

Used for Jumbling

Total No. of Printed Pages : 21

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A

SET-Y

PG-EE-2022

SUBJECT : Forensic Science

10001

Sr. No.

Time : 1½ Hours

Max. Marks : 100

Total Questions : 100

Roll No. (in figures) _____ (in words) _____

Name _____ Father's Name _____

Mother's Name _____ Date of Examination _____

(Signature of the Candidate)

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PG-EE-2022/(Forensic Science)-(SET-Y)/(A)

1. Mr. Ranil Wickrem Singhe from the United National Party of Sri Lanka occupied the position of :

- (1) President
- (2) Prime Minister
- (3) Finance Minister
- (4) All of the above

2. Mr. Raghuvendra Tanwar was awarded Padma Shri in 2022 in the field of :

- (1) Trade & Industry
- (2) Sports
- (3) Science & Engineering
- (4) Literature & Education

3. WHO Global Centre for Traditional Medicine (WHOGCTM) will be established in India ?

- (1) Dehradun
- (2) Jamnagar
- (3) Gangtok
- (4) Shillong

4. The US Census Bureau has projected the World Population to be :

- (1) 7.0 billion
- (2) 7.8 billion
- (3) 8.0 billion
- (4) 8.8 billion

5. Pointing to a girl, Vijay said, "This girl is daughter of only child of my father". What is the relation of Vijay's wife to that girl ?

- (1) Daughter
- (2) Sister
- (3) Mother
- (4) Mother-in-law

6. Find the word which is different from others :
- (1) Cap (2) Veil (3) Turban (4) Hat
7. The difference between the times taken by two cars to travel a distance of 350 km is 2 hr and 20 minutes. If the difference between their speed is 5 kmph, find slower speed in kmph :
- (1) 35 (2) 20 (3) 25 (4) 30
8. A train covers a distance of 12 km in 10 minutes. If, it takes 6 seconds to pass a flag post, then the length of train is :
- (1) 120 m (2) 150 m (3) 200 m (4) 250 m
9. A hall is 15 m long and 12 m wide. If the sum of the areas of floor and ceiling is equal to the sum of the areas of four walls, the volume of the hall is :
- (1) 720 (2) 900 (3) 1200 (4) 1800
10. A sum of money is to distributed among A, B, C and D in the proportion of 5 : 2 : 4 : 3. If C gets Rs. 1,000 more than D, what is B's share ?
- (1) Rs. 500 (2) Rs. 1,500 (3) Rs. 2,000 (4) None of the above
11. A two digit number is such that the product of the digit is 8. When 18 is added to the number, then the digits are reversed. The number is :
- (1) 18 (2) 24 (3) 42 (4) 81

12. If $A = X\%$ of Y and $B = Y\%$ of X , then which of the following is **true** ?

- (1) A is greater than B
- (2) Relationship between A and B can not be determined
- (3) If X is smaller than Y, then A is greater than B
- (4) None of the above

13. A man travelled a distance of 61 km in nine hours. He travelled partly on foot @ 4 km/hr and partly on horse @ 9 kmph. The distance covered on foot is :

- (1) 14 km
- (2) 15 km
- (3) 16 km
- (4) 17 km

14. What will be in place of question mark (?) in the following series ?

BZA, DYC, FXB, HWG, ?

- (1) VJI
- (2) JWU
- (3) JVI
- (4) VIJ

15. Sh. Jayant Kumar Magan Lal Vyas for his contribution in the field of Science & Engineering was awarded in the year 2022 :

- (1) Padma Bhushan
- (2) Padma Shri
- (3) Padma Vibhushan
- (4) None of the above

16. Forensic Science is defined as :

- (1) Application of scientific principles in the administration of justice
- (2) Application of scientific techniques in the administration of justice
- (3) Both (1) and (2)
- (4) None of the above

17. The origin of word forensic is from :

- (1) French
- (2) German
- (3) Latin
- (4) None of the above

18. The finger print patterns are categorized as :

- (1) Arch
- (2) Loop
- (3) Whorl
- (4) All of the above

19. In cyber forensic, the digital evidence exists in the form of :

- (1) Physical
- (2) Binary
- (3) Both (1) and (2)
- (4) None of the above

20. Sodium pentothal is a drug administered in lie detection test and that is named as :

- (1) Polygraph test
- (2) Layered Voice Analysis test
- (3) Narco test
- (4) SDS test

21. Primary crime scene is defined :

- (1) Where actual criminal activity occurred
- (2) Where body of victim was found
- (3) Where weapon of offence was recovered
- (4) All of the above

22. In scanning electron microscope, the electron interact with atoms in the sample and provide information about :

- (1) The surface topography
- (2) Composition of sample
- (3) Both (1) & (2)
- (4) None of the above

23. Diatom test is used in cases of :

- (1) Firearm injuries
- (2) Soil analysis
- (3) Drowning cases
- (4) None of the above

24. The ABO blood-groups were discovered by :

- (1) Budowle
- (2) Landsteiner
- (3) Mendel
- (4) None of the above

25. An incised injury is caused with the help of :

- (1) Knife
- (2) Wooden stick
- (3) Steel rod
- (4) Brick

26. Ganja is derived from the plant named :

- (1) Solanum Nigrum
- (2) Cannabis Sativa
- (3) Ulex Europeaus
- (4) None of the above

27. Glass on forensic evidence can be best analysed by :

- (1) Density gradient method
- (2) Magnifying lens
- (3) Inductively Coupled Plasma Optical Emission Spectrometry (ICP-OES)
- (4) All of the above

28. Osteometry is defined as :

- (1) Study and measurement of human skeleton
- (2) Study and measurement of animal skeleton
- (3) Both (1) & (2)
- (4) None of the above

29. A Single Barrel Break Loading (SBBL) firearm is where ?

- (1) The user loads ammunition via the rear end of its barrel
- (2) The user loads ammunition via the front end of its barrel
- (3) Both (1) & (2)
- (4) None of the above

30. The father of the science of questioned document examination is :

- (1) Dr. Alee Jaffrey
- (2) A S Curry
- (3) A S Osborn
- (4) C H Goddard

31. Atom is the smallest indivisible particle of matter was proposed in 1808 by :

- (1) J J Thomson
- (2) John Dalton
- (3) Rutherford
- (4) Bohr

32. The mass of neutron is of the order of :

- (1) 10^{-24} kg
- (2) 10^{-23} kg
- (3) 10^{-27} kg
- (4) 10^{-29} kg

33. The spectrum produced from an element is :

- (1) Absorption spectrum
- (2) Atomic spectrum
- (3) Line spectrum
- (4) All of the above

34. The angular momentum of an electron is zero. In which orbital it may be present ?

- (1) 2p (2) 4t (3) 2s (4) 2f

35. Ionisation potential for isotopes of an element is :

- (1) Different (2) Affected by atomic weight

- (3) Same (4) Affected by neutrons

36. The first element of a group in many ways different from the other heavier members of the group, which is due to ?

- (1) Unavailability of d orbital

- (2) Small size

- (3) High electronegative and high ionization potential

- (4) All of the above

37. Which oxide is amphoteric in nature ?

- (1) Na_2O (2) ZnO (3) BaO (4) CaO

38. Nuclear fission was first discovered by :

- (1) Soddy (2) Fajan (3) Russel (4) Otto Hahn

39. Radioactive disintegration rate is affected by :

- (1) Pressure (2) Electric field

- (3) Temperature (4) None of the above

40. The shape of molecule is distorted by :

- (1) Inert pair of electrons
- (2) Ion pair of electron
- (3) Bond pair of electron
- (4) Both bond pair and inert pair of electrons

41. Buffer is a solution :

- (1) Which maintains its pH constant up on addition of small amount of acid or base
- (2) Mixture of weak acid
- (3) Mixture of weak base
- (4) Both (2) and (3)

42. Which one of the following is weak Lewis base ?

- (1) H^+ (2) OH^- (3) HCO_3^- (4) Cl^-

43. The forces acting between nobel gas atoms are :

- (1) Magnetic forces
- (2) Ion dipole forces
- (3) Vander Waal's forces
- (4) London forces

44. The gas which is filled in tungsten lamp is :

- (1) He (2) H_2 (3) Ar (4) O_2

45. The gas responsible for Bhopal gas tragedy was :
- (1) Acid rain
 - (2) Methyl isocyanate gas
 - (3) Green house effect
 - (4) None of the above
46. The gas which has strong affinity towards haemoglobin and produces toxic effect is :
- (1) NO_2
 - (2) CO
 - (3) SO_2
 - (4) None of the above
47. The most acidic among the following is :
- (1) p-nitrophenol
 - (2) p-chlorophenol
 - (3) o-cresol
 - (4) p-cresol
48. A compound in which hydroxyl group is attached directly to the aromatic ring was discovered by :
- (1) Runge
 - (2) Rutherford
 - (3) Perkin
 - (4) None of the above
49. When DDT passes into food chain, its concentration :
- (1) increases
 - (2) decreases
 - (3) remains same
 - (4) All of the above

50. Which of the following compound has the most de-shielding protons ?

- (1) CH_3I (2) CH_4
(3) CH_3Cl (4) CH_3Br

51. The solvent used in NMR spectroscopy is :

- (1) TMS (2) CCl_4
(3) CDCl_3 (4) None of the above

52. The value of electrode potential does not get affected by :

- (1) nature of cell (2) temperature
(3) nature of electrode (4) concentration of solution

53. Raman spectra is observed in :

- (1) Visible region (2) IR region
(3) UV region (4) Microwave region

54. The molecule which is IR inactive but Raman active is :

- (1) SO_2 (2) N_2 (3) HCl (4) Protein

55. Pyrene is :

- (1) Carbonyl chloride (2) Carbon tetrachloride
(3) Chloroform (4) Sulphur monochloride

56. Plant cell wall is mainly composed of :

- | | |
|-------------|---------------|
| (1) Starch | (2) Cellulose |
| (3) Protein | (4) Lipid |

57. Chromosomes play important role in heredity, it was suggested in 1900 by :

- | | |
|------------------|-----------------|
| (1) Messelson | (2) Joshua Ryan |
| (3) Carl Correns | (4) McCarthy |

58. The main constituent of cell wall of diatom is :

- | | |
|------------|---------------|
| (1) Pectin | (2) Mucilage |
| (3) Silica | (4) Cellulose |

59. Which fungus is responsible for production of citric acid ?

- (1) Penicillium
- (2) Aspergillus niger
- (3) Fusarium moniliformae
- (4) Puccinia graminis

60. Who coined the term taxonomy ?

- | | |
|-----------------|-------------|
| (1) de Candolle | (2) Bentham |
| (3) Braun | (4) Thome |

61. The living element of Xylem is known as :

- (1) Vessels
- (2) Xylem fiber
- (3) Tracheids
- (4) Xylem parenchyma

62. The example of leafy Bryophyte is :

- (1) Riccia
- (2) Anthroceros
- (3) Porella
- (4) Marchantia

63. The plant saffron is obtained from :

- (1) Sepals
- (2) Petals
- (3) Stamens
- (4) Stigma & style tops

64. Mendel published his findings on the principle of inheritance in the year :

- (1) 1857
- (2) 1753
- (3) 1866
- (4) 1900

65. Which scientist first discovered bacteria ?

- (1) Louis Pasteur
- (2) Robert Koch
- (3) Av Leeuwenhoek
- (4) Robert Hooke

66. The following is the hotspot of biodiversity in India :

- (1) Amarkantak
- (2) The Western Ghat
- (3) Panchmarhi
- (4) The Eastern Ghat

67. The name 'Molecular Scissor' is given to the enzyme :

- (1) Hydrogenase
- (2) Lipase
- (3) Endonuclease
- (4) Ligase

68. Fruit in which pericarp is fused with the seed coat is known as :

- (1) Berry
- (2) Caryopsis
- (3) Herperidium
- (4) Capsule

69. The formation of gametophyte directly from sporophyte tissue without spore formation is called :

- (1) Apospory
- (2) Apogamy
- (3) Heterospory
- (4) Porogamy

70. Who gave phylogenetic classification of plant ?

- (1) Linnaeus
- (2) Engler and Prantl
- (3) Bentham
- (4) Hooker

71. Which of the following immunoglobulins can pass through the placental barrier ?

- (1) IgD
- (2) IgG
- (3) IgE
- (4) None of the above

72. Hydra animal belongs to phylum :

- (1) Helminthes
- (2) Coelentrata
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73. A lysosome present in a cell has the function of :

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- (3) Birds
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80. When blood flows from the arteries into capillaries, BP ?

- (1) Decrease (2) Increase
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81. Poikilothermal term is associated with :

- (1) Warm blooded (2) External Fertilisation
(3) Tadpole Larva (4) Cold blooded

82. The yellow colour of urine is due to :

- (1) Uric acid (2) Bite juice
(3) Urea (4) Urochrome

83. Heterocrine is a composite gland and acts as :

- (1) Exocrine (2) Endocrine
(3) Both (1) & (2) (4) None of the above

84. The cells which are responsible for colour vision in vertebrates are :

- (1) Cone cells (2) Red cells
(3) Bipolar cells (4) All of the above

85. All are essential fatty acids except :

- (1) Stearic acid (2) Linolenic acid
(3) Arachidonic acid (4) Linoleic acid

86. A dimensionless quantity :
- (1) never has a unit (2) always has a unit
(3) may have a unit (4) None of the above
87. A ball of mass m moves with the speed v and it strikes normally with a wall and reflected back normally. If its time of contact with wall is t , then find the force exerted by the ball on the wall :
- (1) $\frac{mv}{2t}$ (2) mvt
(3) $\frac{mv}{t}$ (4) $\frac{2mv}{t}$
88. A man throws the bricks to height of 12 m, where they reach with a speed of 12 m/s. If he throws the bricks such that they just reach this height, what %age of energy he will have :
- (1) 19% (2) 38% (3) 76% (4) 57%
89. The initial velocity of a particle is u (at $t = 0$) and the acceleration f is given by, which of the following relation is valid ?
- (1) $v = u$ (2) $v = u + at$
(3) $v = u + \frac{1}{2}at^2$ (4) $s = u + at^2$
90. Torque applied on a particle is zero, then its angular momentum will be :
- (1) Equal in magnitude (2) Equal in direction
(3) Both (1) & (2) (4) None of the above

91. Which one of the following substance possesses the highest elasticity ?
- (1) Steel (2) Rubber
(3) Copper (4) Glass
92. A piece of wood is floating in water, when the temperature rises, the apparent weight of wood will :
- (1) Decrease (2) Increase
(3) Remain same (4) None of the above
93. Two wires of the same material but of different diameter carries the same current i . If the ratio of their diameter is 2 : 1, then corresponding ratio of their mean drift velocities will be :
- (1) 1 : 4 (2) 2 : 1 (3) 1 : 1 (4) 4 : 1
94. A transformer is a device which ?
- (1) Transforms frequency (2) Transform voltage
(3) Transform energy (4) Generate emf
95. Alternating current can not be measured by DC ammeter because :
- (1) AC is virtual
(2) AC changes its direction
(3) AC can not pass through DC ammeter
(4) Average value of complete cycle is zero

96. Focal length of plane mirror is :

- (1) Infinite
- (2) Zero
- (3) Indefinite
- (4) Very less

97. The number of solutions of the equation $\sin x + 2 \sin 2x = 3 + \sin 3x$ in the interval $(0, \pi)$ is :

- (1) 1
- (2) 3
- (3) 0
- (4) 2

98. A die is thrown 100 times, getting an even number is considered a success. The variance of the number of successes is :

- (1) 25
- (2) 12
- (3) 10
- (4) 18

99. In case of linear programming problems, feasible region is always :

- (1) a concave set
- (2) a bounded convex set
- (3) a bounded concave set
- (4) a convex set

100. An animal feed company must produce 200 kg of a mixture consisting of ingredients X_1 and X_2 . The ingredients X_1 cost Rs. 3.0/kg and X_2 costs Rs. 5.0/kg. Not more than 80 kg of X_1 can be used and at least 60 kg of X_2 must be used. Then which of the following is **not** correct ?

- (1) The number of decision variables are two
- (2) The number of constants are two
- (3) The problem has only one feasible point
- (4) The optimal solution is to mix 80 kg of ingredients X_1 and 120 kg of ingredient X_2 to have a minimum cost of Rs. 840/kg

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- (1) I_gD
- (2) I_gG
- (3) I_gE
- (4) None of the above

2. Hydra animal belongs to phylum :

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- (2) Coelentrata
- (3) Porifera
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(3) may have a unit (4) None of the above

27. A ball of mass m moves with the speed v and it strikes normally with a wall and is reflected back normally. If its time of contact with wall is t , then find the force exerted by the ball on the wall :

- (1) $\frac{mv}{2t}$ (2) mvt
(3) $\frac{mv}{t}$ (4) $\frac{2mv}{t}$

28. A man throws the bricks to height of 12 m, where they reach with a speed of 12 m/s. If he throws the bricks such that they just reach this height, what %age of energy he will have :

- (1) 19% (2) 38% (3) 76% (4) 57%

29. The initial velocity of a particle is u (at $t = 0$) and the acceleration f is given by, which of the following relation is valid ?

- (1) $v = u$ (2) $v = u + at$
(3) $v = u + \frac{1}{2}at^2$ (4) $s = u + at^2$

30. Torque applied on a particle is zero, then its angular momentum will be :

- (1) Equal in magnitude (2) Equal in direction
(3) Both (1) & (2) (4) None of the above

31. A two digit number is such that the product of the digit is 8. When 18 is added to the number, then the digits are reversed. The number is :
- (1) 18 (2) 24 (3) 42 (4) 81
32. If $A = X\%$ of Y and $B = Y\%$ of X , then which of the following is **true** ?
- (1) A is greater than B
- (2) Relationship between A and B can not be determined
- (3) If X is smaller than Y, then A is greater than B
- (4) None of the above
33. A man travelled a distance of 61 km in nine hours. He travelled partly on foot @ 4 km/hr and partly on horse @ 9 kmph. The distance covered on foot is :
- (1) 14 km (2) 15 km (3) 16 km (4) 17 km
34. What will be in place of question mark (?) in the following series ?
BZA, DYC, FXB, HWG, ?
- (1) VJI (2) JWU (3) JVI (4) VIJ
35. Sh. Jayant Kumar Magan Lal Vyas for his contribution in the field of Science & Engineering was awarded in the year 2022 :
- (1) Padma Bhushan
- (2) Padma Shri
- (3) Padma Vibhushan
- (4) None of the above

36. Forensic Science is defined as :

- (1) Application of scientific principles in the administration of justice
- (2) Application of scientific techniques in the administration of justice
- (3) Both (1) and (2)
- (4) None of the above

37. The origin of word forensic is from :

- (1) French
- (2) German
- (3) Latin
- (4) None of the above

38. The finger print patterns are categorized as :

- (1) Arch
- (2) Loop
- (3) Whorl
- (4) All of the above

39. In cyber forensic, the digital evidence exists in the form of :

- (1) Physical
- (2) Binary
- (3) Both (1) and (2)
- (4) None of the above

40. Sodium pentothal is a drug administered in lie detection test and that is named as :

- (1) Polygraph test
- (2) Layered Voice Analysis test
- (3) Narco test
- (4) SDS test

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- (1) Steel (2) Rubber
(3) Copper (4) Glass
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46. Focal length of plane mirror is :

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47. The number of solutions of the equation $\sin x + 2 \sin 2x = 3 + \sin 3x$ in the interval $(0, \pi)$ is :

- (1) 1
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- (3) 0
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- (1) Soddy (2) Fajan (3) Russel (4) Otto Hahn

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(3) Temperature (4) None of the above

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Total No. of Printed Pages : 21

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C

PG-EE-2022

SET-Y

SUBJECT : Forensic Science

10011

Sr. No.

Time : 1½ Hours

Max. Marks : 100

Total Questions : 100

Roll No. (in figures) _____ (in words) _____

Name _____ 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.**
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 will be got uploaded on the University website after the conduct of Entrance Examination. In case there is any discrepancy in the Question Booklet/Answer Key, the same may be brought to the notice of the Controller of Examinations in writing/through E.Mail within 24 hours of uploading the same on the University Website. 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.**

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- (1) Soddy (2) Fajan (3) Russel (4) Otto Hahn

59. Radioactive disintegration rate is affected by :

- (1) Pressure (2) Electric field
(3) Temperature (4) None of the above

60. The shape of molecule is distorted by :

- (1) Inert pair of electrons
(2) Ion pair of electron
(3) Bond pair of electron
(4) Both bond pair and inert pair of electrons

61. Which of the following immunoglobulins can pass through the placental barrier ?

- (1) I_gD (2) I_gG
(3) I_gE (4) None of the above

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- (1) Helminthes (2) Coelentrata
(3) Porifera (4) None of the above

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- (1) Bee rearing
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71. Poikilothermal term is associated with :

- (1) Warm blooded
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72. The yellow colour of urine is due to :
(1) Uric acid (2) Bite juice (3) Urea (4) Urochrome
73. Heterocrine is a composite gland and acts as :
(1) Exocrine (2) Endocrine
(3) Both (1) & (2) (4) None of the above
74. The cells which are responsible for colour vision in vertebrates are :
(1) Cone cells (2) Red cells
(3) Bipolar cells (4) All of the above
75. All are essential fatty acids except :
(1) Stearic acid (2) Linolenic acid
(3) Arachidonic acid (4) Linoleic acid
76. A dimensionless quantity :
(1) never has a unit (2) always has a unit
(3) may have a unit (4) None of the above
77. A ball of mass m moves with the speed v and it strikes normally with a wall and reflected back normally. If its time of contact with wall is t , then find the force exerted by the ball on the wall :
(1) $\frac{mv}{2t}$ (2) mvt (3) $\frac{mv}{t}$ (4) $\frac{2mv}{t}$

78. A man throws the bricks to height of 12 m, where they reach with a speed of 12 m/s. If he throws the bricks such that they just reach this height, what %age of energy he will have :
- (1) 19% (2) 38% (3) 76% (4) 57%
79. The initial velocity of a particle is u (at $t = 0$) and the acceleration f is given by, which of the following relation is valid ?
- (1) $v = u$ (2) $v = u + at$
(3) $v = u + \frac{1}{2}at^2$ (4) $s = u + at^2$
80. Torque applied on a particle is zero, then its angular momentum will be :
- (1) Equal in magnitude (2) Equal in direction
(3) Both (1) & (2) (4) None of the above
81. A two digit number is such that the product of the digit is 8. When 18 is added to the number, then the digits are reversed. The number is :
- (1) 18 (2) 24 (3) 42 (4) 81
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- (1) Padma Bhushan
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(3) Padma Vibhushan
(4) None of the above
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- (1) Application of scientific principles in the administration of justice
(2) Application of scientific techniques in the administration of justice
(3) Both (1) and (2)
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87. The origin of word forensic is from :

- (1) French
- (2) German
- (3) Latin
- (4) None of the above

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- (1) Arch
- (2) Loop
- (3) Whorl
- (4) All of the above

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- (1) Physical
- (2) Binary
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Used for Jumbling

A

Total No. of Printed Pages : 21

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

D

PG-EE-2022

SET-Y

SUBJECT : Forensic Science

10004

Sr. No.

Time : 1¼ Hours

Max. Marks : 100

Total Questions : 100

Roll No. (in figures) _____ (in words) _____

Name _____ 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.
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 will be got uploaded on the University website after the conduct of Entrance Examination. In case there is any discrepancy in the Question Booklet/Answer Key, the same may be brought to the notice of the Controller of Examinations in writing/through E.Mail within 24 hours of uploading the same on the University Website. 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.**

PG-EE-2022/(Forensic Science)-(SET-Y)/(D)

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11. Which one of the following substance possesses the highest elasticity ?

- (1) Steel (2) Rubber
(3) Copper (4) Glass

12. A piece of wood is floating in water, when the temperature rises, the apparent weight of wood will :

- (1) Decrease (2) Increase
(3) Remain same (4) None of the above

13. Two wires of the same material but of different diameter carries the same current i . If the ratio of their diameter is $2 : 1$, then corresponding ratio of their mean drift velocities will be :

- (1) $1 : 4$ (2) $2 : 1$ (3) $1 : 1$ (4) $4 : 1$

14. A transformer is a device which ?

- (1) Transforms frequency (2) Transform voltage
(3) Transform energy (4) Generate emf

15. Alternating current can not be measured by DC ammeter because :

- (1) AC is virtual
(2) AC changes its direction
(3) AC can not pass through DC ammeter
(4) Average value of complete cycle is zero

16. Focal length of plane mirror is :
- (1) Infinite (2) Zero
(3) Indefinite (4) Very less
17. The number of solutions of the equation $\sin x + 2 \sin 2x = 3 + \sin 3x$ in the interval $(0, \pi)$ is :
- (1) 1 (2) 3 (3) 0 (4) 2
18. A die is thrown 100 times, getting an even number is considered a success. The variance of the number of successes is :
- (1) 25 (2) 12 (3) 10 (4) 18
19. In case of linear programming problems, feasible region is always :
- (1) a concave set (2) a bounded convex set
(3) a bounded concave set (4) a convex set
20. An animal feed company must produce 200 kg of a mixture consisting of ingredients X_1 and X_2 . The ingredients X_1 cost Rs. 3.0/kg and X_2 costs Rs. 5.0/kg. Not more than 80 kg of X_1 can be used and at least 60 kg of X_2 must be used. Then which of the following is **not** correct ?
- (1) The number of decision variables are two
(2) The number of constants are two
(3) The problem has only one feasible point
(4) The optimal solution is to mix 80 kg of ingredients X_1 and 120 kg of ingredient X_2 to have a minimum cost of Rs. 840/kg

21. Which of the following immunoglobulins can pass through the placental barrier ?

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- (2) IgG
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40. Who coined the term taxonomy ?

- (1) de Candolle
- (2) Bentham
- (3) Braun
- (4) Thome

41. Atom is the smallest indivisible particle of matter was proposed in 1808 by :

- (1) J J Thomson
- (2) John Dalton
- (3) Rutherford
- (4) Bohr

42. The mass of neutron is of the order of :

- (1) 10^{-24} kg
- (2) 10^{-23} kg
- (3) 10^{-27} kg
- (4) 10^{-29} kg

43. The spectrum produced from an element is :

- (1) Absorption spectrum
- (2) Atomic spectrum
- (3) Line spectrum
- (4) All of the above

44. The angular momentum of an electron is zero. In which orbital it may be present ?

- (1) 2p
- (2) 4t
- (3) 2s
- (4) 2f

45. Ionisation potential for isotopes of an element is :

- (1) Different
- (2) Affected by atomic weight
- (3) Same
- (4) Affected by neutrons

46. The first element of a group in many ways different from the other heavier members of the group, which is due to ?
- (1) Unavailability of d orbital
 - (2) Small size
 - (3) High electronegative and high ionization potential
 - (4) All of the above
47. Which oxide is amphoteric in nature ?
- (1) Na_2O
 - (2) ZnO
 - (3) BaO
 - (4) CaO
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 - (2) Ion pair of electron
 - (3) Bond pair of electron
 - (4) Both bond pair and inert pair of electrons

51. Primary crime scene is defined :

- (1) Where actual criminal activity occurred
- (2) Where body of victim was found
- (3) Where weapon of offence was recovered
- (4) All of the above

52. In scanning electron microscope, the electron interact with atoms in the sample and provide information about :

- (1) The surface topography
- (2) Composition of sample
- (3) Both (1) & (2)
- (4) None of the above

53. Diatom test is used in cases of :

- (1) Firearm injuries
- (2) Soil analysis
- (3) Drowning cases
- (4) None of the above

54. The ABO blood-groups were discovered by :

- (1) Budowle
- (2) Landsteiner
- (3) Mendel
- (4) None of the above

55. An incised injury is caused with the help of :

- | | |
|---------------|------------------|
| (1) Knife | (2) Wooden stick |
| (3) Steel rod | (4) Brick |

56. Ganja is derived from the plant named :

- | | |
|--------------------|-----------------------|
| (1) Solanum Nigrum | (2) Cannabis Sativa |
| (3) Ulex Europeaus | (4) None of the above |

57. Glass on forensic evidence can be best analysed by :

- (1) Density gradient method
- (2) Magnifying lens
- (3) Inductively Coupled Plasma Optical Emission Spectrometry (ICP-OES)
- (4) All of the above

58. Osteometry is defined as :

- (1) Study and measurement of human skeleton
- (2) Study and measurement of animal skeleton
- (3) Both (1) & (2)
- (4) None of the above

59. A Single Barrel Break Loading (SBBL) firearm is where ?

- (1) The user loads ammunition via the rear end of its barrel
- (2) The user loads ammunition via the front end of its barrel
- (3) Both (1) & (2)
- (4) None of the above

60. The father of the science of questioned document examination is :

- (1) Dr. Alee Jaffrey
- (2) A S Curry
- (3) A S Osborn
- (4) C H Goddard

61. Buffer is a solution :

- (1) Which maintains its pH constant up on addition of small amount of acid or base
- (2) Mixture of weak acid
- (3) Mixture of weak base
- (4) Both (2) and (3)

62. Which one of the following is weak Lewis base ?

- (1) H^+
- (2) OH^-
- (3) HCO_3^-
- (4) Cl^-

63. The forces acting between nobel gas atoms are :

- (1) Magnetic forces
- (2) Ion dipole forces
- (3) Vander Waal's forces
- (4) London forces

64. The gas which is filled in tungsten lamp is :
(1) He (2) H_2 (3) Ar (4) O_2
65. The gas responsible for Bhopal gas tragedy was :
(1) Acid rain
(2) Methyl isocyanate gas
(3) Green house effect
(4) None of the above
66. The gas which has strong affinity towards haemoglobin and produces toxic effect is :
(1) NO_2 (2) CO
(3) SO_2 (4) None of the above
67. The most acidic among the following is :
(1) p-nitrophenol (2) p-chlorophenol
(3) o-cresol (4) p-cresol
68. A compound in which hydroxyl group is attached directly to the aromatic ring was discovered by :
(1) Runge (2) Rutherford
(3) Perkin (4) None of the above

69. When DDT passes into food chain, its concentration :
- (1) increases (2) decreases
(3) remains same (4) All of the above
70. Which of the following compound has the most de-shielding protons ?
- (1) CH_3I (2) CH_4
(3) CH_3Cl (4) CH_3Br
71. The living element of Xylem is known as :
- (1) Vessels (2) Xylem fiber
(3) Tracheids (4) Xylem parenchyma
72. The example of leafy Bryophyte is :
- (1) Riccia (2) Anthroceros
(3) Porella (4) Marchantia
73. The plant saffron is obtained from :
- (1) Sepals (2) Petals
(3) Stamens (4) Stigma & style tops
74. Mendel published his findings on the principle of inheritance in the year :
- (1) 1857 (2) 1753 (3) 1866 (4) 1900

75. Which scientist first discovered bacteria ?

- (1) Louis Pasteur
- (2) Robert Koch
- (3) Av Leeuwenhoek
- (4) Robert Hooke

76. The following is the hotspot of biodiversity in India :

- (1) Amarkantak
- (2) The Western Ghat
- (3) Panchmarhi
- (4) The Eastern Ghat

77. The name 'Molecular Scissor' is given to the enzyme :

- (1) Hydrogenase
- (2) Lipase
- (3) Endonuclease
- (4) Ligase

78. Fruit in which pericarp is fused with the seed coat is known as :

- (1) Berry
- (2) Caryopsis
- (3) Herperidium
- (4) Capsule

79. The formation of gametophyte directly from sporophyte tissue without spore formation is called :

- (1) Apospory
- (2) Apogamy
- (3) Heterospory
- (4) Porogamy

80. Who gave phylogenetic classification of plant ?

(1) Linnaeus

(2) Engler and Prantl

(3) Bentham

(4) Hooker

81. Mr. Ranil Wickrem Singhe from the United National Party of Sri Lanka occupied the position of :

(1) President

(2) Prime Minister

(3) Finance Minister

(4) All of the above

82. Mr. Raghuvendra Tanwar was awarded Padma Shri in 2022 in the field of :

(1) Trade & Industry

(2) Sports

(3) Science & Engineering

(4) Literature & Education

83. WHO Global Centre for Traditional Medicine (WHOGCTM) will be established in India ?

(1) Dehradun

(2) Jamnagar

(3) Gangtok

(4) Shillong

84. The US Census Bureau has projected the World Population to be :

(1) 7.0 billion

(2) 7.8 billion

(3) 8.0 billion

(4) 8.8 billion

85. Pointing to a girl, Vijay said, "This girl is daughter of only child of my father". What is the relation of Vijay's wife to that girl ?
- (1) Daughter (2) Sister
(3) Mother (4) Mother-in-law
86. Find the word which is different from others :
- (1) Cap (2) Veil (3) Turban (4) Hat
87. The difference between the times taken by two cars to travel a distance of 350 km is 2 hr and 20 minutes. If the difference between their speed is 5 kmph, find slower speed in kmph :
- (1) 35 (2) 20 (3) 25 (4) 30
88. A train covers a distance of 12 km in 10 minutes. If, it takes 6 seconds to pass a flag post, then the length of train is :
- (1) 120 m (2) 150 m (3) 200 m (4) 250 m
89. A hall is 15 m long and 12 m wide. If the sum of the areas of floor and ceiling is equal to the sum of the areas of four walls, the volume of the hall is :
- (1) 720 (2) 900 (3) 1200 (4) 1800
90. A sum of money is to distributed among A, B, C and D in the proportion of 5 : 2 : 4 : 3. If C gets Rs. 1,000 more than D, what is B's share ?
- (1) Rs. 500 (2) Rs. 1,500
(3) Rs. 2,000 (4) None of the above

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- (1) Warm blooded
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- (3) may have a unit
- (4) None of the above

97. A ball of mass m moves with the speed v and it strikes normally with a wall and reflected back normally. If its time of contact with wall is t , then find the force exerted by the ball on the wall :

(1) $\frac{mv}{2t}$

(2) mvt

(3) $\frac{mv}{t}$

(4) $\frac{2mv}{t}$

98. A man throws the bricks to height of 12 m, where they reach with a speed of 12 m/s. If he throws the bricks such that they just reach this height, what %age of energy he will have :

(1) 19%

(2) 38%

(3) 76%

(4) 57%

99. The initial velocity of a particle is u (at $t = 0$) and the acceleration f is given by, which of the following relation is valid ?

(1) $v = u$

(2) $v = u + at$

(3) $v = u + \frac{1}{2}at^2$

(4) $s = u + at^2$

100. Torque applied on a particle is zero, then its angular momentum will be :

(1) Equal in magnitude

(2) Equal in direction

(3) Both (1) & (2)

(4) None of the above

Answer key M.Sc. (Forensic Science) session 2022-23				
Q. No.	A	B	C	D
1	4	2	1	2
2	4	2	3	4
3	2	4	3	3
4	4	3	3	3
5	3	2	2	2
6	2	4	2	3
7	3	1	1	3
8	1	3	1	4
9	3	1	1	2
10	3	1	3	3
11	2	2	1	1
12	4	1	3	3
13	3	1	3	1
14	3	2	2	2
15	2	1	1	4
16	3	2	2	1
17	3	4	3	3
18	4	3	3	1
19	2	2	1	4
20	3	1	3	2
21	1	4	4	2
22	3	4	4	2
23	3	3	2	4
24	2	1	4	3
25	1	1	3	2
26	2	1	2	4
27	3	4	3	1
28	3	2	1	3
29	1	3	3	1
30	3	2	3	1
31	2	2	1	2
32	3	4	3	1
33	4	3	1	1
34	3	3	2	2
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37	2	3	3	4
38	4	4	1	3
39	3	2	4	2
40	2	3	2	1
41	1	1	4	2
42	3	3	3	3
43	3	1	4	4
44	3	2	3	3
45	2	4	3	3
46	2	1	2	2
47	1	3	3	2
48	1	1	2	4
49	1	4	1	3
50	3	2	2	2

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Q. No.	A	B	C	D
51	2	4	2	1
52	1	3	3	3
53	1	4	4	3
54	2	3	3	2
55	1	3	3	1
56	2	2	2	2
57	4	3	2	3
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61	4	2	2	1
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92	3	4	1	4
93	1	2	1	3
94	2	4	2	1
95	4	3	1	1
96	1	2	2	1
97	3	3	4	4
98	1	1	3	2
99	4	3	2	3
100	2	3	1	2

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