

(DO NOT OPEN THIS QUESTION BOOKLET BEFORE TIME OR UNTIL YOU ARE ASKED TO DO SO)

A

PHD/URS-EE-DEC-2022  
SUBJECT : Forensic Science

SET-Y

10001

Sr. No. ....

Time : 1½ Hours

Max. Marks : 100

Total Questions : 100

Roll No. (in figures) \_\_\_\_\_ (in words) \_\_\_\_\_

Name \_\_\_\_\_ Date of Birth \_\_\_\_\_

Father's Name \_\_\_\_\_ Mother's Name \_\_\_\_\_

Date of Examination \_\_\_\_\_

\_\_\_\_\_  
(Signature of the Candidate)

\_\_\_\_\_  
(Signature of the Invigilator)

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6. **There will be no negative marking. Each correct answer will be awarded one full mark. Cutting, erasing, overwriting and more than one answer in OMR Answer-Sheet will be treated as incorrect answer.**
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PHD/URS-EE-2022/(Forensic Science)(SET-Y)/(A)

SEAL

1. National crime record Bureau of India was founded in the year :
  - (1) 1986
  - (2) 1982
  - (3) 1950
  - (4) 1996
  
2. Which of the following is the correct sequence for examination of Forensic evidence :
  - (1) Recognition, identification, individualization and reconstruction.
  - (2) Recognition, individualization, identification, and reconstruction
  - (3) Indentification, recognition, individualization and reconstruction
  - (4) Individualization, recognition, identification and reconstruction.
  
3. In India periodical data on crime, is compiled and published by :
  - (1) National institute of Social defence
  - (2) National Crime Records Bureau
  - (3) Bureau of Police Research and Development
  - (4) National Institute of Criminology and Forensic Sciences
  
4. Probation is :
  - (1) Determinate sentencing
  - (2) Indeterminate sentencing
  - (3) Suspended sentenceing
  - (4) Custodial sentencing
  
5. The commission of crime by habitual offenders means :
  - (1) Vandalism
  - (2) Recidivism
  - (3) Terrorism
  - (4) Communism

6. Who is considered as the Father of Criminology ?
- (1) Adler
  - (2) Sutherland
  - (3) Lombroso
  - (4) Edwin Becker
7. According to Indian evidence act, Leading questions can be asked to a witness in :
- (1) Examination in Chief
  - (2) Cross examination
  - (3) Re-examination
  - (4) Only in Chief examination and re-examination.
8. Which of the following section of IEA -Act 1872 describes 'Dying declaration' ?
- |                |                |
|----------------|----------------|
| (1) Section 45 | (2) Section 39 |
| (3) Section 32 | (4) Section 47 |
9. Definition of sexual assaults is in :
- (1) Section 376 of IPC
  - (2) Section 354 of IPC
  - (3) Section 352 of IPC
  - (4) Section 350 of IPC
10. On the basis of matching of striations on evidence and test bullets, an expert opines that the evidence bullet has been fired from the suspected fire arm. The basis of this opinion lies in :
- (1) Locard's Principle of exchange
  - (2) Law of probability
  - (3) Law of comparison
  - (4) Principle of Analysis

11. What is the first step in processing a crime scene ?
- (1) Securing the perimeter
  - (2) Sketching
  - (3) Photography
  - (4) Collecting evidence
12. What should be done when we open evidence in the lab ?
- (1) Examine the evidence
  - (2) Check and mark the evidence
  - (3) Store the evidence
  - (4) Mark the evidence
13. Monday in a family, there are husband-wife, two sons and two daughters. All the ladies were invited to a dinner. Both sons went out to play. Husband did not return from office. Who was at home ?
- (1) Only wife was at home.
  - (2) Only sons were at home.
  - (3) Nobody was home.
  - (4) All ladies were at home.
14. Which of the following disease affects handwriting of an individual ?
- (1) Thalassemia
  - (2) Chronic Malaria
  - (3) Parkinsonism
  - (4) Chronic Leukaemia
15. The Indian Arms Act was enforced in :
- |          |          |
|----------|----------|
| (1) 1959 | (2) 1964 |
| (3) 1955 | (4) 1961 |

16. Another name of Cyclotol is :
- (1) RDX+PETN
  - (2) TNT+PETN
  - (3) RDX+TNT
  - (4) Picric acid + TNT
17. One of the following is *not* the component of Kastle-Meyer test :
- (1) Potassium hydroxide
  - (2) Zinc Dust
  - (3) Phelophthalein
  - (4) Glacial acid
18. Confirmation of menstrual blood stain is done by the following method :
- (1) Fibrin degradation product (FDP)
  - (2) Protein marker
  - (3) Restriction enzyme
  - (4) Isozyme marker
19. Derringers are single shot pistols which possess :
- (1) Single barrel
  - (2) Multiple barrels
  - (3) Choke in the barrel
  - (4) Magzine
20. The following typing is used to determine the both sex from a biological specimen :
- (1) Mt.STR typing
  - (2) Amelogenin typing
  - (3) PCR tying
  - (4) Y-STR tying

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21. The richest concentration of choline in the spermatic fluid was determined by :
- (1) Jhonston (1896)
  - (2) Florence (1886)
  - (3) Fletcher etal (1935)
  - (4) Davis and Wilson (1974)
22. Bevelling of a wound is seen in the following injuries :
- (1) Contusion
  - (2) Incised wound
  - (3) Laceration
  - (4) Abrasion
23. The first man to introduce Fingerprint testing in criminal investigation is :
- (1) William Herschel
  - (2) Francis Galton and Edward Henry
  - (3) Thomas Edison
  - (4) William James
24. Preservation of foot prints on snow can be done by :
- (1) Plaster of Paris cast
  - (2) Sulphur casting
  - (3) Tracing
  - (4) Wax casting
25. The bore of the 12 bore gun is :
- |           |           |
|-----------|-----------|
| (1) 0.731 | (2) 0.727 |
| (3) 0.723 | (4) 0.729 |

P. T. O.

26. Optical components in UV spectrometer are made up of :
- (1) Plastic
  - (2) Sodium-Halide
  - (3) Quartz
  - (4) Glass
27. Hollow cathode lamp (HCL) is used in the following :
- (1) Infra red spectrometer
  - (2) Atomic emission spectrometer
  - (3) Atomic absorption spectrometer
  - (4) X-ray Fluorescence spectrometer.
28. The following method is used for determining the age of an ink by tracking the degradation of certain dyes :
- (1) High performance liquid chromatography(HPLC)
  - (2) Thin layer chromatography (TLC)
  - (3) Laser desorption mass spectrometry (LDMS)
  - (4) Gas chromatography (GC).
29. How to preserve question documents in the lab ?
- (1) Keep them in the soft chamber
  - (2) Keep it in hard folder without folding
  - (3) Keep them in a non-humid chamber
  - (4) Keep them by folding in Envelop
30. Prepared TLC Plates are activated at a temperature of :
- (1) 110 degree C
  - (2) 100 degree C
  - (3) 120 degree C
  - (4) 130 degree C

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31. The level of toxicity of Dhatura plant on the increasing level is :
- (1) Leaf, Root, Fruit, Seeds
  - (2) Seeds, Leaf, Root, Fruit
  - (3) Fruit, Root, Seeds, Leaf
  - (4) Root, Seeds, Fruits, Leaf
32. B. J. Culliford was a Forensic Scientist who has worked in the field of :
- (1) Forensic Toxicology
  - (2) Forensic Ballistics
  - (3) Forensic Serology
  - (4) Forensic Physics
33. The modified version of the organic extraction method that separates epithelial and sperm cells from vaginal swab is :
- (1) Reflux extraction
  - (2) Soxhlet extraction
  - (3) Differential extraction
  - (4) Microwave assisted extraction.
34. The Correct explanation for SWGDRUG is :
- (1) Rapid drug testing kit
  - (2) An international committee that set standards for the analysis of drugs
  - (3) The united national organization with the responsibility for arresting drug traffickers
  - (4) European Agency for early warning for new drugs



35. Taggants in ink are :
- (1) Pigments
  - (2) Vehicle
  - (3) Binders
  - (4) Compounds used as markers to identify ink
36. Sodium -Halide bromide cell window are used in :
- (1) AAS
  - (2) Raman spectrometry
  - (3) UV spectrometry
  - (4) IR spectrometry
37. Bertrand lens is a part of the following microscope :
- (1) Steriomicroscope
  - (2) Comparison microscope
  - (3) Polarising microscope
  - (4) Fluorescence microscope
38. Which of the following factor is *not* assumed by Hardy-Weinberg equilibrium ?
- (1) No migration
  - (2) No mutation
  - (3) Mating in non-random
  - (4) Population is infinitely large
39. Which is the main objective of research ?
- (1) To review the literature
  - (2) To summarise what is already known
  - (3) To get an academic degree
  - (4) To discover new facts or to make fresh interpretation of known facts

40. In Asthenospermic individual :
- (1) The sperm count is below the normal number
  - (2) The sperms are dead
  - (3) No sperm is present.
  - (4) Sperms are non-motile
41. Hackle marks are observed in Forensic cases on :
- (1) Wood
  - (2) Steel
  - (3) Glass
  - (4) Paint
42. In order to ascertain the cause of death due to drowning, which of the following needs to be collected ?
- (1) Hair
  - (2) Blood
  - (3) Bone Marrow
  - (4) Epithelial cells
43. Muzzle imprint is found in cases of :
- (1) Close range
  - (2) Contact shot
  - (3) Near contact shot
  - (4) Long range
44. Embedding of unburnt or semi-burnt powder particles inside skin or at target in a fire arm from close Range is called as :
- (1) Scorching
  - (2) Blackening
  - (3) Tattooing
  - (4) Burning
45. Which of the following is *not* present in cartridge cases :
- (1) Breech face marks
  - (2) Extractor marks
  - (3) Ejector marks
  - (4) Rifling marks

46. Rave drug is :
- |              |                     |
|--------------|---------------------|
| (1) Cannabis | (2) Cocaine         |
| (3) Heroin   | (4) Methamphetamine |
47. All are alkaloids except :
- |                   |              |
|-------------------|--------------|
| (1) Morphine      | (2) Atropine |
| (3) Physostigmine | (4) Abrine   |
48. Brentamine Fast Blue B is used to test :
- |                    |                    |
|--------------------|--------------------|
| (1) Seminal stains | (2) Vaginal stains |
| (3) Saliva stains  | (4) Blood stains   |
49. P-30 is secreted by :
- |                       |
|-----------------------|
| (1) Salivary glands   |
| (2) Parotid glands    |
| (3) Pancreatic glands |
| (4) Prostrate glands  |
50. The presence of maggots at postmortem indicates:
- |                          |
|--------------------------|
| (1) Cause of death       |
| (2) Mode of death        |
| (3) Duration since death |
| (4) Manner of death      |
51. The fluorescence examination of the seminal stains gives fluorescence due to the presence of :
- |                   |               |
|-------------------|---------------|
| (1) Melanin       | (2) Flavin    |
| (3) Phaco-Melanin | (4) Eurobilin |

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52. Among these which is *not* a red cell blood group system ?
- |           |          |
|-----------|----------|
| (1) ABO   | (2) Kell |
| (3) Duffy | (4) HLA  |
53. "Scott test" is used for the detection of :
- |              |              |
|--------------|--------------|
| (1) Morphine | (2) Heroine  |
| (3) Cocaine  | (4) Cannabis |
54. C4 explosive means :
- (1) RDX with plastic binder
  - (2) TNT with plastic binder
  - (3) PETN with plastic binder
  - (4) Dynamite sticks
55. Which of the following individuals is known as the 'Father of Forensic Toxicology' ?
- |                    |                    |
|--------------------|--------------------|
| (1) Mathieu Orfila | (2) Calvin Goddard |
| (3) R.A.Riess      | (4) Edmond Locard  |
56. A scalp hair specimen with significant root sheath material would indicate that the hair originated from which phase of growth ?
- |             |              |
|-------------|--------------|
| (1) Anagen  | (2) Collagen |
| (3) Catagen | (4) Telogen  |
57. Which of the following best defines rigor mortis ?
- (1) This is the body cooling after death
  - (2) Livor mortis
  - (3) Postmortem rigidity
  - (4) Postmortem medical examination

58. Tele Forensic Technology is used in :
- (1) Voice identification
  - (2) Crime Scene management
  - (3) Lie detection
  - (4) Brain Mapping
59. Based on a mathematical calculation by Victor Balthazard, the probability of two individuals having the same fingerprints is one out of :
- (1)  $1 \times 10$  to the 30th power
  - (2)  $1 \times 10$  to the 60th power
  - (3)  $1 \times 10$  to the 100th power
  - (4)  $1 \times 10$  to the 90th power
60. The DNA evidence database is called :
- |           |           |
|-----------|-----------|
| (1) CODNA | (2) CODIS |
| (3) CODIA | (4) CCDNA |
61. In identification and DNA analysis of biological evidence using FTA method :
- (1) The DNA stays on the paper
  - (2) The DNA is eluted off the paper
  - (3) The DNA gets extracted
  - (4) The DNA is denatured
62. Hash value is used by the Forensic experts to :
- (1) To authenticate text data
  - (2) To authenticate images in the given file
  - (3) To authenticate videos and audio files
  - (4) To authenticate digital data

63. Mitochondrial DNA analysis is best suited for :
- (1) Samples in which the father or grandfather's DNA is readily available for comparison.
  - (2) Analysis requiring greater discriminatory power than STR.
  - (3) Samples for which nuclear DNA typing is not possible.
  - (4) Analysis in which only a minute quantity of DNA material is available.
64. The modified color test "Duquenois-Levine" is used for the identification of :
- |               |             |
|---------------|-------------|
| (1) Marijuana | (2) Heroin  |
| (3) Peyote    | (4) Cocaine |
65. Among the following white powders which is called "Angel Dust" ?
- |               |         |
|---------------|---------|
| (1) LSD       | (2) THC |
| (3) Mescaline | (4) PCP |
66. Select the chemical name of the drug among the following that is commonly known as 'MEOW-meow' ?
- (1) Mephedrone
  - (2) Methcathinone
  - (3) Methamphetamine
  - (4) Mescaline
67. Among the following which is the non-destructive instrumental method for determining crystalline structure of chemical compound :
- (1) IR spectroscopy
  - (2) Pyrolysis gas chromatography
  - (3) Emission Spectrography
  - (4) X-ray diffraction

68. Among the following techniques which gives more conclusive results for gun short residue detection in shooting cases :
- (1) Neutron Activation Analysis (NAA)
  - (2) Atomic Absorption Spectrometry (AAS)
  - (3) Inductively Coupled Plasma (ICP)
  - (4) Scanning electron Microscopy with energy dispersive analysis
69. In Scanning electron microscope (SEM), secondary electrons :
- (1) Are emitted by the nucleus of the various elements when the object is struck by a beam of x-rays
  - (2) Are emitted when a beam of primary electrons strike the object.
  - (3) Strike the object and then reflect from the surface.
  - (4) Strike the object releasing other electron
70. Among the following techniques which provides unique fingerprint of a chemical structure :
- (1) IR spectrometry
  - (2) UV spectrometry
  - (3) NMR spectroscopy
  - (4) Visible spectroscopy
71. Major differences between GC and HPLC is that :
- (1) GC has a liquid mobile
  - (2) GC uses columns to hold the mobile phase, whereas HPLC does not
  - (3) GC columns are heated, whereas HPLC columns are kept at room temperature
  - (4) HPLC always uses atleast two liquids in its stationary phase

72. Which of the following extraction method is most frequently employed for extracting Pesticides from the biological material received in toxicological section of the lab ?
- (1) Dry ashing method
  - (2) Wet digestion method
  - (3) Steam distillation method
  - (4) Solvent extraction method
73. Which part of the sperm contains DNA ?
- (1) Tail
  - (2) Head
  - (3) Neck
  - (4) End piece of the tail only
74. A bullet fired from a gun is not released, it is ejected out with the subsequent shot. It is known as :
- (1) Dumdum bullet
  - (2) Rocketing bullet
  - (3) Ricochet bullet
  - (4) Tandem bullet
75. Disease that permanently alters the finger prints of an individual is :
- (1) Tuberculosis
  - (2) Leprosy
  - (3) Diabetes
  - (4) Dermatitis
76. Pearson's formula is used for :
- (1) Cephalic index determination
  - (2) Stature determination
  - (3) Race determination
  - (4) Age determination



77. Holograph documents pertain to which of the following ?
- (1) A document type written and signed by a person
  - (2) A document written by one person and signed by the other
  - (3) A document written and signed by one and the same person
  - (4) A document signed by a forger
78. Medullary index of human hair is :
- (1) Less than  $1/3$
  - (2) More than  $1/2$  but less than  $3/4$
  - (3) More than  $1/3$  but less than  $1/2$
  - (4) More than  $3/4$
79. What is studied in Forensic Palynology ?
- |                                |                        |
|--------------------------------|------------------------|
| (1) Fossilised micro-organisms | (2) Pollens and spores |
| (3) Soils                      | (4) Dust               |
80. Disguise in relation to handwriting examination is :
- (1) Duplicate another's writing
  - (2) Simulation of another's writing
  - (3) Deliberate effort to alter the discriminating elements of one's own writing
  - (4) Generate or produce with feet/traced forgery
81. Two inks of similar shade in visible light can be differentiated by using :
- (1) Comparison microscope
  - (2) Stereozoom microscope
  - (3) Scanning electrom microscope
  - (4) Video spectral comparator

- A
- A
82. Which of the following types of biological evidence contains haploid cells :
- (1) Hair (2) Blood  
(3) Sperm (4) Saliva.
83. The order of steps in PCR cycling is :
- (1) Annealing, denaturation, and extension  
(2) Denaturation, annealing and extension  
(3) Extension,denaturation and annealing  
(4) Extension, annealing and denaturation
84. Which of the following is *not* a regenerated fibre ?
- (1) Rayon (2) Acetate  
(3) Nylon (4) Triacetate
85. The most reliable criteria in Gustafson's method of identification from teeth is:
- (1) Cementum apposition  
(2) Transparency of root  
(3) Attrition  
(4) Root resorption
86. This is used in Molotov Cocktail :
- (1) Arsenic (2) Gasoline  
(3) Phosphorous (4) Magnesium
87. "Speedballs" is a combination of Heroin and :
- (1) Cocaine  
(2) Cannabis  
(3) Marijuana  
(4) Chlorpromazine

88. Copy prepared by superimposing the document is called :
- (1) Simulated forgery
  - (2) Traced forgery
  - (3) Free hand forgery
  - (4) Assymetrical forgery
89. What do you mean by Ambidextrous ?
- (1) A person who writes with right hand
  - (2) A person who writes with left hand
  - (3) A person who writes with both hand with equal fluency
  - (4) A person who writes with feet and mouth
90. The other name for invisible is :
- (1) Concealed ink
  - (2) Secret ink
  - (3) Sympathetic ink
  - (4) Both (2) and (3)
91. Identify the correct sequence of the closure of skull sutures :
- (1) Saggital, Temporal, Metopic, Basal
  - (2) Temporal, Basal, Metopic, Sagittal
  - (3) Basal, Temporal, Metopic, Saggital
  - (4) Metopic, Basal, Sagittal, Temporal
92. Which of the following is depicted by the master pattern of a person's handwriting ?
- (1) Forgery in the writing
  - (2) Copy book form of the writing
  - (3) Amount of tremors
  - (4) Range of natural variations in the writing

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93. Grabber marks may be found in which of the following ?
- (1) Type written document
  - (2) Photocopied document
  - (3) Carbon copied document
  - (4) Printed document
94. Which of the following features may indicate towards forged signature ?
- (1) Writing strokes with tapered endings
  - (2) Writing strokes with unusual pen lifts
  - (3) Writing strokes with tapered initials
  - (4) Writing strokes with tapered starts and endings
95. Among these which is considered responsible for individual characteristics in photocopied document examination ?
- (1) The font characteristics
  - (2) Accidental marks of the drum
  - (3) Paper composition
  - (4) Toner constituents
96. Corroborative evidence is :
- (1) Evidence that associates an individual with another individual
  - (2) Evidence that links an individual with a particular location
  - (3) Evidence that refutes other evidence
  - (4) Evidence that supports other evidence
97. The DNA fingerprint pattern of a child is :
- (1) Exactly similar to that of both of the parents
  - (2) 100% similar to the father's DNA print
  - (3) 100 % Similar to the mother's DNA print
  - (4) 50% bands similar to father and rest similar to mother

98. In 10 digit classification of fingerprints, a person having whorls pattern in all the ten fingers will be classified under which of the following ?
- (1) 0/0 (2) 32/32  
(3) 16/16 (4) 8/0
99. Shovel shaped teeth are seen in :
- (1) Africans (2) Bushmen  
(3) Caucasoids (4) Mongoloids
100. Polygraph does not detect :
- (1) GSR (2) Blood pressure  
(3) P-300 (4) Respiration

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**B**

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SEAL

1. Major differences between GC and HPLC is that :
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- |          |                                |
|----------|--------------------------------|
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| (3) Neck | (4) End piece of the tail only |
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- |                  |                |
|------------------|----------------|
| (1) Tuberculosis | (2) Leprosy    |
| (3) Diabetes     | (4) Dermatitis |

6. Pearson's formula is used for :

- (1) Cephalic index determination
- (2) Stature determination
- (3) Race determination
- (4) Age determination

7. Holograph documents pertain to which of the following ?

- (1) A document type written and signed by a person
- (2) A document written by one person and signed by the other
- (3) A document written and signed by one and the same person
- (4) A document signed by a forger

8. Medullary index of human hair is :

- (1) Less than  $1/3$
- (2) More than  $1/2$  but less than  $3/4$
- (3) More than  $1/3$  but less than  $1/2$
- (4) More than  $3/4$

9. What is studied in Forensic Palynology ?

- |                                |                        |
|--------------------------------|------------------------|
| (1) Fossilised micro-organisms | (2) Pollens and spores |
| (3) Soils                      | (4) Dust               |

10. Disguise in relation to handwriting examination is :

- (1) Duplicate another's writing
- (2) Simulation of another's writing
- (3) Deliberate effort to alter the discriminating elements of one's own writing
- (4) Generate or produce with feet/traced forgery



11. The fluorescence examination of the seminal stains gives fluorescence due to the presence of :
- (1) Melanin (2) Flavin  
(3) Phaco-Melanin (4) Eurobilin
12. Among these which is *not* a red cell blood group system ?
- (1) ABO (2) Kell  
(3) Duffy (4) HLA
13. "Scott test" is used for the detection of :
- (1) Morphine (2) Heroine  
(3) Cocaine (4) Cannabis
14. C4 explosive means :
- (1) RDX with plastic binder  
(2) TNT with plastic binder  
(3) PETN with plastic binder  
(4) Dynamite sticks
15. Which of the following individuals is known as the 'Father of Forensic Toxicology' ?
- (1) Mathieu Orfila (2) Calvin Goddard  
(3) R.A.Riess (4) Edmond Locard
16. A scalp hair specimen with significant root sheath material would indicate that the hair originated from which phase of growth ?
- (1) Anagen (2) Collagen  
(3) Catagen (4) Telogen

17. Which of the following best defines rigor mortis ?
- (1) This is the body cooling after death
  - (2) Livor mortis
  - (3) Postmortem rigidity
  - (4) Postmortem medical examination
18. Tele Forensic Technology is used in :
- (1) Voice identification
  - (2) Crime Scene management
  - (3) Lie detection
  - (4) Brain Mapping
19. Based on a mathematical calculation by Victor Balthazard, the probability of two individuals having the same fingerprints is one out of :
- (1)  $1 \times 10$  to the 30th power
  - (2)  $1 \times 10$  to the 60th power
  - (3)  $1 \times 10$  to the 100th power
  - (4)  $1 \times 10$  to the 90th power
20. The DNA evidence database is called :
- |           |           |
|-----------|-----------|
| (1) CODNA | (2) CODIS |
| (3) CODIA | (4) CCDNA |
21. The level of toxicity of Dhatura plant on the increasing level is :
- (1) Leaf, Root, Fruit, Seeds
  - (2) Seeds, Leaf, Root, Fruit
  - (3) Fruit, Root, Seeds, Leaf
  - (4) Root, Seeds, Fruits, Leaf

22. B. J. Culliford was a Forensic Scientist who has worked in the field of :
- (1) Forensic Toxicology
  - (2) Forensic Ballistics
  - (3) Forensic Serology
  - (4) Forensic Physics
23. The modified version of the organic extraction method that separates epithelial and sperm cells from vaginal swab is :
- (1) Reflux extraction
  - (2) Soxhlet extraction
  - (3) Differential extraction
  - (4) Microwave assisted extraction.
24. The Correct explanation for SWGDRUG is :
- (1) Rapid drug testing kit
  - (2) An international committee that set standards for the analysis of drugs
  - (3) The united national organization with the responsibility for arresting drug traffickers
  - (4) European Agency for early warning for new drugs
25. Taggants in ink are :
- (1) Pigments
  - (2) Vehicle
  - (3) Binders
  - (4) Compounds used as markers to identify ink

26. Sodium -Halide bromide cell window are used in :
- (1) AAS
  - (2) Raman spectrometry
  - (3) UV spectrometry
  - (4) IR spectrometry
27. Bertrand lens is a part of the following microscope :
- (1) Steriomicroscope
  - (2) Comparison microscope
  - (3) Polarising microscope
  - (4) Fluorescence microscope
28. Which of the following factor is *not* assumed by Hardy-Weinberg equilibrium ?
- (1) No migration
  - (2) No mutation
  - (3) Mating in non-random
  - (4) Population is infinitely large
29. Which is the main objective of research ?
- (1) To review the literature
  - (2) To summarise what is already known
  - (3) To get an academic degree
  - (4) To discover new facts or to make fresh interpretation of known facts
30. In Asthenospermic individual :
- (1) The sperm count is below the normal number
  - (2) The sperms are dead
  - (3) No sperm is present.
  - (4) Sperms are non-motile

31. What is the first step in processing a crime scene ?

- (1) Securing the perimeter
- (2) Sketching
- (3) Photography
- (4) Collecting evidence

32. What should be done when we open evidence in the lab ?

- (1) Examine the evidence
- (2) Check and mark the evidence
- (3) Store the evidence
- (4) Mark the evidence

33. Monday in a family, there are husband-wife, two sons and two daughters. All the ladies were invited to a dinner. Both sons went out to play. Husband did not return from office. Who was at home ?

- (1) Only wife was at home.
- (2) Only sons were at home.
- (3) Nobody was home.
- (4) All ladies were at home.

34. Which of the following disease affects handwriting of an individual ?

- (1) Thalassemia
- (2) Chronic Malaria
- (3) Parkinsonism
- (4) Chronic Leukaemia

35. The Indian Arms Act was enforced in :

- (1) 1959
- (2) 1964
- (3) 1955
- (4) 1961

36. Another name of Cyclotol is :

- (1) RDX+PETN
- (2) TNT+PETN
- (3) RDX+TNT
- (4) Picric acid + TNT

37. One of the following is *not* the component of Kastle-Meyer test :

- (1) Potassium hydroxide
- (2) Zinc Dust
- (3) Phelophthalcin
- (4) Glacial acid

38. Confirmation of menstrual blood stain is done by the following method :

- (1) Fibrin degradation product (FDP)
- (2) Protein marker
- (3) Restriction enzyme
- (4) Isozyme marker

39. Derringers are single shot pistols which possess :

- (1) Single barrel
- (2) Multiple barrels
- (3) Choke in the barrel
- (4) Magzine

40. The following typing is used to determine the both sex from a biological specimen :

- (1) Mt.STR typing
- (2) Amelogenin typing
- (3) PCR tying
- (4) Y-STR tying

41. Identify the correct sequence of the closure of skull sutures :
- (1) Saggital, Temporal, Metopic, Basal
  - (2) Temporal, Basal, Metopic, Sagittal
  - (3) Basal, Temporal, Metopic, Saggital
  - (4) Metopic, Basal, Sagittal, Temporal
42. Which of the following is depicted by the master pattern of a person's handwriting ?
- (1) Forgery in the writing
  - (2) Copy book form of the writing
  - (3) Amount of tremors
  - (4) Range of natural variations in the writing
43. Grabber marks may be found in which of the following ?
- |                            |                          |
|----------------------------|--------------------------|
| (1) Type written document  | (2) Photocopied document |
| (3) Carbon copied document | (4) Printed document     |
44. Which of the following features may indicate towards forged signature ?
- (1) Writing strokes with tapered endings
  - (2) Writing strokes with unusual pen lifts
  - (3) Writing strokes with tapered initials
  - (4) Writing strokes with tapered starts and endings
45. Among these which is considered responsible for individual characteristics in photocopied document examination ?
- (1) The font characteristics
  - (2) Accidental marks of the drum
  - (3) Paper composition
  - (4) Toner constituents

46. Corroborative evidence is :

- (1) Evidence that associates an individual with another individual
- (2) Evidence that links an individual with a particular location
- (3) Evidence that refutes other evidence
- (4) Evidence that supports other evidence

47. The DNA fingerprint pattern of a child is :

- (1) Exactly similar to that of both of the parents
- (2) 100% similar to the father's DNA print
- (3) 100 % Similar to the mother's DNA print
- (4) 50% bands similar to father and rest similar to mother

48. In 10 digit classification of fingerprints, a person having whorls pattern in all the ten fingers will be classified under which of the following ?

- |           |           |
|-----------|-----------|
| (1) 0/0   | (2) 32/32 |
| (3) 16/16 | (4) 8/0   |

49. Shovel shaped teeth are seen in :

- |                |                |
|----------------|----------------|
| (1) Africans   | (2) Bushmen    |
| (3) Caucasoids | (4) Mongoloids |

50. Polygraph does not detect :

- |           |                    |
|-----------|--------------------|
| (1) GSR   | (2) Blood pressure |
| (3) P-300 | (4) Respiration    |



51. In identification and DNA analysis of biological evidence using FTA method :
- (1) The DNA stays on the paper
  - (2) The DNA is eluted off the paper
  - (3) The DNA gets extracted
  - (4) The DNA is denatured
52. Hash value is used by the Forensic experts to :
- (1) To authenticate text data
  - (2) To authenticate images in the given file
  - (3) To authenticate videos and audio files
  - (4) To authenticate digital data
53. Mitochondrial DNA analysis is best suited for :
- (1) Samples in which the father or grandfather's DNA is readily available for comparison.
  - (2) Analysis requiring greater discriminatory power than STR.
  - (3) Samples for which nuclear DNA typing is not possible.
  - (4) Analysis in which only a minute quantity of DNA material is available.
54. The modified color test "Duquenois-Levine" is used for the identification of :
- |               |             |
|---------------|-------------|
| (1) Marijuana | (2) Heroin  |
| (3) Peyote    | (4) Cocaine |
55. Among the following white powders which is called "Angel Dust" ?
- |               |         |
|---------------|---------|
| (1) LSD       | (2) THC |
| (3) Mescaline | (4) PCP |

56. Select the chemical name of the drug among the following that is commonly known as 'MEOW-meow' ?
- (1) Mephedrone
  - (2) Methcathinone
  - (3) Methamphetamine
  - (4) Mescaline
57. Among the following which is the non-destructive instrumental method for determining crystalline structure of chemical compound :
- (1) I R spectroscopy
  - (2) Pyrolysis gas chromatography
  - (3) Emission Spectrography
  - (4) X-ray diffraction
58. Among the following techniques which gives more conclusive results for gun short residue detection in shooting cases :
- (1) Neutron Activation Analysis (NAA)
  - (2) Atomic Absorption Spectrometry (AAS)
  - (3) Inductively Coupled Plasma (ICP)
  - (4) Scanning electron Microscopy with energy dispersive analysis
59. In Scanning electron microscope (SEM), secondary electrons :
- (1) Are emitted by the nucleus of the various elements when the object is struck by a beam of x-rays
  - (2) Are emitted when a beam of primary electrons strike the object.
  - (3) Strike the object and then reflect from the surface.
  - (4) Strike the object releasing other electron

60. Among the following techniques which provides unique fingerprint of a chemical structure :

- (1) IR spectrometry
- (2) UV spectrometry
- (3) NMR spectroscopy
- (4) Visible spectroscopy

61. Two inks of similar shade in visible light can be differentiated by using :

- (1) Comparison microscope
- (2) Stereozoom microscope
- (3) Scanning electrom microscope
- (4) Video spectral comparator

62. Which of the following types of biological evidence contains haploid cells :

- |           |             |
|-----------|-------------|
| (1) Hair  | (2) Blood   |
| (3) Sperm | (4) Saliva. |

63. The order of steps in PCR cycling is :

- (1) Annealing, denaturation, and extension
- (2) Denaturation, annealing and extension
- (3) Extension, denaturation and annealing
- (4) Extension, annealing and denaturation

64. Which of the following is *not* a regenerated fibre ?

- |           |                |
|-----------|----------------|
| (1) Rayon | (2) Acetate    |
| (3) Nylon | (4) Triacetate |

65. The most reliable criteria in Gustafson's method of identification from teeth is:
- (1) Cementum apposition
  - (2) Transparency of root
  - (3) Attrition
  - (4) Root resorption
66. This is used in Molotov Cocktail :
- |                 |               |
|-----------------|---------------|
| (1) Arsenic     | (2) Gasoline  |
| (3) Phosphorous | (4) Magnesium |
67. "Speedballs" is a combination of Heroin and :
- (1) Cocaine
  - (2) Cannabis
  - (3) Marijuana
  - (4) Chlorpromazine
68. Copy prepared by superimposing the document is called :
- (1) Simulated forgery
  - (2) Traced forgery
  - (3) Free hand forgery
  - (4) Assymetrical forgery
69. What do you mean by Ambidextrous ?
- (1) A person who writes with right hand
  - (2) A person who writes with left hand
  - (3) A person who writes with both hand with equal fluency
  - (4) A person who writes with feet and mouth

70. The other name for invisible ink is :
- (1) Concealed ink (2) Secret ink  
(3) Sympathetic ink (4) Both (2) and (3)
71. Hackle marks are observed in Forensic cases on :
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- |           |           |
|-----------|-----------|
| (1) 0.731 | (2) 0.727 |
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86. Optical components in UV spectrometer are made up of :
- |             |                   |
|-------------|-------------------|
| (1) Plastic | (2) Sodium-Halide |
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87. Hollow cathode lamp (HCL) is used in the following :

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- (1) Keep them in the soft chamber
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90. Prepared TLC Plates are activated at a temperature of :

- (1) 110 degree C
- (2) 100 degree C
- (3) 120 degree C
- (4) 130 degree C

91. National crime record Bureau of India was founded in the year :

- |          |          |
|----------|----------|
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- |              |                  |
|--------------|------------------|
| (1) Adler    | (2) Sutherland   |
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97. According to Indian evidence act, Leading questions can be asked to a witness in :
- (1) Examination in Chief
  - (2) Cross examination
  - (3) Re-examination
  - (4) Only in Chief examination and re-examination.
98. Which of the following section of IEA -Act 1872 describes 'Dying declaration' ?
- |                |                |
|----------------|----------------|
| (1) Section 45 | (2) Section 39 |
| (3) Section 32 | (4) Section 47 |
99. Definition of sexual assaults is in :
- (1) Section 376 of IPC
  - (2) Section 354 of IPC
  - (3) Section 352 of IPC
  - (4) Section 350 of IPC
100. On the basis of matching of striations on evidence and test bullets, an expert opines that the evidence bullet has been fired from the suspected fire arm. The basis of this opinion lies in :
- (1) Locard's Principle of exchange
  - (2) Law of probability
  - (3) Law of comparison
  - (4) Principle of Analysis

Total No. of Printed Pages : 21

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ARE ASKED TO DO SO)

C

PHD/URS-EE-DEC-2022

SET-Y

SUBJECT : Forensic Science

10011

Sr. No. ....

Time : 1¼ Hours

Max. Marks : 100

Total Questions : 100

Roll No. (in figures) \_\_\_\_\_ (in words) \_\_\_\_\_

Name \_\_\_\_\_ Date of Birth \_\_\_\_\_

Father's Name \_\_\_\_\_ Mother's Name \_\_\_\_\_

Date of Examination \_\_\_\_\_

\_\_\_\_\_  
(Signature of the Candidate)

\_\_\_\_\_  
(Signature of the Invigilator)

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STARTING THE QUESTION PAPER.**

1. **All questions are compulsory.**
2. The candidates **must return** the question booklet as well as OMR Answer-Sheet to the Invigilator concerned before leaving the Examination Hall, failing which a case of use of unfair-means / mis-behaviour will be registered against him / her, in addition to lodging of an FIR with the police. Further the answer-sheet of such a candidate will not be evaluated.
3. Keeping in view the transparency of the examination system, carbonless OMR Sheet is provided to the candidate so that a copy of OMR Sheet may be kept by the candidate.
4. Question Booklet along with answer key of all the A, B, C & D code shall be got uploaded on the University website immediately after the conduct of Entrance Examination. Candidates may raise valid objection/complaint if any, with regard to discrepancy in the Question Booklet/Answer Key within 24 hours of uploading the same on the University Website. The complaint be sent by the students to the Controller of Examinations by hand or through email. Thereafter, no complaint in any case, will be considered.
5. The candidate **must not** do any rough work or writing in the OMR Answer-Sheet. Rough work, if any, may be done in the question booklet itself. Answers **must not** be ticked in the question booklet.
6. **There will be no negative marking. Each correct answer will be awarded one full mark. Cutting, erasing, overwriting and more than one answer in OMR Answer-Sheet will be treated as incorrect answer.**
7. Use only **Black or Blue Ball Point Pen** of good quality in the OMR Answer-Sheet.
8. **Before answering the questions, the candidates should ensure that they have been supplied correct and complete booklet. Complaints, if any, regarding misprinting etc. will not be entertained 30 minutes after starting of the examination.**

PHD/URS-EE-2022/(Forensic Science)(SET-Y)/(C)

SEAL

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  - (4) Only in Chief examination and re-examination.



28. Which of the following section of IEA -Act 1872 describes 'Dying declaration' ?
- (1) Section 45 (2) Section 39  
(3) Section 32 (4) Section 47
29. Definition of sexual assaults is in :
- (1) Section 376 of IPC  
(2) Section 354 of IPC  
(3) Section 352 of IPC  
(4) Section 350 of IPC
30. On the basis of matching of striations on evidence and test bullets, an expert opines that the evidence bullet has been fired from the suspected fire arm. The basis of this opinion lies in :
- (1) Locard's Principle of exchange  
(2) Law of probability  
(3) Law of comparison  
(4) Principle of Analysis
31. Identify the correct sequence of the closure of skull sutures :
- (1) Saggital, Temporal, Metopic, Basal  
(2) Temporal, Basal, Metopic, Sagittal  
(3) Basal, Temporal, Metopic, Saggital  
(4) Metopic, Basal, Sagittal, Temporal
32. Which of the following is depicted by the master pattern of a person's handwriting ?
- (1) Forgery in the writing  
(2) Copy book form of the writing  
(3) Amount of tremors  
(4) Range of natural variations in the writing

33. Grabber marks may be found in which of the following ?
- (1) Type written document
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  - (4) 50% bands similar to father and rest similar to mother

38. In 10 digit classification of fingerprints, a person having whorls pattern in all the ten fingers will be classified under which of the following ?
- (1) 0/0 (2) 32/32  
(3) 16/16 (4) 8/0
39. Shovel shaped teeth are seen in :
- (1) Africans (2) Bushmen  
(3) Caucasoids (4) Mongoloids
40. Polygraph does not detect :
- (1) GSR (2) Blood pressure  
(3) P-300 (4) Respiration
41. In identification and DNA analysis of biological evidence using FTA method :
- (1) The DNA stays on the paper  
(2) The DNA is eluted off the paper  
(3) The DNA gets extracted  
(4) The DNA is denatured
42. Hash value is used by the Forensic experts to :
- (1) To authenticate text data  
(2) To authenticate images in the given file  
(3) To authenticate videos and audio files  
(4) To authenticate digital data

C

43. Mitochondrial DNA analysis is best suited for :
- (1) Samples in which the father or grandfather's DNA is readily available for comparison.
  - (2) Analysis requiring greater discriminatory power than STR.
  - (3) Samples for which nuclear DNA typing is not possible.
  - (4) Analysis in which only a minute quantity of DNA material is available.
44. The modified color test "Duquenois-Levine" is used for the identification of :
- (1) Marijuana
  - (2) Heroin
  - (3) Peyote
  - (4) Cocaine
45. Among the following white powders which is called "Angel Dust" ?
- (1) LSD
  - (2) THC
  - (3) Mescaline
  - (4) PCP
46. Select the chemical name of the drug among the following that is commonly known as 'MEOW-meow' ?
- (1) Mephedrone
  - (2) Methcathinone
  - (3) Methamphetamine
  - (4) Mescaline
47. Among the following which is the non-destructive instrumental method for determining crystalline structure of chemical compound :
- (1) IR spectroscopy
  - (2) Pyrolysis gas chromatography
  - (3) Emission Spectrography
  - (4) X-ray diffraction

P. T. O.

48. Among the following techniques which gives more conclusive results for gun short residue detection in shooting cases :
- (1) Neutron Activation Analysis (NAA)
  - (2) Atomic Absorption Spectrometry (AAS)
  - (3) Inductively Coupled Plasma (ICP)
  - (4) Scanning electron Microscopy with energy dispersive analysis
49. In Scanning electron microscope (SEM), secondary electrons :
- (1) Are emitted by the nucleus of the various elements when the object is struck by a beam of x-rays
  - (2) Are emitted when a beam of primary electrons strike the object.
  - (3) Strike the object and then reflect from the surface.
  - (4) Strike the object releasing other electron
50. Among the following techniques which provides unique fingerprint of a chemical structure :
- (1) IR spectrometry
  - (2) UV spectrometry
  - (3) NMR spectroscopy
  - (4) Visible spectroscopy
51. The level of toxicity of Dhatura plant on the increasing level is :
- (1) Leaf, Root, Fruit, Seeds
  - (2) Seeds, Leaf, Root, Fruit
  - (3) Fruit, Root, Seeds, Leaf
  - (4) Root, Seeds, Fruits, Leaf

C

52. B. J. Culliford was a Forensic Scientist who has worked in the field of :
- (1) Forensic Toxicology
  - (2) Forensic Ballistics
  - (3) Forensic Serology
  - (4) Forensic Physics
53. The modified version of the organic extraction method that separates epithelial and sperm cells from vaginal swab is :
- (1) Reflux extraction
  - (2) Soxhlet extraction
  - (3) Differential extraction
  - (4) Microwave assisted extraction.
54. The Correct explanation for SWGDRUG is :
- (1) Rapid drug testing kit
  - (2) An international committee that set standards for the analysis of drugs
  - (3) The united national organization with the responsibility for arresting drug traffickers
  - (4) European Agency for early warning for new drugs
55. Taggants in ink are :
- (1) Pigments
  - (2) Vehicle
  - (3) Binders
  - (4) Compounds used as markers to identify ink

56. Sodium -Halide bromide cell window are used in :
- (1) AAS
  - (2) Raman spectrometry
  - (3) UV spectrometry
  - (4) IR spectrometry
57. Bertrand lens is a part of the following microscope :
- (1) Steriomicroscope
  - (2) Comparison microscope
  - (3) Polarising microscope
  - (4) Fluorescence microscope
58. Which of the following factor is *not* assumed by Hardy-Weinberg equilibrium ?
- (1) No migration
  - (2) No mutation
  - (3) Mating in non-random
  - (4) Population is infinitely large
59. Which is the main objective of research ?
- (1) To review the literature
  - (2) To summarise what is already known
  - (3) To get an academic degree
  - (4) To discover new facts or to make fresh interpretation of known facts
60. In Asthenospermic individual :
- (1) The sperm count is below the normal number
  - (2) The sperms are dead
  - (3) No sperm is present.
  - (4) Sperms are non-motile

C

61. Major differences between GC and HPLC is that :
- (1) GC has a liquid mobile
  - (2) GC uses columns to hold the mobile phase, whereas HPLC does not
  - (3) GC columns are heated, whereas HPLC columns are kept at room temperature
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  - (3) Steam distillation method
  - (4) Solvent extraction method
63. Which part of the sperm contains DNA ?
- |          |                                |
|----------|--------------------------------|
| (1) Tail | (2) Head                       |
| (3) Neck | (4) End piece of the tail only |
64. A bullet fired from a gun is not released, it is ejected out with the subsequent shot. It is known as :
- (1) Dumdum bullet
  - (2) Rocketing bullet
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  - (4) Tandem bullet
65. Disease that permanently alters the finger prints of an individual is :
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| (1) Tuberculosis | (2) Leprosy    |
| (3) Diabetes     | (4) Dermatitis |



66. Pearson's formula is used for :
- (1) Cephalic index determination
  - (2) Stature determination
  - (3) Race determination
  - (4) Age determination
67. Holograph documents pertain to which of the following ?
- (1) A document type written and signed by a person
  - (2) A document written by one person and signed by the other
  - (3) A document written and signed by one and the same person
  - (4) A document signed by a forger
68. Medullary index of human hair is :
- (1) Less than  $1/3$
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  - (3) More than  $1/3$  but less than  $1/2$
  - (4) More than  $3/4$
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| (1) Fossilised micro-organisms | (2) Pollens and spores |
| (3) Soils                      | (4) Dust               |
70. Disguise in relation to handwriting examination is :
- (1) Duplicate another's writing
  - (2) Simulation of another's writing
  - (3) Deliberate effort to alter the discriminating elements of one's own writing
  - (4) Generate or produce with feet/traced forgery

71. Two inks of similar shade in visible light can be differentiated by using :
- (1) Comparison microscope
  - (2) Stereozoom microscope
  - (3) Scanning electron microscope
  - (4) Video spectral comparator
72. Which of the following types of biological evidence contains haploid cells :
- (1) Hair
  - (2) Blood
  - (3) Sperm
  - (4) Saliva.
73. The order of steps in PCR cycling is :
- (1) Annealing, denaturation, and extension
  - (2) Denaturation, annealing and extension
  - (3) Extension, denaturation and annealing
  - (4) Extension, annealing and denaturation
74. Which of the following is *not* a regenerated fibre ?
- (1) Rayon
  - (2) Acetate
  - (3) Nylon
  - (4) Triacetate
75. The most reliable criteria in Gustafson's method of identification from teeth is:
- (1) Cementum apposition
  - (2) Transparency of root
  - (3) Attrition
  - (4) Root resorption
76. This is used in Molotov Cocktail :
- (1) Arsenic
  - (2) Gasoline
  - (3) Phosphorous
  - (4) Magnesium

77. "Speedballs" is a combination of Heroin and :
- (1) Cocaine
  - (2) Cannabis
  - (3) Marijuana
  - (4) Chlorpromazine
78. Copy prepared by superimposing the document is called :
- (1) Simulated forgery
  - (2) Traced forgery
  - (3) Free hand forgery
  - (4) Assymetrical forgery
79. What do you mean by Ambidextrous ?
- (1) A person who writes with right hand
  - (2) A person who writes with left hand
  - (3) A person who writes with both hand with equal fluency
  - (4) A person who writes with feet and mouth
80. The other name for invisible is :
- |                     |                      |
|---------------------|----------------------|
| (1) Concealed ink   | (2) Secret ink       |
| (3) Sympathetic ink | (4) Both (2) and (3) |
81. What is the first step in processing a crime scene ?
- (1) Securing the perimeter
  - (2) Sketching
  - (3) Photography
  - (4) Collecting evidence

82. What should be done when we open evidence in the lab ?
- (1) Examine the evidence
  - (2) Check and mark the evidence
  - (3) Store the evidence
  - (4) Mark the evidence
83. Monday in a family, there are husband-wife, two sons and two daughters. All the ladies were invited to a dinner. Both sons went out to play. Husband did not return from office. Who was at home ?
- (1) Only wife was at home.
  - (2) Only sons were at home.
  - (3) Nobody was home.
  - (4) All ladies were at home.
84. Which of the following disease affects handwriting of an individual ?
- (1) Thalassemia
  - (2) Chronic Malaria
  - (3) Parkinsonism
  - (4) Chronic Leukaemia
85. The Indian Arms Act was enforced in :
- |          |          |
|----------|----------|
| (1) 1959 | (2) 1964 |
| (3) 1955 | (4) 1961 |
86. Another name of Cyclotol is :
- |              |                       |
|--------------|-----------------------|
| (1) RDX+PETN | (2) TNT+PETN          |
| (3) RDX+TNT  | (4) Picric acid + TNT |

87. One of the following is *not* the component of Kastle-Meyer test :

- (1) Potassium hydroxide
- (2) Zinc Dust
- (3) Phelophthalein
- (4) Glacial acid

88. Confirmation of menstrual blood stain is done by the following method :

- (1) Fibrin degradation product (FDP)
- (2) Protein marker
- (3) Restriction enzyme
- (4) Isozyme marker

89. Derringers are single shot pistols which possess :

- (1) Single barrel
- (2) Multiple barrels
- (3) Choke in the barrel
- (4) Magzine

90. The following typing is used to determine the both sex from a biological specimen :

- (1) Mt.STR typing
- (2) Amelogenin typing
- (3) PCR tying
- (4) Y-STR tying

91. The fluorescence examination of the seminal stains gives fluorescence due to the presence of :

- (1) Melanin
- (2) Flavin
- (3) Phaeo-Melanin
- (4) Eurobilin

92. Among these which is *not* a red cell blood group system ?

- (1) ABO (2) Kell  
(3) Duffy (4) HLA

93. "Scott test" is used for the detection of :

- (1) Morphine (2) Heroin  
(3) Cocaine (4) Cannabis

94. C4 explosive means :

- (1) RDX with plastic binder  
(2) TNT with plastic binder  
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95. Which of the following individuals is known as the 'Father of Forensic Toxicology' ?

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- (1) Anagen (2) Collagen  
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- (1) This is the body cooling after death  
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- (1) Voice identification
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99. Based on a mathematical calculation by Victor Balthazard, the probability of two individuals having the same fingerprints is one out of :
- (1)  $1 \times 10$  to the 30th power
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100. The DNA evidence database is called :
- |           |           |
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Total No. of Printed Pages : 21

(DO NOT OPEN THIS QUESTION BOOKLET BEFORE TIME OR UNTIL YOU  
ARE ASKED TO DO SO)

**D**

**SET-Y**

**PHD/URS-EE-DEC-2022**  
**SUBJECT : Forensic Science**

**10020**

Sr. No. ....

Time : 1¼ Hours

Max. Marks : 100

Total Questions : 100

Roll No. (in figures) \_\_\_\_\_ (in words) \_\_\_\_\_

Name \_\_\_\_\_ Date of Birth \_\_\_\_\_

Father's Name \_\_\_\_\_ Mother's Name \_\_\_\_\_

Date of Examination \_\_\_\_\_

\_\_\_\_\_  
(Signature of the Candidate)

\_\_\_\_\_  
(Signature of the Invigilator)

**CANDIDATES MUST READ THE FOLLOWING INFORMATION/INSTRUCTIONS BEFORE  
STARTING THE QUESTION PAPER.**

- 1. All questions are compulsory.**
- The candidates **must return** the question booklet as well as OMR Answer-Sheet to the Invigilator concerned before leaving the Examination Hall, failing which a case of use of unfair-means / mis-behaviour will be registered against him / her, in addition to lodging of an FIR with the police. Further the answer-sheet of such a candidate will not be evaluated.
- Keeping in view the transparency of the examination system, carbonless OMR Sheet is provided to the candidate so that a copy of OMR Sheet may be kept by the candidate.
- Question Booklet along with answer key of all the A, B, C & D code shall be got uploaded on the University website immediately after the conduct of Entrance Examination. Candidates may raise valid objection/complaint if any, with regard to discrepancy in the Question Booklet/Answer Key within 24 hours of uploading the same on the University Website. The complaint be sent by the students to the Controller of Examinations by hand or through email. Thereafter, no complaint in any case, will be considered.
- The candidate **must not** do any rough work or writing in the OMR Answer-Sheet. Rough work, if any, may be done in the question booklet itself. Answers **must not** be ticked in the question booklet.
- There will be no negative marking. Each correct answer will be awarded one full mark. Cutting, erasing, overwriting and more than one answer in OMR Answer-Sheet will be treated as incorrect answer.**
- Use only **Black** or **Blue Ball Point Pen** of good quality in the OMR Answer-Sheet.
- Before answering the questions, the candidates should ensure that they have been supplied correct and complete booklet. Complaints, if any, regarding misprinting etc. will not be entertained 30 minutes after starting of the examination.**

**PHD/URS-EE-2022/(Forensic Science)(SET-Y)/(D)**

SEAL



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D

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D

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  - (2)  $1 \times 10$  to the 60th power
  - (3)  $1 \times 10$  to the 100th power
  - (4)  $1 \times 10$  to the 90th power
40. The DNA evidence database is called :
- |           |           |
|-----------|-----------|
| (1) CODNA | (2) CODIS |
| (3) CODIA | (4) CCDNA |
41. The level of toxicity of Datura plant on the increasing level is :
- (1) Leaf, Root, Fruit, Seeds
  - (2) Seeds, Leaf, Root, Fruit
  - (3) Fruit, Root, Seeds, Leaf
  - (4) Root, Seeds, Fruits, Leaf



D

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43. The modified version of the organic extraction method that separates epithelial and sperm cells from vaginal swab is :
- (1) Reflux extraction
  - (2) Soxhlet extraction
  - (3) Differential extraction
  - (4) Microwave assisted extraction.
44. The Correct explanation for SWGDRUG is :
- (1) Rapid drug testing kit
  - (2) An international committee that set standards for the analysis of drugs
  - (3) The united national organization with the responsibility for arresting drug traffickers
  - (4) European Agency for early warning for new drugs
45. Taggants in ink are :
- (1) Pigments
  - (2) Vehicle
  - (3) Binders
  - (4) Compounds used as markers to identify ink

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46. Sodium -Halide bromide cell window are used in :
- (1) AAS
  - (2) Raman spectrometry
  - (3) UV spectrometry
  - (4) IR spectrometry
47. Bertrand lens is a part of the following microscope :
- (1) Steriomicroscope
  - (2) Comparison microscope
  - (3) Polarising microscope
  - (4) Fluorescence microscope
48. Which of the following factor is *not* assumed by Hardy-Weinberg equilibrium ?
- (1) No migration
  - (2) No mutation
  - (3) Mating in non-random
  - (4) Population is infinitely large
49. Which is the main objective of research ?
- (1) To review the literature
  - (2) To summarise what is already known
  - (3) To get an academic degree
  - (4) To discover new facts or to make fresh interpretation of known facts
50. In Asthenospermic individual :
- (1) The sperm count is below the normal number
  - (2) The sperms are dead
  - (3) No sperm is present.
  - (4) Sperms are non-motile

51. The richest concentration of choline in the spermatic fluid was determined by :

- (1) Jhonston (1896)
- (2) Florence (1886)
- (3) Fletcher etal (1935)
- (4) Davis and Wilson (1974)

52. Bevelling of a wound is seen in the following injuries :

- (1) Contusion
- (2) Incised wound
- (3) Laceration
- (4) Abrasion

53. The first man to introduce Fingerprint testing in criminal investigation is :

- (1) William Herschel
- (2) Francis Galton and Edward Henry
- (3) Thomas Edison
- (4) William James

54. Preservation of foot prints on snow can be done by :

- (1) Plaster of Paris cast
- (2) Sulphur casting
- (3) Tracing
- (4) Wax casting

55. The bore of the 12 bore gun is :

- |           |           |
|-----------|-----------|
| (1) 0.731 | (2) 0.727 |
| (3) 0.723 | (4) 0.729 |

56. Optical components in UV spectrometer are made up of :
- (1) Plastic
  - (2) Sodium-Halide
  - (3) Quartz
  - (4) Glass
57. Hollow cathode lamp (HCL) is used in the following :
- (1) Infra red spectrometer
  - (2) Atomic emission spectrometer
  - (3) Atomic absorption spectrometer
  - (4) X-ray Fluorescence spectrometer.
58. The following method is used for determining the age of an ink by tracking the degradation of certain dyes :
- (1) High performance liquid chromatography(HPLC)
  - (2) Thin layer chromatography (TLC)
  - (3) Laser desorption mass spectrometry (LDMS)
  - (4) Gas chromatography (GC).
59. How to preserve question documents in the lab ?
- (1) Keep them in the soft chamber
  - (2) Keep it in hard folder without folding
  - (3) Keep them in a non-humid chamber
  - (4) Keep them by folding in Envelop
60. Prepared TLC Plates are activated at a temperature of :
- (1) 110 degree C
  - (2) 100 degree C
  - (3) 120 degree C
  - (4) 130 degree C

61. Hackle marks are observed in Forensic cases on :
- (1) Wood (2) Steel  
(3) Glass (4) Paint
62. In order to ascertain the cause of death due to drowning, which of the following needs to be collected ?
- (1) Hair (2) Blood  
(3) Bone Marrow (4) Epithelial cells
63. Muzzle imprint is found in cases of :
- (1) Close range (2) Contact shot  
(3) Near contact shot (4) Long range
64. Embedding of unburnt or semi-burnt powder particles inside skin or at target in a fire arm from close Range is called as :
- (1) Scorching (2) Blackening  
(3) Tattooing (4) Burning
65. Which of the following is *not* present in cartridge cases :
- (1) Breech face marks (2) Extractor marks  
(3) Ejector marks (4) Rifling marks
66. Rave drug is :
- (1) Cannabis (2) Cocaine  
(3) Heroin (4) Methamphetamine
67. All are alkaloids except :
- (1) Morphine (2) Atropine  
(3) Physostigmine (4) Abrine

68. Brentamine Fast Blue B is used to test :
- (1) Seminal stains
  - (2) Vaginal stains
  - (3) Saliva stains
  - (4) Blood stains
69. P-30 is secreted by :
- (1) Salivary glands
  - (2) Parotid glands
  - (3) Pancreatic glands
  - (4) Prostrate glands
70. The presence of maggots at postmortem indicates:
- (1) Cause of death
  - (2) Mode of death
  - (3) Duration since death
  - (4) Manner of death
71. In identification and DNA analysis of biological evidence using FTA method :
- (1) The DNA stays on the paper
  - (2) The DNA is eluted off the paper
  - (3) The DNA gets extracted
  - (4) The DNA is denatured
72. Hash value is used by the Forensic experts to :
- (1) To authenticate text data
  - (2) To authenticate images in the given file
  - (3) To authenticate videos and audio files
  - (4) To authenticate digital data

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73. Mitochondrial DNA analysis is best suited for :
- (1) Samples in which the father or grandfather's DNA is readily available for comparison.
  - (2) Analysis requiring greater discriminatory power than STR.
  - (3) Samples for which nuclear DNA typing is not possible.
  - (4) Analysis in which only a minute quantity of DNA material is available.
74. The modified color test "Duquenois-Levine" is used for the identification of :
- (1) Marijuana
  - (2) Heroin
  - (3) Peyote
  - (4) Cocaine
75. Among the following white powders which is called "Angel Dust" ?
- (1) LSD
  - (2) THC
  - (3) Mescaline
  - (4) PCP
76. Select the chemical name of the drug among the following that is commonly known as 'MEOW-meow' ?
- (1) Mephedrone
  - (2) Methcathinone
  - (3) Methamphetamine
  - (4) Mescaline
77. Among the following which is the non-destructive instrumental method for determining crystalline structure of chemical compound :
- (1) I R spectroscopy
  - (2) Pyrolysis gas chromatography
  - (3) Emission Spectrography
  - (4) X-ray diffraction

78. Among the following techniques which gives more conclusive results for gun short residue detection in shooting cases :
- (1) Neutron Activation Analysis (NAA)
  - (2) Atomic Absorption Spectrometry (AAS)
  - (3) Inductively Coupled Plasma (ICP)
  - (4) Scanning electron Microscopy with energy dispersive analysis
79. In Scanning electron microscope (SEM), secondary electrons :
- (1) Are emitted by the nucleus of the various elements when the object is struck by a beam of x-rays
  - (2) Are emitted when a beam of primary electrons strike the object.
  - (3) Strike the object and then reflect from the surface.
  - (4) Strike the object releasing other electron
80. Among the following techniques which provides unique fingerprint of a chemical structure :
- (1) IR spectrometry
  - (2) UV spectrometry
  - (3) NMR spectroscopy
  - (4) Visible spectroscopy
81. National crime record Bureau of India was founded in the year :
- |          |          |
|----------|----------|
| (1) 1986 | (2) 1982 |
| (3) 1950 | (4) 1996 |



82. Which of the following is the correct sequence for examination of Forensic evidence :
- (1) Recognition, identification, individualization and reconstruction.
  - (2) Recognition, individualization, identification, and reconstruction
  - (3) Identification, recognition, individualization and reconstruction
  - (4) Individualization, recognition, identification and reconstruction.
83. In India periodical data on crime, is compiled and published by :
- (1) National institute of Social defence
  - (2) National Crime Records Bureau
  - (3) Bureau of Police Research and Development
  - (4) National Institute of Criminology and Forensic Sciences
84. Probation is :
- (1) Determinate sentencing
  - (2) Indeterminate sentencing
  - (3) Suspended sentencing
  - (4) Custodial sentencing
85. The commission of crime by habitual offenders means :
- (1) Vandalism
  - (2) Recidivism
  - (3) Terrorism
  - (4) Communism
86. Who is considered as the Father of Criminology ?
- (1) Adler
  - (2) Sutherland
  - (3) Lombroso
  - (4) Edwin Becker

87. According to Indian evidence act, Leading questions can be asked to a witness in :

- (1) Examination in Chief
- (2) Cross examination
- (3) Re-examination
- (4) Only in Chief examination and re-examination.

88. Which of the following section of IEA -Act 1872 describes 'Dying declaration' ?

- |                |                |
|----------------|----------------|
| (1) Section 45 | (2) Section 39 |
| (3) Section 32 | (4) Section 47 |

89. Definition of sexual assaults is in :

- (1) Section 376 of IPC
- (2) Section 354 of IPC
- (3) Section 352 of IPC
- (4) Section 350 of IPC

90. On the basis of matching of striations on evidence and test bullets, an expert opines that the evidence bullet has been fired from the suspected fire arm. The basis of this opinion lies in :

- (1) Locard's Principle of exchange
- (2) Law of probability
- (3) Law of comparison
- (4) Principle of Analysis

91. Two inks of similar shade in visible light can be differentiated by using :

- (1) Comparison microscope
- (2) Stereozoom microscope
- (3) Scanning electrom microscope
- (4) Video spectral comparator

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92. Which of the following types of biological evidence contains haploid cells :
- (1) Hair (2) Blood  
(3) Sperm (4) Saliva.
93. The order of steps in PCR cycling is :
- (1) Annealing, denaturation, and extension  
(2) Denaturation, annealing and extension  
(3) Extension, denaturation and annealing  
(4) Extension, annealing and denaturation
94. Which of the following is *not* a regenerated fibre ?
- (1) Rayon (2) Acetate  
(3) Nylon (4) Triacetate
95. The most reliable criteria in Gustafson's method of identification from teeth is:
- (1) Cementum apposition  
(2) Transparency of root  
(3) Attrition  
(4) Root resorption
96. This is used in Molotov Cocktail :
- (1) Arsenic (2) Gasoline  
(3) Phosphorous (4) Magnesium
97. "Speedballs" is a combination of Heroin and :
- (1) Cocaine  
(2) Cannabis  
(3) Marijuana  
(4) Chlorpromazine

98. Copy prepared by superimposing the document is called :

- (1) Simulated forgery
- (2) Traced forgery
- (3) Free hand forgery
- (4) Assymetrical forgery

99. What do you mean by Ambidextrous ?

- (1) A person who writes with right hand
- (2) A person who writes with left hand
- (3) A person who writes with both hand with equal fluency
- (4) A person who writes with feet and mouth

100. The other name for invisible is :

- (1) Concealed ink
- (2) Secret ink
- (3) Sympathetic ink
- (4) Both (2) and (3)

ANSWER KEYS OF FORENSIC SC. FOR SESSION 2022-23				
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2	1	4	3	2
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7	2	3	4	4
8	3	1	1	1
9	2	2	4	2
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45	4	2	4	4
46	4	4	1	4
47	4	4	4	3
48	1	2	4	3
49	4	4	2	4
50	3	3	1	4

*Sanku*  
13/12/22

*King*  
13/12/22

*P. S.*  
13/12/22

*Mishal*  
13.12.22

**ANSWER KEYS OF FORENSIC SC. FOR SESSION 2022-23**

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94	2	3	1	3
95	2	2	1	2
96	4	3	1	2
97	4	2	3	1
98	2	3	2	2
99	4	2	4	3
100	3	2	2	4

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