) Accidental
31. A solution of glacial acetic acid and hydrogen peroxide is useful for restoration of erased number from which of the following surfaces ?
- (A) Cast Iron
  - (B) Stainless steel
  - (C) Lead
  - (D) Zinc alloys
32. Which of the following shutter speed is the fastest ?
- (A) 1/2000
  - (B) 1/1500
  - (C) 1/1000
  - (D) 1/500
33. The epidermal ridges of the palms, soles, fingers and toes develop in human foetus during :
- (A) The 1st intrauterine month
  - (B) The 3rd and 4th intrauterine month
  - (C) The 9th intrauterine month
  - (D) 7th and 8th intrauterine month
34. Which of the following is a type of molecular mass spectrometry ?
- (A) ICP-MS
  - (B) LM-MS
  - (C) LC-MS
  - (D) GD-MS
35. The most sensitive optical detector coupled with high performance liquid chromatographic system is :
- (A) Ultraviolet detector
  - (B) Photodiode array detector
  - (C) Fluorescence detector
  - (D) Mass detector
36. Which of the following bones can be classified as a pneumatic bone ?
- (A) Parietal bone
  - (B) Maxilla
  - (C) Occipital bone
  - (D) Scapula

37. **Assertion :**

Works where concrete is subjected to high temperatures, frost and acidic action, high alumina cement is used.

**Reason :**

The compressive strength of high alumina cement is very low.

- (A) Both Assertion and Reason are true
- (B) Assertion is true but Reason is false
- (C) Assertion is false but Reason is true
- (D) Both Assertion and Reason are false.
38. Which of the following statements is not true as far as ink composition is concerned ?
- (A) Fibre tip inks are usually water or xylene based
- (B) Ballpoint pen inks consist of synthetic dyes in various solvents
- (C) Fountain pen inks may be iron-gallotannate or aqueous synthetic
- (D) The rolling marker pen is water based, contains inorganic metal oxides.

39. Which of the following is *not* a detector for Gas Chromatography ?
- (A) Electron Capture
- (B) Electrospray
- (C) Thermal Conductivity
- (D) Flame Ionization Detector
40. The value of subpubic angle in the pelvis of female skeleton ranges from :
- (A) 20°–30° (B) 35°–45°
- (C) 45°–50° (D) 80°–85°
41. Length of skid mark is :
- (A) Directly proportional to the velocity
- (B) Inversely proportional to the velocity
- (C) Directly proportional to the square root of velocity
- (D) Inversely proportional to the square root of velocity
42. Kovats retention index is used in :
- (A) Gas chromatography
- (B) High performance liquid chromatography
- (C) Capillary electrophoresis
- (D) Paper chromatography



43. Musket are :
- (A) Smooth bore shoulder weapon  
 (B) Smooth bore hand weapon  
 (C) Rifled shoulder weapon  
 (D) Rifled hand weapon
44. Which of the following gaseous mixture has the highest flame temperature ?
- (A) Acetylene + Oxygen  
 (B) Acetylene + Nitrous oxide  
 (C) Acetylene + Air  
 (D) Hydrogen + Nitrous oxide
45. Which of the following is *correct* related to the effect of Rifling ?
- (i) Increase the stability  
 (ii) Increase the accuracy  
 (iii) Increase the effective range  
 (iv) Decrease the effective range
- (A) (i) & (ii) are correct  
 (B) (i) & (iii) are correct  
 (C) (i), (ii) & (iii) are correct  
 (D) (i), (ii), (iii) & (iv) are correct.
46. Which of the following is *not* the advantage of diode array spectrophotometers ?
- (A) Simultaneous multi-wavelength measurement  
 (B) Fast scan speed  
 (C) Wavelength precision  
 (D) Low signal to noise ratio
47. Smokeless Powder came into existence after :
- (A) 1800 (B) 1886  
 (C) 1900 (D) 1950
48. Which of the following slugs is having the deep depression in the base which places the centre of mass very near the tip of the slug ?
- (A) Sabot slug  
 (B) Foster slug  
 (C) Brenneke slug  
 (D) Halton slug
49. When neutron is transformed into a proton during the nuclear transformation, which of the following is produced ?
- (A) Gamma rays  
 (B) Alpha rays  
 (C) Positive beta rays  
 (D) Negative beta rays
50. MMAN, EGM, HTMAN and MEAN are the examples of :
- (A) Detonators (B) Oxidizers  
 (C) Sensitizers (D) Stabilizers
51. Core of the Bullet is made up of :
- (A) Lead (B) Aluminium  
 (C) Cobalt (D) Nickel

52. In identification and DNA analysis of biological evidence using FTA method :
- (A) The DNA stays on the paper
  - (B) The DNA is eluted off the paper
  - (C) The DNA gets extracted
  - (D) The DNA gets denatured
53. Synergism takes place when :
- (A) A person is addicted to drugs
  - (B) A person takes more dose of drug to get the same effect
  - (C) A drug is metabolized into two different substances
  - (D) Two different drugs are taken at a same time and their effect is magnified.
54. Which one of the following is a non-distilled alcoholic beverage ?
- (A) Sherry      (B) Gin
  - (C) Wine        (D) Rum
55. Which matrix is best suited to determine the exposure to maternal substance of abuse during gestation ?
- (A) Fetal blood
  - (B) Fetal breath
  - (C) Meconium
  - (D) Fetal urine
56. Mini Satellites are :
- (A) Short non-coding repetitive sequences present throughout the chromosome
  - (B) All regions of chromosomes after secondary constriction
  - (C) 10-40 bp sized short sequences within the genes
  - (D) Short coding repetitive regions on the eukaryotic genome.
57. **Assertion :**  
The "maximum effective range" of bullet is often easy to quantify.  
**Reason :**  
It depends on various factors such as bullet weight, velocity, bullet diameter and bullet placement.
- (A) Both Assertion and Reason are true
  - (B) Assertion is true but Reason is false
  - (C) Assertion is false but Reason is true
  - (D) Both Assertion and Reason are false.
58. In seminal fluid, the amount of spermatozoa is :
- (A) 3 thousand spermatozoa per ml
  - (B) 50 billion spermatozoa per ounce
  - (C) 25 trillion spermatozoa per pint
  - (D) 100 million spermatozoa per ml
59. Which of the following Articles of Constitution of India prohibits a child below the age of fourteen years to work in any factory ?
- (A) Article 24
  - (B) Article 23
  - (C) Article 22
  - (D) Article 21

60. Which of the following materials is not used for lifting tool marks from a surface ?  
 (A) Woods metal  
 (B) Dental stone  
 (C) Cellulose acetate  
 (D) Sulphur
61. ASTM D-96, ASTM D-207, ASTM D-1086, ASTM D-1298 are the test to measure the different properties of :  
 (A) Petroleum Products  
 (B) Alcoholic Beverages  
 (C) Organic Acids  
 (D) Columns used in GC
62. Match the following :  
**List I (Inventor)**  
 (a) Kohlrausch  
 (b) Shapiro  
 (c) Svensson  
 (d) Grabar  
**List II (Technique)**  
 (i) Isoelectric focusing  
 (ii) Immunoelectrophoresis  
 (iii) Isotachophoresis  
 (iv) SDS PAGE  
**Codes :**  
 (a) (b) (c) (d)  
 (A) (ii) (iv) (iii) (i)  
 (B) (iv) (iii) (i) (ii)  
 (C) (iii) (iv) (i) (ii)  
 (D) (i) (iii) (ii) (iv)
63. DRUGFIRE is an automated search system for :  
 (A) Firearms evidence  
 (B) Narcotic drugs  
 (C) Psychotropic substances  
 (D) Medicinal drugs
64. Bank Identification Number (BIN) of a credit card is represented by :  
 (A) The first number  
 (B) The first four numbers  
 (C) The first six numbers  
 (D) The first three numbers
65. If a polarizer and analyzer are placed perpendicular to each other :  
 (A) The polarised light will pass through  
 (B) Alternate dark and bright band will be observed  
 (C) Only a bright halo will be observed  
 (D) No light will penetrate
66. Blobbing can be found in writings written with :  
 (A) Fountain pen  
 (B) Ball point pen  
 (C) Sketch pen  
 (D) Roller pen
67. Which of the following methods is considered as destructive technique for ink analysis ?  
 (A) Lighting techniques  
 (B) Chromatography  
 (C) IR Spectroscopy  
 (D) Raman Spectroscopy

68. Synthesis of DNA to mRNA is known as :
- (A) Translation  
(B) Transportation  
(C) Fertilization  
(D) Transcription
69. Which of the following statements is *correct* for formant frequency of vowel ?
- (A) F1 will be higher in low vowels  
(B) F1 will be lower in low vowels  
(C) F1 will be higher in high vowels  
(D) F1 will be lower in schwa than in high vowels
70. In case of determining sequence of stroke over folds, which of the following is an indicative that the ink line is pre-existing and fold was made subsequently :
- (A) Broadening of ink line  
(B) Feathering of ink around fold  
(C) Clean break of ink line  
(D) Feathering of ink around line
71. Trichology is the study of :
- (A) Bones (B) Nails  
(C) Hair (D) Ear prints
72. The trade name of nylon 6 is :
- (A) Amilan (B) Nylfrance  
(C) Perlone (D) ICI-nylon
73. Which of the following statements is not *true* ?
- (A) An individual's handwriting may show variation as a result of stress or illness  
(B) The handwriting of an individual shows natural variation  
(C) The handwriting of an individual is unaffected by advancing years  
(D) The influence of alcohol and drugs may cause variation in handwriting
74. The body hair of human foetus is :
- (A) Non-medullated  
(B) Non-pigmented  
(C) Non-medullated and non-pigmented  
(D) Medullated and pigmented
75. What is the characteristic of milk that replaces colostrum ?
- (A) Absence of trypsin inhibitor  
(B) Presence of large phagocytic cells  
(C) Contains large fat globules  
(D) Presence of casein and lactose
76. Which of the following drugs of abuse is known as Liquid Gold ?
- (A) Diazepam  
(B) Thiopental  
(C) Amphetamine  
(D) Lysergic acid diethylamide

77. The MFT (Master File Table) record header always starts with the identifier :
- (A) FILE (B) NULL  
(C) ARRAY (D) CLUSTER
78. Which of the following is *not* a trade name of Aluminum phosphide ?
- (A) Aphos  
(B) Phosphume  
(C) Bidphos  
(D) Dichlorprop
79. PGM-I Enzyme 1-1 type is characterized by :
- (A) *a* and *b* bands  
(B) *a* and *c* bands  
(C) *a* and *d* bands  
(D) *a*, *b*, *c* and *d* bands
80. Nalorphine is an antidote for which of the following poisons ?
- (A) Opium  
(B) Cocaine  
(C) Dhatura  
(D) Strychnine
81. Gunzberg's test is to ascertain the presence of :
- (A) Saliva  
(B) Vomit  
(C) Urine  
(D) Faecal matter
82. Which of the following poisons could be the cause of velvety appearance of stomach during autopsy ?
- (A) Arsenic  
(B) Lead  
(C) Phenobarbital  
(D) Abrus precatorius
83. Which of the following is correct for the disadvantages of RFLP technique ?
- I. Takes a lot of time  
II. Requires large intact sample  
III. Produces large (30,000 BP) DNA strand.
- (A) I & II are correct  
(B) I & III are correct  
(C) II & III are correct  
(D) I, II & III are correct
84. The process coning and quartering is used in the evaluation of :
- (A) Minerals  
(B) Glass  
(C) Soil  
(D) Paint
85. Which of the following is *not* a class characteristics of tool marks ?
- (A) Direction of travel of the tool  
(B) Shape of the tool mark  
(C) Size of the tool mark  
(D) Imperfections on the surfaces

86. Pedologist are the scientist who study :
- (A) Glass (B) Dyes  
(C) Soil (D) Paint
87. Most of the automatic method of species identification uses which of the following as a feature ?
- (A) Hertz frequency cepstral coefficient  
(B) Formant frequency cepstral coefficient  
(C) Mel frequency cepstral coefficient  
(D) Normal frequency cepstral coefficient
88. Proteins of plant origin (obtained from seed extracts) which behaves like antibody commonly termed as :
- (A) Agglutinogens  
(B) Lectins  
(C) Antisera  
(D) Plasma protein
89. The glass that is made stronger than the ordinary glass by introducing stress through rapid heating and cooling of glass surface is known as :
- (A) Laminated glass  
(B) Plasticized glass  
(C) Tempered glass  
(D) Insulated glass

90. Match the common additives given in List-I with that of their action in List-II used in petro product :

**List-I**

- (a) Aromatic amino and hindered phenols  
(b) Carboxylic acid and carboxylates  
(c) Polyglycol derivatives  
(d) Surfactants

**List-II**

- (i) Demulsifiers  
(ii) Oxidation inhibitors  
(iii) Anti-icing additive  
(iv) Corrosion inhibitors

**Codes :**

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

91. The objective of a medicolegal autopsy does not include :
- (A) Identify the accused  
(B) Identification of the victim  
(C) Determine time since death  
(D) Determine cause of death

92. Simon sign is seen in mainly which of the following ?  
(A) Forcible rape  
(B) Infanticide  
(C) Complete hanging  
(D) Throttling
93. The time taken by driver to apply the break after he perceived it is necessary, is called as :  
(A) Reaction time  
(B) Response time  
(C) Braking time  
(D) Friction time
94. Walker test is used to trace :  
(A) Nitrite  
(B) Nitrate  
(C) Sulphate  
(D) Carbonate
95. Indentations are :  
(A) Three-dimensional contact pattern  
(B) Two-dimensional contact pattern  
(C) Single-dimensional contact pattern  
(D) Mostly two-dimensional and rarely three-dimensional
96. The fluorescent group in a molecule is called as :  
(A) Photophore  
(B) Fluorophore  
(C) Chromophore  
(D) Quantum yield
97. In the life cycle of *Musca domestica*, how many times its maggot molts ?  
(A) 2 (B) 4  
(C) 1 (D) 3
98. Moh's scale is used to measure :  
(A) Thickness  
(B) Hardness  
(C) Conductivity  
(D) Density
99. Which of the following is a microscopic crime scene ?  
(A) Wound on dead body  
(B) A small room where alleged murder has been taken place  
(C) A riverbed where dead body was found  
(D) Place of hit-and-run case
100. Central Forensic Science Laboratory, Guwahati was started in the year :  
(A) 1971 (B) 1981  
(C) 1991 (D) 2011

**MAR - 39223/II—A**

**ROUGH WORK**