

TEST CODE PHET-415
ENTRANCE TEST-2021
FORENSIC Sc.

(To be filled by the Candidate/निम्न पूर्तियाँ परीक्षार्थी स्वयं भरें)

Name of Candidate

परीक्षार्थी का नाम

Roll No. (in figures)

अनुक्रमांक (अंकों में)

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Maximum Marks : 70

अधिकतम अंक : 70

Exam. Centre

परीक्षा केन्द्र

Time : 2 Hour

समय : 2 घण्टे

No. of Pages in Question Booklet : 32 (including Cover Pages) No. of Questions in Booklet : 100

SEAL

Signature of Invigilator

निरीक्षक के हस्ताक्षर

Instructions to the Examinee :

1. Do not open the Question Booklet unless you are asked to do so.
2. The Question Booklet contains 100 questions. Each questions carry 0.70 marks. Examinee is required to answer all 100 questions in the OMR Answer-Sheet and not in the Question Booklet. All questions carry equal marks.
3. Examine the Question Booklet and OMR Answer-Sheet very carefully before you proceed. Faulty Question Booklet due to missing or duplicate paper/question or having any other discrepancy should be immediately replaced.

परीक्षार्थियों के लिए निर्देश :

1. प्रश्न-पुस्तिका को तब तक न खोलें जब तक आपसे कहा न जाये।
2. प्रश्न-पुस्तिका में 100 प्रश्न हैं। प्रत्येक प्रश्न 0.70 अंक का है। परीक्षार्थी को सभी प्रश्नों को केवल दी गई OMR उत्तर-पत्रक (शीट) पर ही हल करना है, प्रश्न-पुस्तिका पर नहीं। सभी प्रश्नों के अंक समान हैं।
3. प्रश्नों के उत्तर अंकित करने से पूर्व प्रश्न-पुस्तिका तथा OMR उत्तर-पत्रक (शीट) को सावधानीपूर्वक देख लें। दोषपूर्ण प्रश्न-पुस्तिका जिसमें कुछ भाग छपने से छूट गये हों या एक से अधिक बार छप गये हों या उसमें किसी अन्य प्रकार की कमी हो, उसे तुरन्त बदल लें।

(Remaining instructions on last page)

(शेष निर्देश अन्तिम पृष्ठ पर)

Section - A

1. What is not the characteristic of Data?

- (A) Reliability
- (B) Relevance
- (C) Ephemerality
- (D) Completeness

2. Match list I with List II and select the correct answer from the codes given below the lists :

(i)	Convenience sampling	(P)	If population is hard to access this type of sampling is used to recruit participants via other participants
(ii)	Snowball sampling	(Q)	It includes the individuals who happen to be most accesible to the researcher
(iii)	Purposive Sampling	(R)	This type of sampling is based on ease of access where instead of researcher choosing participants people volunteer themselves
(iv)	Voluntary response sampling	(S)	This type of sampling involves the researcher using their expertise to select a sample that is most useful to the purposes of research.

Codes :	(i)	(ii)	(iii)	(iv)
(A)	P	Q	R	S
(B)	Q	P	S	R
(C)	P	S	Q	R
(D)	P	R	Q	S

3. It is the type of probability sampling method where researcher selects the members of the population at regular interval
 - (A) Cluster sampling
 - (B) Dimensional sampling
 - (C) Systematic sampling
 - (D) Stratified sampling

4. A subset of a population selected for measurement, observation or questioning to provide statistical information about the population is called
 - (A) Representative
 - (B) Cluster
 - (C) Sample
 - (D) Para Meter

5. The intelligence test is prepared to measure the intelligence of a person. The test is used by the psychologist and educationists to measure the intelligence of the students intelligence is measured in terms of intelligence quotient (IQ) which is given by :
 - (A) $IQ = \text{Chronological Age} / \text{Mental age} \times 10$
 - (B) $IQ = \text{Chronological Age} / \text{Mental age} \times 100$
 - (C) $IQ = \text{Mental age} / \text{Chronological age} \times 100$
 - (D) $IQ = (\text{Mental age} / \text{chronological age})^2$.

6. What is not true about census and sample.
 - (A) Census method is effective for a heterogenous population whereas sample method is effective if the study is on limited units in a popluation.
 - (B) Monitoring and organization is relatively easy in census than sampling
 - (C) The results borne out of verification cannot be verified in census whereas possible in sampling
 - (D) None of the above

7. The difficulty index indicates how difficult an item is? The formula used for the calculation of “Item difficulty Index” of each item is given by :

- (A) $IDI = R/N$
- (B) $IDI = N/R \times 100$
- (C) $IDI = (R/N)^{1/2}$
- (D) $IDI = N/R$

Where R = Number of right responses

N= Total number of candidates attempting that item

8. In a scientific study, a is used to establish cause and effect relationship by isolating the effect of independent variable.

- (A) Experimental group
- (B) Control group
- (C) Both (A) and (B)
- (D) None of the above

9. Assertion – Reason Questions :

The question consists of two statements, an assertion (A) and a reason (R). The answer choices in a typical A/R question are usually the following with “A” meaning “Assertion” and “R” meaning “Reason.”

Assertion : Experiments are used to study casual Relationship, you manipulate one or more Independent variables and measure their effect on one or more dependent variables

Reason! Design experimental treatments to manipulate your independent variable.

- (A) Both A & R are true and R is a correct explanation of A
- (B) Both A & R are true but R is not a correct explanation of A.
- (C) A is true but R is false
- (D) A is false but R is true.

10. It means using various phrases, passages and ideas from different sources to create a kind of 'patchwork' of other researcher's work without proper citation.
- (A) Copy and paste plagiarism
 - (B) Self plagiarism
 - (C) Mosaic plagiarism
 - (D) Global plagiarism
11. It refers to the process of transforming collected information or observations to a set of meaningful, cohesive categories :
- (A) Coding of data
 - (B) Sampling
 - (C) Data modelling
 - (D) Observation
12. The reciprocal of the arithmetic mean of the reciprocal of the values is called :
- (A) Geometric mean
 - (B) Harmonic mean
 - (C) Arithmetic mean
 - (D) Mode
13. Measure of central tendency indicates the location or the general position of the data on the X-axis therefore it is also known as a measure of location or position, which of the following is not the purpose of measure of tendency
- (A) It removes all the unnecessary details of the data and gives a concise picture of the huge data
 - (B) It is very useful in computing other statistical measures such as dispersion, skewness and kurtosis etc.
 - (C) It cannot be used for the purpose of comparison
 - (D) None of the above.

14. It is the graphical measure for estimating in equalities in distribution :
- (A) Quartile deviation
 - (B) Ogive
 - (C) Lorenz curve
 - (D) None of the above
15. The conceptual framework and background of research which will become the source for formulation of hypothesis is known as :
- (A) Methodology
 - (B) Review of literature
 - (C) Data analysis
 - (D) None of the above
16. Which of the following must be mentioned by the researcher in the report :
- (A) Problems in collecting the data
 - (B) Possible discrepancies in data collection
 - (C) Suggestions to subsequent investigators on the same topic in the same context
 - (D) All the above.

17. Assertion Reason question :

Assertion (A) an impactful research usually creates a minimum bias in data and increases trust in the accuracy of collected data.

Reason (R) A design that produces the least margin of error in experimental research is generally considered the desired outcome

- (A) Both A & R are true and R is a correct explanation of A
- (B) Both A & R are true but R is not the correct explanation of A
- (C) 'A' is true but 'R' is false
- (D) "A" is false but 'R' is true

18. This type of research design establishes a relationship between the cause and effect of a situation. It is a casual design where one observes the impact caused by the independent variable on the dependent variable.

- (A) Correctional research design
- (B) Explanatory research design
- (C) Descriptive research design
- (D) Experimental research design

19. Computer assisted personal interviewing, is a form of personal interviewing method of data collection but instead of completing a questionnaire, the interviewer brings along a laptop or hand held computer to enter the information directly into the database. Which is/are not true about this method :

- (i) Does not save time involved in processing the data
 - (ii) Can be expensive to set up
 - (iii) The interviewer has to carry around hundreds of the questionnaires
 - (iv) Requires that interviewers have computer and typing skills.
- (A) i, ii, & iii
 - (B) i & iii
 - (C) ii & iv
 - (D) i & iv

20. It is referred to as specific category scale, in this type of scale, the respondent selects or pick the one of the best characteristics of the object being rated :

- (A) Itemized Rating Scale
- (B) Graphic Rating Scale
- (C) Numerical Rating Scale
- (D) Descriptive Scale

21. Assertion Reason :

Assertion (A) A primary source is anything that gives you direct evidence about the people events or phenomena that you are researching. Primary sources will usually be the main objects of your analysis.

Reason (R) Secondary sources support or contrast you arguments with other researcher's ideas.

- (A) Both A and R are true and R is the correct explanation of A
- (B) Both A and R are true but R is not a correct explanation of A
- (C) A is true but R is false
- (D) A is false but R is true

22. When the observations are arranged in increasing order then the values, that divide the whole data into (10) equal parts, are called

- (A) Quartiles
- (B) Deciles
- (C) Percentiles
- (D) None of the above

23. The sum of 10 values is 100 and the sum of their squares is 1,090. Find the coefficient of variation.
- (A) 20
(B) 13
(C) 3
(D) 30
24. The best way to determine whether a statistically significant difference in two means is of practical importance is to?
- (A) Repeat the experiment with same sample size and check if the difference is statistical significant again
(B) Find a 95% confidence interval and notice the magnitude of the difference
(C) If p-value is extremely small
(D) Both A and C
25. Find the range of the following frequency distribution class interval

Class Interval	Frequency
0-3	6
3-6	8
6-9	12
9-12	5
12-15	4

- (A) 12
(B) 25
(C) 22
(D) 32
26. It is defined as the positive square root of the arithmetic mean of the square of the deviations of the given observations from their arithmetic mean :
- (A) Standard Deviation
(B) Measure of Dispersion
(C) Coefficient of Variation
(D) Median your opinion about the statement

27. "The absolute measures of dispersion will have the original units."
- (A) The statement is true
 - (B) The statement is false
 - (C) No opinion can be given
 - (D) None of the above
28. It describes have an independent variable is associated with the dependent variable :
- (A) Correlation
 - (B) Regression
 - (C) Mean
 - (D) Standard Deviation
29. This is main type of case studies in qualitative research which is used to collect information from different sources at different times.
- (A) Illustrative case study
 - (B) Exploratory case study
 - (C) Cumulative case study
 - (D) Critical instance case study
30. What are the characterized of a good hypothesis :
- (i) It is formulated in the form of a question
 - (ii) It should specify variables between which the relationship is to be established.
 - (iii) It should be specific and precise
 - (iv) It should be empirically stable
- (A) (i), (ii), (iii) is correct but (iv) incorrect
 - (B) (ii), (iii), (iv) are correct but (i) incorrect
 - (C) (i), (ii), (iv) are correct but (iii) is incorrect
 - (D) All are corrects

31. The variables which measures some counter quantity and don't have any boundaries are termed as

- (A) Dependent Variable
- (B) Categorical variables
- (C) Continuous variables
- (D) Independent variables

32. Match the following :

- | | |
|----------------------------|--|
| (i) Ratio variables | (P) A variable that can only take a certain number of values |
| (ii) Discrete variables | (Q) Extra variable that has a hidden effect on your experimental results |
| (iii) Control variables | (R) A factor in experiment which must be held constant |
| (iv) Confounding variables | (S) Similar to interval variables but has a meaningful zero |

	I	II	III	IV
A	S	R	Q	P
B	S	R	P	Q
C	S	P	R	Q
D	P	Q	R	S

33. It shows the relationship between two or more dependent variables and two or more independent variables:

- (A) Simple Hypothesis
- (B) Complex Hypothesis
- (C) Null Hypothesis
- (D) Directional Hypothesis

34. Binomial, poisson and discrete are the most common forms of :
- (A) Distributions
 - (B) Sample
 - (C) Population
 - (D) None
35. Critical value is a point beyond which we :
- (A) Accept the null hypothesis
 - (B) Reject the null hypothesis
 - (C) May accept or reject the null hypothesis
 - (D) No opinion
36. Which of the following tests the strength of association between two ordinal variables
- (A) Pearson correlation
 - (B) Chi-Square
 - (C) Spearman correlation
 - (D) None of the above
37. Match the following :
- | | |
|-------------------------|---|
| (i) Paired T-test | (P) It tests the strength of association between two categorical variables |
| (ii) Independent T-test | (Q) It tests the difference between two related variables |
| (iii) ANOVA | (R) It tests the difference between the two Independent variables |
| (iv) Chi-Square | (S) It tests the difference between set means after any other variance in the resulting variables |
-
- | | I | II | III | IV |
|-----|---|----|-----|----|
| (A) | Q | R | S | P |
| (B) | P | Q | R | S |
| (C) | Q | S | R | P |
| (D) | Q | P | S | R |

38. An example of scientific knowledge is :
- (A) Social traditions and costumes
 - (B) Authority of the prophet
 - (C) Laboratory and field experiments
 - (D) Religious scriptures
39. Bibliography given in a research report :
- (A) Shows the vast knowledge of the researcher
 - (B) Helps those interested in further research and studying the problem from another angle
 - (C) Both A & B
 - (D) None of the above
40. After the data has been processed and analysed the research process requires :
- (A) Reporting of data
 - (B) Interpretation of data
 - (C) Testing of data
 - (D) Presentation of data
41. What is the first step of data processing?
- (A) Data input
 - (B) Data processing
 - (C) Data collection
 - (D) Data output
42. In APA style the list of references should be in order by :
- (A) Alphabetical by title
 - (B) Alphabetical by first author's last name
 - (C) Chronological by date of publication.
 - (D) Alphabetical by first author's first name

43. This type of rating error occurs when a rater tends to rate an individual high or low on several characteristics because of a general impression that the rater has towards subject whom he is rating:
- (A) Logical Error
 - (B) Generosity Error
 - (C) Personal Bias
 - (D) Halo Effect
44. Item writing is one of the very important aspects of the test construction. After the items are written, they are carefully analyzed and reviewed. In item analysis it is important to follow objectives like:
- (i) It should be helpful to indicate difficulty level of the item such as which is more difficult, moderate or easy.
 - (ii) It should not provide indication regarding the ability of the item to discriminate between inferior and superior item.
- (A) Both (i) & (ii) are correct
 - (B) (i) is correct but (ii) is incorrect
 - (C) (ii) is correct but (i) is incorrect
 - (D) Both (i) and (ii) are incorrect
45. Assertion/Reason
- Assertion (A) : In quantitative research design, a researcher examines various variables including numbers as well as statistics in a project to analyze its findings
- Reason (R) : Case studies are mainly used in qualitative research design in order to understand various social complexities.
- (A) Both A and R are true and R is a correct explanation of A
 - (B) Both A and R are true but R is not a correct explanation of A
 - (C) A is true but R is false
 - (D) A is false but R is true

46. Linear regression is a linear method to model the relationship between your independent variables and your dependent variables, which of the following is not an advantage of linear regression?
- (A) Robust statistical model
 - (B) Helps is to take a rational call on the logical front
 - (C) Data must be independent
 - (D) None of the above
47. What is the conceptual frame work in which the research is carried out?
- (A) Research hypothesis
 - (B) Synopsis of Research
 - (C) Review of literature
 - (D) Research design
48. The populatin census carried out by the Government of India can be an example of :
- (A) Descriptive Research
 - (B) Casual Research
 - (C) Exploratory Research
 - (D) None of the above
49. Which of the following is not the purpose of research?
- (A) Exploratory
 - (B) Description
 - (C) Employability
 - (D) Application
50. A researcher is interested in how weight influences self esteem levels in adults which research method will be most appropriate for this study?
- (A) Experimental method
 - (B) Historical method
 - (C) Ex-post factor method
 - (D) Descriptive survey method

Section - B

51. The interse colour of haemoglobin is caused by :

- (A) Iron
- (B) Porphyrin
- (C) Globin
- (D) All of the above

52. Match the following :

- | | |
|------------------|---|
| (i) Avulsion | (P) It is a superficial injury involving only the outer layers of the skin and not penetrates the full thickness of the epidermis |
| (ii) Abrasion | (Q) It is a partial or complete tearing away of skin and the tissue beneath |
| (iii) Erythema | (R) Such wounds are caused by blunt force splitter the full thickness of the skin |
| (iv) Lacerations | (S) These are the non permanent evidence of traumaing caused by initial vaso dilation and release of vasoactive peptides |

- | | I | II | III | IV |
|-----|---|----|-----|----|
| (A) | S | P | Q | R |
| (B) | P | R | Q | S |
| (C) | Q | P | R | S |
| (D) | Q | P | S | R |

53. Read the statement carefully and state whether it is true or false :

“No person other than medical practitioner enrolled on a state medical register shall be entitled to give evidence at any in quest or in any court of law as an expert under section 45 of the Indian Evidence Act, 1872 on any matter relating to medicine.”

- (A) True
- (B) False
- (C) May be correct
- (D) May not be correct

54. Which of the following is not a class characteristic of bullet rifling marks?
- (A) The number of lands and grooves, which are usually between 4 and 6 but making range from 2 to 22
 - (B) The diameter of the lands and grooves
 - (C) The width of the lands and the grooves
 - (D) The depth of the lands
55. FTIR spectroscopy is based on :
- (A) Rutherford Experiment
 - (B) Young, Davidson and German experiment
 - (C) Michelson and Morley experiment
 - (D) Robert Millikan experiment
56. The Widmark equation gives an approximation of the peak BAC. According to this equation peak BAC (in mg%) equals alcohol ingested (in grams) X 100, divided by corrected body weight (in kgs x Widmark factor; where the Widmark factor is :
- (A) An estimate of body water content
 - (B) An estimate of adipose tissue
 - (C) Both A & B
 - (D) None of the above
57. What is true about Black Powder :
- (A) Black powder is produced in several different grades of increasing grain size like fg, ffg, ffg and fffg where fffg has largest grain size.
 - (B) Generally speaking, fffg powder is best suited for muzzleloading rifles and pistols smaller than 45 caliber.
 - (C) The product of burning is 80% gaseous and 20% solid
 - (D) All of the above

58. Match the following :

Inventors	Contribution
(i) Consden, Gordon & Martin	(P) First Mass spectrometer
(ii) Yost and Enke	(Q) Chemical Ionization
(iii) Munson and Field	(R) Triple quadrupole MS first
(iv) J.J. Thomson	(S) Described paper partition chromatography

	I	II	III	IV
(A)	P	R	S	Q
(B)	R	Q	P	S
(C)	S	Q	R	P
(D)	S	R	Q	P

59. Another name for LIVOR MORTIS is :

- (A) Adipocere
- (B) Cadaveric Spasm
- (C) Post-mortem Suggilation
- (D) None of the above

60. The most common flies whose larvae (meggots) feed on corpses belong to :

- (A) Calliphoridae
- (B) Sacrophagidae
- (C) Both A & B
- (D) None of the above

61. What level of CO is rapidly fatal

- (A) At 50 ppm
- (B) At 100 ppm
- (C) At 5000 ppm
- (D) None of the above

62. Prior to evidence collection, the investigator should ensure the integrity of explosive and kombing scene by :
- (i) Establish procedures to document personnel entering and exiting the scene
 - (ii) Establish and document procedures to prevent scene contamination
 - (iii) Establish and document procedures for evidence collection control and chain of custody
- (A) Only (i) & (ii) but not (iii)
- (B) Only (ii) & (iii) but not (i)
- (C) (i), (ii) & (iii)
- (D) Only (ii) but not (i) & (iii)
63. The British Proof value is times the percentage alcohol concentration by volume!
- (A) Twice the alcohol percentage by volume
- (B) 1.75 times alcohol percentage by volume
- (C) 3 times alcohol percentage by volume
- (D) Half the alcohol percentage by volume
64. The example of pyrethrins/pyrethroids used to control insects is :
- (A) Carbo furan
- (B) Chlordane
- (C) Chlorpyrifos
- (D) None of the above

65. The efficiency of chromatographic separation increases with
- (i) Decrease in the number of theoretical plates
 - (ii) Increase in the number of theoretical plates
 - (iii) Decrease in the HETP
 - (iv) Increase in the HETP
- (A) (ii) and (iv) are correct
- (B) (i) and (ii) are correct
- (C) (i), (ii) & (iv) are correct
- (D) Both (ii) & (iii)
66. Which is not the application of distillation process?
- (A) Purification of organic solvents
 - (B) Separation of volatile oils
 - (C) Purification of drugs obtained from chemical process
 - (D) None of the above
67. Which of the following is not a sedative drug?
- (A) Chloral hydrate
 - (B) Clonazepam
 - (C) Ephedrine
 - (D) Diazepam

68. Who was called as the “Sherlock Holmes of France”?
- (A) Edmond Locard
 - (B) Henry Goddard
 - (C) Sir Francis Galton
 - (D) Sir Edward Henry
69. The minimum velocity shown as threshold velocity, required to penetrate the skin is found to be?
- (A) 40-50 m/s
 - (B) 40-50 cm/s
 - (C) Less than 30 m/s
 - (D) Less than 40 cm/s
70. In the court, it is true that :
- (A) Notes cannot be used to refresh the memory while on the witness stand
 - (B) Notes cannot be shown to jury
 - (C) Defense counsel may examine notes used
 - (D) Defense counsel cannot read the notes aloud in the court.
71. What is/are the reason to observe deviations from the Beer-lambert law where there is breakdown of linear relationship between absorbance and the concentration of the absorbing molecule.
- (i) High sample concentration
 - (ii) Chemical reactions
 - (iii) Use of monochromatic radiation
- (A) Only (i)
 - (B) (i) & (ii)
 - (C) (i), (ii) & (iii)
 - (D) None

72. The type of photography that can for example reveal the outline of a footprint in carpet even though the fibers have returned to the normal position.
- (A) Microphotography
 - (B) Ultraviolet light photography
 - (C) Laser-beam photography
 - (D) Macro photography
73. What is not true about pigment?
- (i) More likely to fade with light exposure
 - (ii) Needs a vehicle
 - (iii) Mostly used in inks, paints, plastic
- (A) (i), (ii) & (iii)
 - (B) (iii) only
 - (C) (ii) only
 - (D) (i) only
74. The strength of adsorption of polar groups (solutes) on polar support is in the order of:
- (A) Olefins < Ethers < Esters < Aldehydes < Amines < Phenols < Acids
 - (B) Acids < phenols < Amines < Aldehydes < Esters < Ethers < Olefine
 - (C) Olefins < Amines < Ethers < Esters < Aldehydes < Phenols < Acids
 - (D) Acids < Phenols < Aldehydes < Esters < Ethers < Amines < Olefins

75. The standard size of A4 paper is :

- (A) 105×148 mm
- (B) 210×297 mm
- (C) 297×420 mm
- (D) 148×210 mm

76. Assertion/Reason

Assertion (A) : Blood stains on cloth should be collected after drying in shade under room heater

Reason R : It causes disintegration of blood stains

- (A) Both (A) & (R) are correct
- (B) (A) is correct but (R) is incorrect
- (C) (A) is incorrect but (R) is correct
- (D) (A) & (R) are incorrect

77. What is not true about DNA :

- (i) DNA can exist in 3 form : A-DNA, B-DNA and Z-DNA
 - (ii) The DNA double helix is held together by the forces : hydrogen bonds and base stacking interactions
 - (iii) The Watson-Crick structure is also known as B-join DNA is the most unstable structure of DNA.
- (A) (i) & (ii)
 - (B) (iii) only
 - (C) (ii) only
 - (D) None of the above

78. What is not the application of Gel filtration chromatography?

- (A) Separation of amino acids from peptides and proteins
- (B) Separation of myoglobin haemoglobin
- (C) Study of drug and hormone interactions with proteins
- (D) Desalting of colloids

79. Assertion/Reason

Assertion (A) : Radio frequency waves find applications in nuclear magnetic resonance and electron paramagnetic resonance spectroscopy

Reason (R) : Radio frequency region has very low energies that correspond to the energy differences in the nuclear and electron spin states

- (A) A is true but R is false
- (B) Both A & R are true but R is not the correct explanation of A.
- (C) Both A & R are false
- (D) A is false but R is true.

80. Factors affecting electrophoretic mobility

- (i) Higher the charge lesser the electrophoretic mobility
- (ii) Bigger the molecule greater are the frictional and electrostatic forces exerted on it by the medium, therefore, larger particles have smaller electrophoretic mobility
- (iii) Rounded contours exhibit lesser frictional and electrostatic retardation compared to sharp contours

- (A) (i), (ii) are correct but (iii) is incorrect
- (B) (i) & (iii) are correct but (ii) incorrect
- (C) (i) is incorrect but (ii) & (iii) are correct
- (D) (i) & (ii) are incorrect but (iii) is correct

81. NEC developed the first working system of AFIS in 1982 and delivered it to :
- (A) Argentina Police Department
 - (B) Scotland Police
 - (C) Japanese National Police Agency
 - (D) San Francisco Police Department
82. The class characteristics examined during examination of documents from Fax machines, photocopier and computer printers.
- (i) Type of paper
 - (ii) Type of toner to paper fusing method
 - (iii) Defects in toner
- (A) (i) & (ii) but not (iii)
 - (B) (i) & (iii) but not (ii)
 - (C) (ii) & (iii) but not (i)
 - (D) All of them
83. What is the basis for the determination of the primary classification of fingerprints?
- (A) The presence or absence of arch patterns
 - (B) The presence or absence of loop patterns
 - (C) The presence or absence of whorl patterns
 - (D) All of the above

84. This section of Information and Technology Amendment Act (ITAA) 2008 states that publishing obscene information or pornography or transmission of obscene context in public is liable for imprisonment upto 5 years or fine of 10,00,000 rupees or both.
- (A) Section 43
 - (B) Section 67A
 - (C) Section 66F
 - (D) Section 66E
85. Which is not a type of zone electrophoresis?
- (A) Gel electrophoresis
 - (B) Paper Electrophoresis
 - (C) Cellulose Active Electrophoresis
 - (D) Micro Electrophoresis
86. The bore of the 12 bore gun is
- (A) 0.723"
 - (B) 0.727"
 - (C) 0.729"
 - (D) 0.731"
87. Radioactivity of a substance can be measured by
- (A) TCD detector
 - (B) Flame Ionization detector
 - (C) EC Detector
 - (D) Geiger Muller counter

88. Match the following :

List-I		List-II	
(i)	Cardiac	(P)	Brucine
(ii)	Deliriant	(Q)	Calotropin
(iii)	Spiral	(R)	Aconite
(iv)	Irritant	(S)	Cannabinoid
	(i)	(ii)	(iii) (iv)
(A)	R	P	S Q
(B)	P	Q	R S
(C)	S	P	Q R
(D)	R	S	P Q

89. Assertion/Reason :

Assertion (A) The bone age of a child indicates his other level of biological and structural maturity

Reason (R) : Radiography of the hand and wrist is the commonest modality used to calculate bone age.

- (A) (A) is correct but (R) is incorrect
- (B) (A) is incorrect but (R) is correct
- (C) Both (A) & (R) are correct
- (D) Both (A) & (R) are incorrect

90. Which of the following is used to color motor gasoline?

- (A) Phenyle azo-2-naphthol
- (B) Eosine
- (C) Di-alblyl amino anthra quinone
- (D) Erythrosine

91. Assertion (A) : DNA fingerprinting is very useful in forensic science

Reason (R) : It is the method in which individual patterns of DNA fragment is determined through the number and position of specific repeated sequence.

- (A) (A) & (R) are true and (R) is the correct explanation of A
- (B) (A) & (R) are true but (R) is not the correct explanation of (A)
- (C) (A) is true but (R) is false
- (D) (A) is false but (R) is true

92. Match the following :

List-I	List-II
(i) Partition chromatography	(P) Solid on which liquid or gas specific molecules are immobilized
(ii) Ion Exchange chromatography	(Q) Solid resin that carries fixed ions and mobile counter ions of opposite charge attached by covalent bonds
(iii) Molecular exclusion chromatography	(R) Porous gel with no attractive action on solute molecules
(iv) Affinity chromatography	(S) Thin film of liquid formed on the surface of a solid inert support

	(i)	(ii)	(iii)	(iv)
(A)	S	Q	P	R
(B)	P	Q	R	S
(C)	S	Q	R	P
(D)	P	R	Q	S

93. Ludwig Teichman from Poland developed

- (A) The first microscopic aystal test for haemoglobin
- (B) First presumptive test for blood
- (C) Use of toxicology for Arsenic detection
- (D) The microscopic detection of sperm

94. Walker Test of GSR is done for the identification of presence of :

- (A) Matallic residue
- (B) Nitrate
- (C) Nitrite
- (D) Sulphur

95. Amatol consist of :

- (A) TNT and RDX
- (B) TNT and Tetryl
- (C) TNT and PETN
- (D) TNT and Ammonium Nitrate

96. The fibers from petroleum are known as :
- (A) Synthetic fibers
 - (B) Natural
 - (C) Artificial
 - (D) Regenerated
97. Spin-spin coupling is observed in :
- (A) Raman spectroscopy
 - (B) Newton Activation Analysis
 - (C) Mass spectrometry
 - (D) None of the above
98. Which of the following sutures of the skull are the first to fuse?
- (A) Coronal
 - (B) Frontal
 - (C) Sagittal
 - (D) Lamdoid
99. Arsenic is deposited in skin, hair and nails because the keratin found there is rich in
- (i) Sulfhydryle group
 - (ii) Hydroxyl group
 - (iii) Ester groups
- (A) (i) & (ii)
 - (B) (i) only
 - (C) (ii) & (iii)
 - (D) (ii) only
100. Assertion (A) : Exact superimposition of one's signature is indicator of simulation jorgery
- Reason (R) : Two hand writings of same individual are supposed to differ to an extent due to presence of natural variation.
- (A) (A) is true but (R) is false
 - (B) Both A & R are true but R is not the exact explanation of A
 - (C) A is false but R is true
 - (D) Both A & R are false

ROUGH WORK

4. Four alternative answers are mentioned for each questions as A, B, C & D in the Question Booklet. The candidate has to choose the most appropriate and correct answer and mark the same in the OMR Answer sheet as per the direction:

Example :

Q1 (A) ● (C) (D)
Q2 (A) (B) ● (D)
Q3 (A) ● (C) (D)

Illegible answers with cutting and over-writing will be cancelled.

5. In case the candidate does not fill the appropriate circle in the Answer-Sheet and leave blank 'Zero' mark will be given.
6. The candidate has to mark answers on the OMR Answer-Sheet with **Black or Blue Ball Point Pen** only Carefully as per directions. **Do not use lead pencil.**
7. The examinee will make sure that OMR Answer-Sheet is handed over to the invigilator before leaving the examination hall.
8. Rough work, if any, should be done on the blank page provided for the purpose at the end of Question booklet.
9. Write your Roll Number and other required details in the space provided on the title page of the booklet and on the OMR Answer-sheet.
10. To bring and use of log-book, calculator, cellular phone & electronic devices in examination hall is strictly prohibited.
11. In case of any discrepancy or difference in English and Hindi Version of Questions in Booklet, English Version shall be treated/taken as final.
12. The examinee may carry the Question Booklet after the completion of Examination.
13. University will not be responsible for incorrect entries in the OMR sheet by candidates.

4. प्रश्न-पुस्तिका में प्रत्येक प्रश्न के चार सम्भावित उत्तर हैं (A, B, C & D)। परीक्षार्थी को उन चारों विकल्पों में से एक सबसे सही तथा सबसे उपयुक्त उत्तर छाँटना है। उत्तर को आन्सर-शीट में सम्बन्धित प्रश्न संख्या में निम्न प्रकार भरना है :

उदाहरण :

Q1 (A) ● (C) (D)
Q2 (A) (B) ● (D)
Q3 (A) ● (C) (D)

अपठित उत्तर या ऐसे उत्तर जिन्हें काटा या बदला गया है, निरस्त कर दिये जायेंगे।

5. यदि परीक्षार्थी आन्सर-शीट में उपयुक्त गोले को नहीं भरता है और आन्सर-शीट को खाली छोड़ देता है, तो 'शून्य' अंक प्रदान किया जायेगा।
6. अभ्यर्थी को प्रश्नों के उत्तर OMR आन्सर-शीट पर केवल **काले या नीले बॉल प्वाइंट पेन** से निर्देशानुसार अंकित करने होंगे। **पेन्सिल का प्रयोग न करें।**
7. परीक्षा की समाप्ति पर परीक्षा भवन छोड़ने से पूर्व परीक्षार्थी को OMR आन्सर-शीट निरीक्षक के पास अनिवार्यतः जमा करनी होगी।
8. परीक्षार्थी को रफ कार्य, प्रश्न पुस्तिका के अन्त में, रफ कार्य के लिए दिये खाली पेज पर ही करना चाहिए।
9. प्रश्न-पुस्तिका के मुख्यपृष्ठ पर तथा OMR आन्सर-शीट पर निर्धारित स्थान में अनुक्रमांक तथा अन्य विवरण भरें।
10. परीक्षा कक्ष में लॉग-बुक, कैल्कुलेटर, सैल्युलर फोन तथा इलेक्ट्रॉनिक उपकरणों ले जाना तथा उसका उपयोग करना वर्जित है।
11. प्रश्न-पुस्तिका में प्रश्नों के हिन्दी तथा अंग्रेजी अनुवाद में यदि कोई भिन्नता पाई जाती है तो ऐसी स्थिति में अंग्रेजी को ही सही/अन्तिम माना जाएगा।
12. परीक्षार्थी परीक्षा समाप्ति के पश्चात् प्रश्न-पुस्तिका अपने साथ ले जा सकते हैं।
13. विश्वविद्यालय OMR शीट पर आवेदकों द्वारा गलत जानकारी भरने पर जिम्मेदार नहीं होगा।