

PREVIEW QUESTION BANK

Module Name : SCPH27 Statistics - ENG
Exam Date : 27-Oct-2023 Batch : 14:30-17:30

Sr. No.	Client Question ID	Question Body and Alternatives	Marks	Negativ Marks
Objective Question				
1	993001	What are the options available with advance search in google scholar? A. Search based on exact word B. Search based on year of publication C. Search excluding specific word D. Search based on author's name E. Search based on publisher Choose the most appropriate answer from the options given below: 1. A, B, D and E only 2. A, B, C and D only 3. B,C,D and E only 4. A, B, C, D and E A1 : 1 A2 : 2 A3 : 3 A4 : 4	4.0	0.00
Objective Question				
2	993002	Software 'Zotero' is a 1. Search engine 2. Reference manager 3. Citation manager 4. h-index indicator A1 : 1 A2 : 2 A3 : 3 A4 : 4	4.0	0.00
Objective Question				
3	993003		4.0	0.00

		What are the most widely used classifications of measurement scales? A. Nominal scale B. Ordinal scale C. Technical scale D. Interval scale E. Ratio scale Choose the most appropriate answer from the options given below: 1. A, B, D and E only 2. A, B, C and D only 3. B, C, D and E only 4. A, C, D and E only A1 : 1 A2 : 2 A3 : 3 A4 : 4		
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Objective Question

4	993004	Which of the following tools are used as reference manager A. Endnote B. Mendeley C. iThenticate Choose the most appropriate answer from the options given below: 1. A and C only 2. B and C 3. A and B only 4. A, B and C A1 : 1 A2 : 2 A3 : 3 A4 : 4	4.0	0.00
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Objective Question

5	993005	A researcher should select a Journal for publication based on which of the following criteria? A. Aim and scope of the journal B. Whether the journal is open access C. Terms and conditions of the journal D. Duration of the journal for the reviewer's comment Choose the most appropriate answer from the options given below: 1. A, B and C only 2. B, C and D only 3. A, B, C and D 4. A and B only	4.0	0.00
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		A1 : 1		
		A2 : 2		
		A3 : 3		
		A4 : 4		

Objective Question

6	993006	Advance search in Google scholar is used for 1. Reference management 2. Coding 3. Citation of publication 4. Precise search of publication A1 : 1 A2 : 2 A3 : 3 A4 : 4	4.0	0.00
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Objective Question

7	993007	Which of the following parameters are essential for publication of a manuscript according to the editor? A. Manuscript is written in proper format B. Manuscript falls under aims and scope of the journal C. Referencing should be done only using a reference manager tool D. There should not be any plagiarism in the manuscript E. Authors contribution is clearly mentioned Choose the most appropriate answer from the options given below: 1. A, B, C and D only 2. A, B, D and E only 3. B, C, D and E only 4. A, B, C, D and E A1 : 1 A2 : 2 A3 : 3 A4 : 4	4.0	0.00
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Objective Question

8	993008		4.0	0.00
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		What are the possible sources of error while performing any measurement? A. Instrument B. Respondent C. Measurer D. Hypothesis E. Situation Choose the most appropriate answer from the options given below: 1. A, D and C only 2. A, B, C and E only 3. A, B, C and D only 4. A, B, C, D and E A1 : 1 A2 : 2 A3 : 3 A4 : 4		
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Objective Question

9	993009	Which of the following are the tests of proper measurement? A. Test of Validity B. Test of Reliability C. Test of Suitability D. Test of Practicality Choose the most appropriate answer from the options given below: 1. A, B and C only 2. A, B and D only 3. B, C, and D only 4. A, B, C and D A1 : 1 A2 : 2 A3 : 3 A4 : 4	4.0	0.00
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Objective Question

10	993010		4.0	0.00
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Arrange the following in a correct sequence for four-stage process of developing measurement tools

- A. Specification of concept dimensions
- B. Selection of indicators
- C. Concept development
- D. Formation of index

Choose the correct answer from the options given below:

- 1. B, A, D, C
- 2. A, B, C, D
- 3. D, C, A, B
- 4. C, A, B, D

A1 : 1

A2 : 2

A3 : 3

A4 : 4

Objective Question

11	993011	Which of the following approaches are used for ranking scales? A. Method of ratio level B. Method of paired comparisons C. Method of rank order Choose the most appropriate answer from the options given below: 1. A and B only 2. C only 3. A, B and C 4. B and C only A1 : 1 A2 : 2 A3 : 3 A4 : 4	4.0	0.00
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Objective Question

12	993012		4.0	0.00
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		Which of the following approaches are used for scale construction? A. Consensus scale approach B. Item analysis approach C. Factor analysis approach D. Arbitrary approach E. Cumulative scale approach Choose the most appropriate answer from the options given below: 1. A, C and E only 2. A, B, C and D only 3. A, B, C, D and E 4. A, C, D and E only A1 : 1 A2 : 2 A3 : 3 A4 : 4		
Objective Question				
13	993013	Which are the factors that a researcher should keep in mind while selecting appropriate method for data collection? A. Availability of funds B. Time factor C. Nature and scope of the enquiry D. Ease of using the method E. Precision Choose the most appropriate answer from the options given below: 1. A, B, C and D only 2. A, B, D and E only 3. A, B, C and E only 4. A, B, C, D and E A1 : 1 A2 : 2 A3 : 3 A4 : 4	4.0	0.00
Objective Question				
14	993014	A research type that accurately portrays characteristics of particular individual, situation or a group is called as: 1. Formulative research 2. Descriptive research 3. Exploratory research 4. Diagnostic research A1 : 1	4.0	0.00

A2 : 2

A3 : 3

A4 : 4

Objective Question

15	993015	A researcher interested to investigate the reasons for human behaviour, should conduct A. Quantitative research B. Qualitative research C. Motivation research D. Analytical research Choose the most appropriate answer from the options given below: 1. B and C only 2. A and D only 3. B only 4. B, C and D only A1 : 1 A2 : 2 A3 : 3 A4 : 4	4.0	0.00
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Objective Question

16	993016	Study of causal relationship between variables comes under which category of research study? 1. Descriptive research study 2. Exploratory research study 3. Hypothesis-testing research study 4. Fundamental research study A1 : 1 A2 : 2 A3 : 3 A4 : 4	4.0	0.00
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Objective Question

17	993017	Study of experimental designs has originated from 1. Social science research 2. Agricultural research 3. Statistical research 4. Chemical research A1 : 1	4.0	0.00
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A2 : 2

A3 : 3

A4 : 4

Objective Question

18	993018	Prof. R.A. Fisher is associated with : 1. Observational design and operation of research 2. Experimental design in social science research 3. Experimental design in agricultural research 4. Statistical design and analysis of experiment A1 : 1 A2 : 2 A3 : 3 A4 : 4	4.0	0.00
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Objective Question

19	993019	Which of the following are the principles of experimental design? A. Replication B. Randomization C. Statistical analysis D. Local control Choose the most appropriate answer from the options given below: 1. A, B and D only 2. A, B and C only 3. A, B, C and D 4. B, C and D only A1 : 1 A2 : 2 A3 : 3 A4 : 4	4.0	0.00
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Objective Question

20	993020		4.0	0.00
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Which of the following are the alternative hypothesis to test whether the population mean (μ) is equal to the hypothesis mean (μ_{H0})?

- A. $H_a : \mu \neq \mu_{H0}$
- B. $H_a : \mu < \mu_{H0}$
- C. $H_0 : \mu = \mu_{H0}$
- D. $H_a : \mu > \mu_{H0}$

Choose the most appropriate answer from the options given below:

- 1. A, D and C only
- 2. B and D only
- 3. C only
- 4. A, B and D only

A1 : 1

A2 : 2

A3 : 3

A4 : 4

Objective Question

21	993021	If the significance level is 5 percent in two-tailed test, the probability of the acceptance area will be: 1. 0.95 2. 0.095 3. 95 4. 9.5 A1 : 1 A2 : 2 A3 : 3 A4 : 4	4.0	0.00
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Objective Question

22	993022	If a population does not follow normal distribution, which kind of test can be performed? A. <i>U</i> test B. Chi square test C. Wilcoxon-Mann-Whitney test D. <i>F</i> test E. Kruskal-Wallis test Choose the most appropriate answer from the options given below: 1. A, B and C only 2. C, D and E only 3. A, C and E only 4. B, C and E only A1 : 1	4.0	0.00
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		A2 : 2		
		A3 : 3		
		A4 : 4		

Objective Question

23	993023	Which of the following are parametric tests? A. z-test B. <i>U</i>-test C. <i>t</i>-test D. χ^2 -test E. <i>F</i>-test Choose the most appropriate answer from the options given below: 1. A, B, C and D only 2. A, C, D and E only 3. B, C, D and E only 4. A, B, C, D and E A1 : 1 A2 : 2 A3 : 3 A4 : 4	4.0	0.00
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Objective Question

24	993024	Find out the h-index of a researcher based on the citations of the publication given below 1st publication - 10 citations 2nd publication - 8 citations 3rd publication - 7 citations 4th publication - 5 citations 5th publication - 4 citations 6th publication - 3 citations 1. 3 2. 4 3. 5 4. 7 A1 : 1 A2 : 2 A3 : 3 A4 : 4	4.0	0.00
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Objective Question

25	993025		4.0	0.00
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		How the Impact Factor of a journal is calculated? 1. Total number of citations of a journal/ Total number of publications of that journal 2. Number of citations of a journal in last one year/ Number of publications of that journal in last one year 3. Number of citations of a journal in last two years/ Number of publications of that journal in last two years 4. Number of citations of a journal in last three years/ Number of publications of that journal in last three years A1 : 1 A2 : 2 A3 : 3 A4 : 4		
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Objective Question

26	993026	Find out the i-10 index of a researcher from the following data: 1st publication - 12 citations 2nd publication - 13 citations 3rd publication - 15 citations 4th publication - 8 citations 5th publication - 7 citations 6th publication - 10 citations 7th publication - 11 citations 1. 4 2. 5 3. 6 4. 7 A1 : 1 A2 : 2 A3 : 3 A4 : 4	4.0	0.00
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Objective Question

27	993027		4.0	0.00
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		For bivariate populations, correlation can be studied through - Karl Pearson's coefficient of correlation - Coefficient of partial correlation - Coefficient of multiple correlation - Charles Spearman's coefficient of correlation - Cross tabulation Choose the most appropriate answer from the options given below: - A, D and E only - A, B and C only - A, B and D only - B, D and E only A1 : 1 A2 : 2 A3 : 3 A4 : 4		
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Objective Question

28	993028	Simple regression analysis defines the relationship between: - Dependent and extraneous variable - Independent and extraneous variable - Dependent and independent variable - Two different dependent variables A1 : 1 A2 : 2 A3 : 3 A4 : 4	4.0	0.00
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Objective Question

29	993029	Which one of the following tools is used to detect plagiarism? - Turnitin - MS Word - Google scholar - Zotero A1 : 1 A2 : 2 A3 : 3 A4 : 4	4.0	0.00
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Objective Question

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993030

Match List I with List II

4.0

0.00

LIST I		LIST II	
A.	Descriptive research	I.	To gain familiarity with a phenomenon or to develop new insights about it
B.	Exploratory research	II.	To test a hypothesis defining (causal) relationship between variables
C.	Diagnostic research	III.	To describe the characteristics of a particular situation, group or individual
D.	Hypothesis-testing research	IV.	To determine the frequency with which something occurs or with which it is associated with something else

Choose the correct answer from the options given below:

1. A-II, B- I, C - IV, D - III

2. A-II, B- III, C - IV, D - I

3. A-III, B- II, C - IV, D - I

4. A-III, B- I, C - IV, D - II

A1 : 1

A2 : 2

A3 : 3

A4 : 4

Objective Question

31	993031	If the aim of a research project is to 'develop a flood tolerant variety of rice', then the nature of the research project can be defined as: 1. Applied research 2. Fundamental research 3. Quantitative research 4. Descriptive research A1 : 1 A2 : 2 A3 : 3 A4 : 4	4.0	0.00
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Objective Question

32	993032		4.0	0.00
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Which of the following statements best describe the difference between 'Research Method' and Research Methodology'?

- A. 'Research Method' pertains to the technique whereas 'Research Methodology' is the over-all experimental plan.
- B. 'Research Methodology' pertains to the technique whereas 'Research Method' is the over-all experimental plan.
- C. 'Research Methods' are used for quantitative research whereas 'Research Methodology' is used for qualitative research.
- D. 'Research Methods' are used for qualitative research whereas 'Research Methodology' is used for quantitative research.

Choose the most appropriate answer from the options given below:

- 1. A and C only
- 2. B and C only
- 3. A only
- 4. B and C only

A1 : 1

A2 : 2

A3 : 3

A4 : 4

Objective Question

33	993033	Before conducting an actual experiment (any method) which of the following should be done? A. Formulating of the research problem B. Survey of the literature C. Develop a working hypothesis D. Analyze the data. Choose the most appropriate answer from the options given below: 1. A, B, C and D 2. A, B and C only 3. C and D only 4. A and D only A1 : 1 A2 : 2 A3 : 3 A4 : 4	4.0	0.00
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Objective Question

34	993034		4.0	0.00
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		Which of the following can be regarded as an example of a 'Qualitative' research? A. Identifying the causal pathogen for rice 'stem borer' disease in India. B. Estimating the area of land under basmati rice cultivation in the year 2023. C. Identifying the Covid 19 virus strain/s infecting people in Delhi. D. Identifying the most prevalent Covid 19 virus strain infecting people in Delhi. Choose the most appropriate answer from the options given below: 1. A and B only 2. A and C only 3. C and D only 4. B and D only A1 : 1 A2 : 2 A3 : 3 A4 : 4		
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Objective Question

35	993035	'Experimental error' can be defined as the: 1. impact of 'independent variable' on the value of dependent variable 2. impact of 'dependent variable' on the value of independent variable 3. impact of 'extraneous variable' on the value of dependent variable 4. value of 'extraneous variable' A1 : 1 A2 : 2 A3 : 3 A4 : 4	4.0	0.00
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Objective Question

36	993036	Which of the following traits can be regarded as an example of 'continuous variable'? 1. Basic Metabolic Rate (BMR) 2. RBC count 3. Number of patients infected with Nepha virus 4. WBC count A1 : 1 A2 : 2 A3 : 3 A4 : 4	4.0	0.00
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Objective Question

37	993037	In a research project designed to estimate the impact of rainfall on wheat production, which of the following can be considered as an 'Extraneous' variable? 1. Amount of rainfall 2. Weight of wheat grains 3. Accuracy of the weighing balance 4. Level of soil moisture in the wheat field A1 : 1 A2 : 2 A3 : 3 A4 : 4	4.0	0.00
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Objective Question

38	993038	In order to understand the prevalence of Covid 19 virus infection in different states of India, 100 samples were collected from each of the different states of India. This type of sampling can be defined as: 1. Stratified sampling 2. Simple random sampling 3. Systematic sampling 4. Convenience sampling A1 : 1 A2 : 2 A3 : 3 A4 : 4	4.0	0.00
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Objective Question

39	993039	'Sampling Error' can be defined as: 1. a wrong data recording 2. a wrong interpretation of the data 3. the difference between the value of 'Population mean' and the 'Sample mean' 4. an instrumental error A1 : 1 A2 : 2 A3 : 3 A4 : 4	4.0	0.00
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Objective Question

40	993040		4.0	0.00
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		Which one of the following data collection exercises would require an 'Informed consent' ? 1. Collection of blood samples from HIV patients 2. Estimation of rice crop yield in different villages of Punjab 3. Estimating the number of passengers travelling/week in Delhi metro 4. Estimating the number of non-Delhi passengers travelling/week in Delhi metro A1 : 1 A2 : 2 A3 : 3 A4 : 4		
Objective Question				
41	993041	Which of the following CANNOT be patented? 1. A new technology for sequencing human genome 2. A naturally occurring basmati rice variety 3. A precision breeding technology 4. Plant imaging technology A1 : 1 A2 : 2 A3 : 3 A4 : 4	4.0	0.00
Objective Question				
42	993042	Contents compiled as a research article in a scientific journal is protected by: 1. Patent rights 2. Copyright 3. 'Trademark' rights 4. 'Design' rights A1 : 1 A2 : 2 A3 : 3 A4 : 4	4.0	0.00
Objective Question				
43	993043		4.0	0.00

		Indian patent laws operate under: 1. 'First to modify' principle 2. 'First to discover' principle 3. 'First to invent' principle 4. 'First to file' principle A1 : 1 A2 : 2 A3 : 3 A4 : 4		
Objective Question				
44	993044	At global level, which one of the following research methodologies is being applied to both human and agricultural sciences? 1. Machine learning 2. Cancer research 3. Breeding 4. Hybrid development A1 : 1 A2 : 2 A3 : 3 A4 : 4	4.0	0.00
Objective Question				
45	993045	The traditional knowledge of utilization of natural plant based products for human health is protected under: 1. Protection of plant variety and farmer's right 2. Indian copyright law 3. National Biodiversity Act 4. Indian trademark law A1 : 1 A2 : 2 A3 : 3 A4 : 4	4.0	0.00
Objective Question				
46	993046		4.0	0.00

		Use of which one of the following research methodologies is rapidly increasing in the last few years in India? 1. Genome sequencing of various crop plant varieties 2. Estimation of crop yields 3. Impact of floods on crop yield 4. Impact of drought on crop yield A1 : 1 A2 : 2 A3 : 3 A4 : 4		
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Objective Question

47	993047	Which one of the following is a primary source of genome sequence datasets? 1. UniProtKB 2. GenBank 3. SwissProt 4. Protein Data Bank A1 : 1 A2 : 2 A3 : 3 A4 : 4	4.0	0.00
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Objective Question

48	993048	A good research design must include details: A. about how the data would be collected B. availability of funds C. availability of relevant skills D. objective Choose the most appropriate answer from the options given below: 1. A and D only 2. A, C and D only 3. B only 4. A, B, C and D A1 : 1 A2 : 2 A3 : 3 A4 : 4	4.0	0.00
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Objective Question

49	993049	Ideally a 'research problem' should : A. be financially viable B. address a novel phenomenon C. should be socially relevant D. have been extensively worked upon by predecessors. Choose the most appropriate answer from the options given below: 1. A and B only 2. A, B and C only 3. A and D only 4. B, C and D only A1 : 1 A2 : 2 A3 : 3 A4 : 4	4.0	0.00
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Objective Question

50	993050	Which one of the following research methods (technique) is being widely used to detect infection of Covid19 virus? 1. RT-Polymerase Chain Reaction 2. Polymerase Chain Reaction 3. Flow cytometry 4. X-ray A1 : 1 A2 : 2 A3 : 3 A4 : 4	4.0	0.00
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Objective Question

51	993051	Consider the following system of linear equations: $X + Y + Z = 3, \quad X + aZ = b, \quad Y + 2Z = 3$ The system has infinite number of solutions if 1. $a = -1, \quad b = 0$ 2. $a = 1, \quad b = 2$ 3. $a = 0, \quad b = 1$ 4. $a = -1, \quad b = 1$ A1 : 1 A2 : 2 A3 : 3	4.0	0.00
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A4 : 4

Objective Question

52	993052	The area of the region $\{(x, y); 0 \leq x, y \leq 1, \frac{3}{4} \leq x + y \leq \frac{3}{2}\}$ is 1. $9/16$ 2. $7/16$ 3. $13/32$ 4. $19/32$ A1 : 1 A2 : 2 A3 : 3 A4 : 4	4.0	0.00
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Objective Question

53	993053	If A is 3×3 non-zero matrix such that A^2 is a null matrix, then the number of non-zero eigenvalues of A is 1. 0 2. 1 3. 2 4. 3 A1 : 1 A2 : 2 A3 : 3 A4 : 4	4.0	0.00
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Objective Question

54	993054	Define $f, g : \mathbb{R} \rightarrow \mathbb{R}$ by $f(x) = \begin{cases} x, & \text{if } x \in \mathbb{Q} \\ \sin x, & \text{if } x \in \mathbb{R} - \mathbb{Q} \end{cases} \text{ and } g(x) = \begin{cases} x \sin x \sin \frac{1}{x}, & \text{if } x \neq 0 \\ 0, & \text{if } x = 0 \end{cases}$ At $x = 0$ 1. both f and g are differentiable 2. f is differentiable but g is not differentiable 3. g is differentiable but f is not differentiable 4. neither f is differentiable nor g is differentiable A1 : 1 A2 : 2	4.0	0.00
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A3 : 3

A4 : 4

Objective Question

55	993055	If a sequence $\{x_n\}$ is monotone and bounded, then 1. there exists a subsequence of $\{x_n\}$ that diverges 2. there may exist a subsequence of $\{x_n\}$ that is not monotone 3. all subsequence of $\{x_n\}$ converge to the same limit 4. there exist at least two subsequences of $\{x_n\}$ which converges to distinct limits A1 : 1 A2 : 2 A3 : 3 A4 : 4	4.0	0.00
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Objective Question

56	993056	If one artificial variable appears with zero value in last simplex tableau, then the current solution to the original problem will be: 1. Non-generate 2. Degenerate 3. Valid 4. Invalid A1 : 1 A2 : 2 A3 : 3 A4 : 4	4.0	0.00
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Objective Question

57

993057

Match List I with List II

4.0

0.00

LIST I		LIST II	
A.	Characteristic function	I.	increasing, constant, decreasing hazard rate
B.	Exponential Distribution	II.	independent neither of origin nor of scale
C.	Constant Hazard Rate	III.	memory less property
D.	Gamma Distribution	IV.	exponential distribution

Choose the correct answer from the options given below:

1. A-II, B-III, C-IV, D-I
2. A-I, B-III, C-IV, D-II
3. A-III, B-II, C-IV, D-I
4. A-II, B-III, C-IV, D-I

A1 : 1

A2 : 2

A3 : 3

A4 : 4

Objective Question

58	993058	If $M = [X \ Y \ Z]$ is an orthogonal matrix with $X, Y, Z \in \mathbb{R}^3$ as its column vector, then $Q = XX^T + YY^T$ _____ 1. is a skew-symmetric matrix 2. is a 3×3 identity matrix 3. satisfies $Q^2 = Q$ 4. satisfies $QZ = Z$ A1 : 1 A2 : 2 A3 : 3 A4 : 4	4.0	0.00
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Objective Question

59	993059	Gomory's cut method in LP problems is used for obtaining: 1. Integer solution 2. Basic solution 3. Non-basic solution 4. Non-integer solution A1 : 1 A2 : 2 A3 : 3 A4 : 4	4.0	0.00
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Objective Question

60	993060		4.0	0.00
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Let Y be an exponential random variable with mean $1/\theta$, where $\theta > 0$. If the conditional distribution of X given Y has Poisson distribution with mean Y , then the variance of X is

1. $\frac{1}{\theta^2}$
2. $\frac{\theta+1}{\theta}$
3. $\frac{\theta^2+1}{\theta^2}$
4. $\frac{\theta+1}{\theta^2}$

A1 : 1

A2 : 2

A3 : 3

A4 : 4

Objective Question

61	993061	The maximum and minimum value of the quadratic form $4x_1^2 + 4x_2^2 + 6x_1x_2$ for all point $x' = (x_1, x_2)$ such that $x'x = 1$ 1. (7, 1) 2. (4, 4) 3. (6, 2) 4. (5, 3) A1 : 1 A2 : 2 A3 : 3 A4 : 4	4.0	0.00
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Objective Question

62	993062	If E, F and G be three events such that E and F are mutually exclusive $P(E \cup F) = 1$, $P(E \cap G) = \frac{1}{4}$ and $P(G) = \frac{7}{12}$, then $P(F \cap G)$ equals 1. 1/12 2. 1/4 3. 5/12 4. 1/3 A1 : 1 A2 : 2 A3 : 3	4.0	0.00
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A4 : 4

Objective Question

63	993063	Let $X_1, X_2, \dots$ be a sequence of i.i.d $N(0, 1)$ random variables as $n \rightarrow \infty$, $\frac{1}{n} \sum_{i=1}^n X_i^2$ converges in probability to 1. 0 2. 0.5 3. 1 4. 2 A1 : 1 A2 : 2 A3 : 3 A4 : 4	4.0	0.00
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Objective Question

64	993064	Let X_1, X_2, X_3 be independent random variables with X_k ($k = 1, 2, 3$) having the probability density function $f_k(x) = \begin{cases} k\theta e^{-k\theta x}, & \text{if } 0 < x < \infty \\ 0, & \text{otherwise} \end{cases} \quad \text{where } \theta > 0$ Then a sufficient statistic for θ is 1. $X_1 + X_2 + X_3$ 2. $3X_1 + 2X_2 + X_3$ 3. $X_1 + X_2 + 3X_3$ 4. $X_1 + 2X_2 + 3X_3$ A1 : 1 A2 : 2 A3 : 3 A4 : 4	4.0	0.00
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Objective Question

65	993065	Let X_1, X_2 and X_3 be i.i.d. $U(0, 1)$ random variables. Then $E\left(\frac{X_1 + X_2}{X_1 + X_2 + X_3}\right)$ equals 1. 1/3 2. 1/2 3. 2/3 4. 3/4 A1 : 1 A2 : 2	4.0	0.00
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A3 : 3

A4 : 4

Objective Question

66	993066	The total number of Latin Squares of order 5×5 is 1. 728 2. 1, 61, 280 3. 576 4. 1, 50, 295 A1 : 1 A2 : 2 A3 : 3 A4 : 4	4.0	0.00
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Objective Question

67

993067

Match List I with List II

4.0

0.00

LIST I		LIST II	
A.	A convex set cannot have	I.	integer solution
B.	Duality	II.	can have non basic solution
C.	Non basic optimal solution	III.	LPP
D.	Gomory's cut method	IV.	infinitely many extream points

Choose the correct answer from the options given below:

1. A - III, B - IV, C - II, D - I

2. A - IV, B - II, C - III, D - I

3. A - IV, B - III, C - I, D - II

4. A - IV, B - III, C - II, D - I

A1 : 1

A2 : 2

A3 : 3

A4 : 4

Objective Question

68	993068	Let $X_1, X_2, \dots, X_n$ ($n > 1$) be random sample from Exp.(1) Then the distribution of $2n\bar{X}$ is 1. Exp.(1/2) 2. Exp.(2n) 3. $\chi^2_{(n)}$ 4. $\chi^2_{(2n)}$	4.0	0.00
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A1 : 1

A2 : 2

A3 : 3

A4 : 4

Objective Question

69	993069	When loss function is $\text{Log } a - \text{Log } \theta$, the Bayes estimate is 1. Posterior Mean 2. Posterior Mode 3. Posterior Median 4. Posterior Variance A1 : 1 A2 : 2 A3 : 3 A4 : 4	4.0	0.00
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Objective Question

70	993070	Let $X_1, X_2, \dots, X_n$ ($n > 1$) be random sample of size n from $N(\mu, 16)$ population. If 95% confidence interval for μ is $[\bar{X} - 0.98, \bar{X} + 0.98]$ then the value of n is 1. 4 2. 16 3. 32 4. 64 A1 : 1 A2 : 2 A3 : 3 A4 : 4	4.0	0.00
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Objective Question

71	993071	Consider the Markov chain with two states 1 and 2. Suppose that $P_{12} = a$, $P_{21} = b$. For which values of a and b, do we obtain an absorbing Markov Chain: 1. $a = 0, b \neq 0$ 2. $a \neq 0, b = 0$ 3. $a = 0, b = 0$ 4. $a \neq 0, b \neq 0$ A1 : 1	4.0	0.00
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		A2 : 2		
		A3 : 3		
		A4 : 4		

Objective Question

72	993072	Which of the following is not a property of the Characteristic function (c.f.)? 1. c.f. is bounded. 2. c.f. of some independent random variables is the product of c.f.'s of the individual random variables. 3. Two random variables can have the same distribution of their c.f.'s are identical. 4. c.f. of a symmetrical random variable is a real-valued and odd. A1 : 1 A2 : 2 A3 : 3 A4 : 4	4.0	0.00
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Objective Question

73	993073	If the arrival and departure rates in a M/M/I queue are 1/2 per minute and 2/3 per minute respectively, then the average waiting time for a customer in a queue is 1. 3.5 2. 2.5 3. 4.5 4. 5.5 A1 : 1 A2 : 2 A3 : 3 A4 : 4	4.0	0.00
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Objective Question

74	993074	Let the random variable X follow binomial distribution with parameters 3 and θ. A test of hypothesis $H_0 : \theta = 3/4$ against $H_1 : \theta = 1/4$ rejects H_0 if $X \leq 1$. What are the size and power of the test? 1. size = 5/32, power = 27/32 2. size = 5/32, power = 18/32 3. size = 15/32, power = 27/32 4. size = 1/32, power = 31/32 A1 : 1 A2 : 2 A3 : 3	4.0	0.00
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A4 : 4

Objective Question

75	993075	When main and auxiliary variable are positively correlated and the line of regression pass through origin, which method of estimation is used for parameter estimation? 1. Regression Method 2. Ratio Method 3. Product Method 4. Ratio Product Method A1 : 1 A2 : 2 A3 : 3 A4 : 4	4.0	0.00
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Objective Question

76	993076	If X is any random variable with mean μ and variance 9, then what is the smallest value of m such that $P[X - \mu < m] \geq 0.99$? 1. 90 2. $\sqrt{90}$ 3. $\sqrt{100/11}$ 4. 30 A1 : 1 A2 : 2 A3 : 3 A4 : 4	4.0	0.00
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Objective Question

77	993077	If the random variable X, Y and Z have the mean $\mu_x = 2$, $\mu_y = -3$ and $\mu_z = 2$, the variance $\sigma_x^2 = 1$, $\sigma_y^2 = 5$ and $\sigma_z^2 = 2$ and $\text{Cov}(X, Y) = -2$, $\text{Cov}(X, Z) = -1$ and $\text{Cov}(Y, Z) = 1$, then the variance of $W = 3X - Y + 2Z$ is 1. 17 2. 18 3. 20 4. 22 A1 : 1 A2 : 2 A3 : 3	4.0	0.00
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		A4 : 4		
Objective Question				
78	993078	Which of the following techniques yields a simple random sample? 1. Choosing volunteers from an introductory Psychology class to participate. 2. Listing the individuals by ethnic group and choosing a proportion from within each ethnic group at random. 3. Randomly selecting schools and then sampling everyone within the school. 4. Numbering all the elements of a sampling frame and then using a random number table to pick cases from the table. A1 : 1 A2 : 2 A3 : 3 A4 : 4	4.0	0.00
Objective Question				
79	993079	If a continuous random variable X satisfies the functional relationship $P(X > t + x) = P(X > t) \cdot P(X > x)$ for all $t > 0, x > 0$, then X follows the _____ 1. Poisson Distribution 2. Normal Distribution 3. Exponential Distribution 4. Gamma Distribution A1 : 1 A2 : 2 A3 : 3 A4 : 4	4.0	0.00
Objective Question				
80	993080	If X is a numerical variable and Y be a categorical with two categories, then the Point Bi-serial correlation between these two variables is given by: 1. $\frac{Cov(X, Y)}{\sqrt{Var(X) \cdot Var(Y)}}$ 2. $\frac{Cov(X, Y)}{Var(X) \cdot Var(Y)}$ 3. $\left(\frac{\bar{Y}_0 - \bar{Y}_1}{\sigma_x} \right) \sqrt{p_0 p_1}$ 4. $\left(\frac{\bar{Y}_0 + \bar{Y}_1}{\sigma_x} \right) \sqrt{p_0 p_1}$ A1 : 1	4.0	0.00

A2 : 2

A3 : 3

A4 : 4

Objective Question

81	993081	Let $X_1, X_2, \dots, X_m$ and $Y_1, Y_2, \dots, Y_n$ be independently and identically distributed as $N(0,1)$ and $W = \frac{n \left(\sum_{i=1}^m X_i \right)^2}{m \left(\sum_{j=1}^n Y_j \right)^2}$ then the distribution of W is 1. $F_{(1, n)}$ 2. $F_{(2, n)}$ 3. $t_{(3, n)}$ 4. $t_{(2n)}$ A1 : 1 A2 : 2 A3 : 3 A4 : 4	4.0	0.00
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Objective Question

82	993082	Which of the following distributions admit Monotone Likelihood Ratio (M L R) i. Bernouli Distribution $B(1, \theta)$ ii. Poisson Distribution $P(\theta)$? 1. (i) and (ii) 2. Only (i) 3. Only (ii) 4. Neither (i) nor (ii) A1 : 1 A2 : 2 A3 : 3 A4 : 4	4.0	0.00
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Objective Question

83	993083	What effect does increasing the sample size have upon the sampling error? 1. It reduces the sampling error 2. It increases the sampling error 3. It has no effect on the sampling error 4. Increases the sampling error exponentially A1 : 1	4.0	0.00
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A2 : 2

A3 : 3

A4 : 4

Objective Question

84	993084	In multiple discriminant analysis, the discriminant scores is defined as: 1. t - score 2. R - score 3. Z - score 4. F- score A1 : 1 A2 : 2 A3 : 3 A4 : 4	4.0	0.00
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Objective Question

85	993085	The relationship between probability density function and hazard rate is 1. $f(t) = e^{-\int_0^t h(w)dw}$ 2. $f(t) = -\int_0^t h(w)dw$ 3. $f(t) = -\int_0^\infty h(w)dw$ 4. $f(t) = e^{-\int_0^\infty h(w)dw}$ A1 : 1 A2 : 2 A3 : 3 A4 : 4	4.0	0.00
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Objective Question

86	993086	Unbiased estimator of a non-negative term may be 1. Negative and absurd 2. Always non-negative 3. Always positive 4. Absurd only A1 : 1	4.0	0.00
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A2 : 2

A3 : 3

A4 : 4

Objective Question

87	993087	Let $X_1, X_2, \dots, X_{21}$ be random sample from a distribution having the variance 5. If $\bar{X} = \frac{1}{21} \sum_{i=1}^{21} X_i$ and $S = \sum_{i=1}^{21} (X_i - \bar{X})^2$, then the value of $E(X)$ is 1. 5 2. 100 3. 0.25 4. 105 A1 : 1 A2 : 2 A3 : 3 A4 : 4	4.0	0.00
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Objective Question

88	993088	If X is a Bin (20, 0.5) random variable, then 1. $P(X > 10) = 0.5$ 2. $P(X < 10) = 0.5$ 3. $P(X > 10) > 0.5$ 4. $P(X < 10) < 0.5$ A1 : 1 A2 : 2 A3 : 3 A4 : 4	4.0	0.00
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Objective Question

89	993089	Consider the linear regression $y_i = \beta_0 + \beta_1 x_i + \epsilon_i; i = 1, 2, \dots, n$ where ϵ_i's are i.i.d. standard normal random variables. Given that $\frac{1}{n} \sum_{i=1}^n x_i = 3.2$, $\frac{1}{n} \sum_{i=1}^n y_i = 4.2$, $\frac{1}{n} \sum_{j=1}^n \left(x_j - \frac{1}{n} \sum_{i=1}^n x_i \right)^2 = 1.5$ and $\frac{1}{n} \sum_{j=1}^n \left(x_j - \frac{1}{n} \sum_{i=1}^n x_i \right) \left(y_j - \frac{1}{n} \sum_{i=1}^n y_i \right) = 1.7$ The maximum likelihood estimates of β_0 and β_1 respectively are 1. 17/15 and 32/75 2. 32/75 and 17/15 3. 17/15 and 43/75 4. 43/75 and 17/15	4.0	0.00
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		A1 : 1		
		A2 : 2		
		A3 : 3		
		A4 : 4		

Objective Question

90	993090	For detecting a decision, a test gives correct diagnosis with probability 0.99. It is known that one percent of a population suffers from this disease. If a randomly selected individual from this population tests positive, then the probability that the selected individual actually has the diseases is 0.05 0.01 0.5 0.99 A1 : 1 A2 : 2 A3 : 3 A4 : 4	4.0	0.00
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Objective Question

91	993091	Let X and Y be independent standard normal random variables. What is the distribution of $U = \left(\frac{X-Y}{X+Y}\right)^2$? $\chi^2_{(2)}$ $\chi^2_{(1)}$ $F_{(2,2)}$ $F_{(1,1)}$ A1 : 1 A2 : 2 A3 : 3 A4 : 4	4.0	0.00
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Objective Question

92	993092		4.0	0.00
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If $X_1, X_2, \dots$ are mutually independent random variables each having mean μ and variance σ^2 and $S_n = X_1 + X_2 + \dots + X_n$, ($n = 1, 2, \dots$), then according to the strong law of large numbers:

1. $\lim_{n \rightarrow \infty} \frac{S_n}{n} = \mu$ with probability one.

2. $\lim_{n \rightarrow \infty} \frac{S_n}{n} \neq \mu$ with probability zero.

3. $\lim_{n \rightarrow \infty} P\left(\frac{S_n}{n} - \mu \geq \epsilon\right) = 0$.

4. $\lim_{n \rightarrow \infty} P\left(\frac{S_n}{n} - \mu \leq \epsilon\right) = 1$.

A1 : 1

A2 : 2

A3 : 3

A4 : 4

Objective Question

93	993093	If X denotes the numbers of odd faces up, when six identical fair dice are thrown independently, then what is the variance of random variable X? 1 1/2 3/2 3/4 A1 : 1 A2 : 2 A3 : 3 A4 : 4	4.0	0.00
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Objective Question

94	993094	When a variable changes exponentially over time, then to obtain the value of the variable at the mid-point of a time interval, the best measure of central tendency is - Geometric mean - Harmonic mean - Arithmetic mean - Trimmed mean A1 : 1 A2 : 2 A3 : 3 A4 : 4	4.0	0.00
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Objective Question				
95	993095	For Linear Programming Problem, Max. $Z = 4X_1 + 6X_2$ subject to $4X_1 + 3X_2 \leq 12$ $3X_1 + 4X_2 \leq 12$ and $X_1, X_2 > 0$ and integers, the values of X_1 and X_2 are 1. 2 and 3 2. 0 and 3 3. 4 and 5 4. 3 and 4 A1 : 1 A2 : 2 A3 : 3 A4 : 4	4.0	0.00

Objective Question				
96	993096	In a sign test, during the comparison of observations with some specified value, let s be the number of plus signs and small t be the number of minus signs, then the distribution of s given $s + t$ is 1. Geometric distribution 2. Normal distribution 3. Binomial distribution 4. Poisson distribution A1 : 1 A2 : 2 A3 : 3 A4 : 4	4.0	0.00

Objective Question				
97	993097	In which of the following non-parametric tests, ranks are not used: 1. Mann-Whitney U-test 2. Kolmogorov-Smirnov test 3. Kruskal-Wallis test 4. Friedman test A1 : 1 A2 : 2	4.0	0.00

A3 : 3

A4 : 4

Objective Question

98	993098	If X is a normally distributed random variable with mean μ and variance σ^2, and with a confidence interval, a confidence level is associated then $P[\mu - 0.6745 \sigma \leq X \leq \mu + 0.6745 \sigma]$ is equal to 1. 0.05 2. 0.50 3. 0.95 4. 0.99 A1 : 1 A2 : 2 A3 : 3 A4 : 4	4.0	0.00
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Objective Question

99	993099	Cauchy distribution possesses some unique properties such as 1. Sample mean is a consistent estimator of population mean 2. Median is a consistent estimator of population mean 3. Both sample mean and Median are consistent estimators of population mean 4. Neither sample mean nor the Median is a consistent estimator of population mean A1 : 1 A2 : 2 A3 : 3 A4 : 4	4.0	0.00
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Objective Question

100	993100	Let X and Y be two random variables each having mean zero and standard deviations σ_1 and σ_2 respectively. Let X and Y be normally correlated with correlation coefficient ρ, then $(X/\sigma_1) - (Y/\sigma_2)$ is 1. Normally distributed with mean 0 and variance $2(1-\rho)$ 2. Normally distributed with mean 0 and variance $2(1-\rho)(\sigma_1/\sigma_2)$ 3. Not normally distributed 4. Standard Normal Variate A1 : 1 A2 : 2 A3 : 3	4.0	0.00
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		A4 : 4		
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