ICAR AIEEA PG

QUESTION PAPER



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PREVIEW QUESTION BANK

Module Name : STATISTICAL SCIENCE-ENG
Exam Date : 29-Jun-2024 Batch : 10:00-12:00

Sr. No.	Client Question ID	Question Body and Alternatives	Marks	Negative Marks
Objective Question				
1	70001	Which is called as the brain of the nematode? 1. Z organ 2. Guide ring 3. Basal ring 4. Nerve Ring A1 : 1 A2 : 2 A3 : 3 A4 : 4	4.0	1.00
Objective Question				
2	70002	If an exporter earns money and deposits that with Reserve Bank of India (RBI), what will be the ultimate impact on country's money supply? 1. Money supply will depend upon the current exchange rate 2. Money supply will remain unaltered 3. Money supply will decrease 4. Money supply will increase A1 : 1 A2 : 2 A3 : 3 A4 : 4	4.0	1.00
Objective Question				
3	70003	Anthracnose resistant variety of French bean is: 1. Kentucky Wonder 2. Contender 3. Pusa Fiona 4. Tweed Wonder A1 : 1	4.0	1.00

		A2 : 2 A3 : 3 A4 : 4		
Objective Question				
4	70004	The process of assembling, storage, grading, packaging and distribution of different agricultural products is known as ..... 1. Agricultural diversification 2. Rural sociology 3. Crop diversification 4. Agricultural marketing A1 : 1 A2 : 2 A3 : 3 A4 : 4	4.0	1.00
Objective Question				
5	70005	What is the working principle of a potometer? 1. Amount of water absorbed is the same as the amount of water transpired 2. Amount of water absorbed is double the amount of water transpired 3. Amount of water absorbed is 2.63 times the amount of water transpired 4. Amount of water absorbed is 0.56 times the amount of water transpired A1 : 1 A2 : 2 A3 : 3 A4 : 4	4.0	1.00
Objective Question				
6	70006	A pathogen often develops resistant against ..... ? 1. Systemic fungicides 2. Dusts 3. Fumigants 4. Pastes A1 : 1	4.0	1.00

		A2 : 2 A3 : 3 A4 : 4		
Objective Question				
7	70007	Olivine is a good source of: 1. Mg 2. Mn 3. B 4. OL A1 : 1 A2 : 2 A3 : 3 A4 : 4	4.0	1.00
Objective Question				
8	70008	Chipko movement was started to conserve: 1. Vegetables 2. Cow 3. Dog 4. Trees A1 : 1 A2 : 2 A3 : 3 A4 : 4	4.0	1.00
Objective Question				
9	70009	How many main types of nucleic acids are present in the living systems? 1. 0 2. 10 3. 21 4. 2 A1 : 1 A2 : 2	4.0	1.00

		A3 : 3 A4 : 4		
Objective Question				
10	70010	The main reason for blueness of the sky is: 1. Due to the presence of water vapor 2. Due to the presence of trees 3. Due to the scattering of sunlight by wind 4. Due to the scattering of sunlight by air molecules A1 : 1 A2 : 2 A3 : 3 A4 : 4	4.0	1.00
Objective Question				
11	70011	Which crop is called micronutrient loving crop? 1. Litchi 2. Mango 3. Apple 4. Banana A1 : 1 A2 : 2 A3 : 3 A4 : 4	4.0	1.00
Objective Question				
12	70012	Most of the insect require which vitamin: 1. D 2. C 3. B 4. A A1 : 1 A2 : 2 A3 : 3	4.0	1.00

		A4 : 4		
Objective Question				
13	70013	Two unbiased dice are thrown simultaneously. Then the possible number of outcomes will be: 1. 12 2. 4 3. 6 4. 36 A1 : 1 A2 : 2 A3 : 3 A4 : 4	4.0	1.00
Objective Question				
14	70014	If C_1 and C_2 are subset of sample space S. Then which is correct: 1. $P(C_1 \cap C_2) \geq P(C_1)$ 2. $P(C_1 \cap C_2) \geq P(C_2)$ 3. $P(C_1 \cap C_2) \leq P(C_1 \cup C_2)$ 4. $P(C_1 \cup C_2) \geq P(C_1) + P(C_2)$ A1 : 1 A2 : 2 A3 : 3 A4 : 4	4.0	1.00
Objective Question				
15	70015	In drawing Histogram for unequal class intervals, the height of the rectangle will be: 1. Proportional to the frequencies 2. Proportional to the class width 3. Proportional to the ratio of the frequencies to the width of the classes 4. Proportional to the ratio of the width of the classes to the frequencies A1 : 1 A2 : 2 A3 : 3 A4 : 4	4.0	1.00

Objective Question				
16	70016	The arithmetic mean of n number series is $\bar{x}$. The sum of last n-1 numbers is k. Then the first number will be: 1. 1 2. $n\bar{x}$-k 3. (n-1) $\bar{x}$ -k 4. k A1 : 1 A2 : 2 A3 : 3 A4 : 4	4.0	1.00
Objective Question				
17	70017	The mean square deviation of the variate X from ------ is minimum. 1. C (constant) 2. Mode 3. Mean 4. Median A1 : 1 A2 : 2 A3 : 3 A4 : 4	4.0	1.00
Objective Question				
18	70018	The mean of two samples of series 50 and 100 are 53.7 and 52.3 respectively. Find the mean of combine sample. 1. 50.65 2. 52.766 3. 52.0 4. 53.05 A1 : 1 A2 : 2 A3 : 3 A4 : 4	4.0	1.00
Objective Question				

19	70019	For the discrete distribution which is correct 1. $\beta_2 \geq 1$ 2. $\beta_2 \leq 2$ 3. $\beta_2 \leq \beta_1$ 4. $\beta_2 = \beta_1$ A1 : 1 A2 : 2 A3 : 3 A4 : 4	4.0	1.00
Objective Question				
20	70020	Two dice are rolled simultaneously. What is the probability that the sum of numbers on dice is 9? 1. 1/9 2. 1/2 3. 1/4 4. 1/6 A1 : 1 A2 : 2 A3 : 3 A4 : 4	4.0	1.00
Objective Question				
21	70021	Given P(A)= p_1, P(B)= p_2 and P(AB)= p_3. Then $P(A^c \cap B^c)$ will be 1. 1- $p_1 \cdot p_2$ 2. 1-p_3 3. 1- $p_1 \cdot p_2 \cdot p_3$ 4. 1 - p_1 - p_2 + p_3 A1 : 1 A2 : 2 A3 : 3 A4 : 4	4.0	1.00
Objective Question				
22	70022		4.0	1.00

		If X is a random Poisson variate with P(X=1) = P(X=2). Then P(X=4) is 1. $\frac{2e^{-2}}{3}$ 2. $\frac{e^{-2}}{3}$ 3. $\frac{4e^{-2}}{3}$ 4. $\frac{2e^{-2}}{4}$ A1 : 1 A2 : 2 A3 : 3 A4 : 4		
Objective Question				
23	70023	If $X \sim N(\mu, \sigma^2)$. The maximum ordinate is at X= μ and is given by 1. $\sigma\sqrt{2\pi}$ 2. $\frac{1}{\sigma\sqrt{2\pi}}$ 3. $\sigma\sqrt{2\pi e}$ 4. $\frac{1}{\sigma\sqrt{2\pi e}}$ A1 : 1 A2 : 2 A3 : 3 A4 : 4	4.0	1.00
Objective Question				
24	70024	The unit of coefficient of correlation is ..... 1. Percentage 2. Same unit of the data 3. Ratio 4. No unit A1 : 1 A2 : 2 A3 : 3 A4 : 4	4.0	1.00
Objective Question				

25	70025	The mean weight per bag in a group of 6 bags of rice is 119kg.The individual weights of 5 of them are 115 kg, 109 kg, 129 kg, 117 kg and 114 kg. What is weight of the other bag of the group? 1. 129 kg 2. 130 kg 3. 131 kg 4. 132 kg A1 : 1 A2 : 2 A3 : 3 A4 : 4	4.0	1.00
Objective Question				
26	70026	The following table gives the distribution of 100 families according to daily expenditure: Expenditure (in Rs) | 0-10 | 10-20 | 20-30 | 30-40 | 40-50 Number of families | 14 | x | 27 | y | 15 If the mode of the distribution is 24, find the missing frequencies x and y. 1. x=16, y= 20 2. x= 18, y= 21 3. x= 23, y=21 4. x=21, y= 23 A1 : 1 A2 : 2 A3 : 3 A4 : 4	4.0	1.00
Objective Question				
27	70027	Which one of the following is a correct statement? 1. 5 *Mean Deviation= 4 * Standard Deviation 2. 3 * Quartile deviation= 2 * Standard Deviation 3. 4* Mean deviation= 3 * Standard Deviation 4. 4*Mean deviation= 3*Standard Deviation A1 : 1	4.0	1.00

		A2 : 2 A3 : 3 A4 : 4		
Objective Question				
28	70028	A scooter rider covers a certain distance at a uniform speed of 45 km per hour and retraces the same path at a uniform speed of 55km per hour to reach the starting point. His average speed during the whole journey is 1. 49.5km/hr 2. 50km/hr 3. 50.5km/hr 4. 51km/hr A1 : 1 A2 : 2 A3 : 3 A4 : 4	4.0	1.00
Objective Question				
29	70029	The width of each of nine classes in a frequency distribution is 2.5 and the lower class boundary of the lowest class is 10.6. Which one of the following is the upper class boundary of the highest class? 1. 35.6 2. 33.1 3. 30.6 4. 28.1 A1 : 1 A2 : 2 A3 : 3 A4 : 4	4.0	1.00
Objective Question				
30	70030	The median of a given frequency distribution is found graphically with the help of 1. Histogram 2. Pie Chart 3. Bar graph 4. Ogive A1 : 1	4.0	1.00

		A2 : 2 A3 : 3 A4 : 4		
Objective Question				
31	70031	A frequency distribution can be presented graphically by 1. Pie Chart 2. Histogram 3. Pictogram 4. Cartogram A1 : 1 A2 : 2 A3 : 3 A4 : 4	4.0	1.00
Objective Question				
32	70032	If A and B are two events such that $P(A \cup B)=\frac{5}{6}$, $P(A \cap B)=\frac{1}{3}$, $P(\overline{B})=\frac{1}{2}$ then the events A and B are 1. dependent 2. mutually exclusive 3. independent 4. equally likely A1 : 1 A2 : 2 A3 : 3 A4 : 4	4.0	1.00
Objective Question				
33	70033	The probability of occurance of two events A and B are 0.25 and 0.50 respectively. The probability of their simultaneous occurance is 0.14. the probability that neither A occurs nor B occurs is 1. 0.61 2. 0.11 3. 0.39 4. 0.89	4.0	1.00

		A1 : 1 A2 : 2 A3 : 3 A4 : 4		
Objective Question				
34	70034	In a binomial distribution the mean is 8 and variance is 6. Then the mode is 1. 5 2. 8 3. 4 4. 7 A1 : 1 A2 : 2 A3 : 3 A4 : 4	4.0	1.00
Objective Question				
35	70035	The coefficient of variation of Poisson distribution with mean 36 is 1. $\frac{1}{6} \times 100$ 2. 6×100 3. 4×100 4. 2×100 A1 : 1 A2 : 2 A3 : 3 A4 : 4	4.0	1.00
Objective Question				
36	70036	A die is thrown 100 times. Getting an even number is considered a success. The variance of the number of successes is 1. 20 2. 25 3. 30 4. 50 A1 : 1	4.0	1.00

		A2 : 2 A3 : 3 A4 : 4		
Objective Question				
37	70037	Which is the following statement is true? 1. $P(C_1 \cap C_2) \geq P(C_1) + P(C_2)$ 2. $P(C_1 \cup C_2) \geq P(C_1) + P(C_2)$ 3. $P(C_1 \cap C_2) \geq P(C_1) + P(C_2) - 1$ 4. $P(C_1 \cap C_2) \leq P(C_1) + P(C_2) - 1$ A1 : 1 A2 : 2 A3 : 3 A4 : 4	4.0	1.00
Objective Question				
38	70038	A bowl contains eight chips. Three of the chips are red and the remaining five are blue. Two chips are to be drawn successively, at random and without replacement. What is the probability that the first draw results in a red chip and that the second draw results in a blue chip? 1. 0.27 2. 0.71 3. 0.38 4. 0.57 A1 : 1 A2 : 2 A3 : 3 A4 : 4	4.0	1.00
Objective Question				
39	70039		4.0	1.00

A random variable X has the following pdf

$f(x) = \frac{1}{\sqrt{2\pi}\sigma} e^{-\frac{(x-\mu)^2}{\sigma}}$; $-\infty < X < \infty$

= o, otherwise

Then $\int_{\frac{1}{2}}^{\infty} f(x)dx = ?$

1. 0
2. $\frac{1}{2}$
3. $1-\frac{1}{e}$
4. 1

A1 : 1

A2 : 2

A3 : 3

A4 : 4

Objective Question

40	70040	The annual precipitation data of a city is normally distributed with mean 1200mm and standard deviation 200mm, respectively. The probability that annual precipitation will be more than 1400mm 1. 0.16 2. 0.68 3. 0.84 4. 0.75 A1 : 1 A2 : 2 A3 : 3 A4 : 4	4.0	1.00

Objective Question

41	70041	The probability that an individual is left-handed is 0.16. In a class of 10 students, what is the mean and standard deviation of the number of left-handed students? 1. 1.6 and 1.226 respectively 2. 1.6 and 1.159 respectively 3. 2.6 and 1.26 respectively 4. 4 and 1.26 respectively A1 : 1 A2 : 2	4.0	1.00

		A3 : 3 A4 : 4		
Objective Question				
42	70042	Let X have a Poisson distribution. If P(X=1) = P(X=3), find the mode of the distribution. 1. 2 2. 4 3. 6 4. 8 A1 : 1 A2 : 2 A3 : 3 A4 : 4	4.0	1.00
Objective Question				
43	70043	For a small sample to test the significance of single mean (variance is known) which test has to perform? 1. z test 2. t test 3. F test 4. χ^2 test A1 : 1 A2 : 2 A3 : 3 A4 : 4	4.0	1.00
Objective Question				
44	70044	Suppose there are two population. Population 1 and Population 2 follows a normal distribution with mean μ_1, μ_2, and variance σ_1^2 , σ_2^2 respectively. The size of the two populations are n_1 and n_2 respectively.What is the degree of freedom of the test statistic to test the equality of two population mean? 1. $n_1+ n_2$ 2. $n_1+ n_2-1$ 3. $n_1+ n_2-2$ 4. n_1n_2 A1 : 1 A2 : 2	4.0	1.00

		A3 : 3 A4 : 4		
Objective Question				
45	70045	Let (x_i, y_i), i=1,2,....,n be a random sample drawn from a bivariate normal population $(\mu_1, \mu_2, \sigma_1^2, \sigma_2^2, \rho)$. What the degrees of freedom of the test statistic to test H_0: ρ=0 against H_1: ρ≠0 1. n 2. n-1 3. n-2 4. 2n A1 : 1 A2 : 2 A3 : 3 A4 : 4	4.0	1.00
Objective Question				
46	70046	Let (x_i, y_i), i=1,2,....,n be a random pair of sample drawn from a bivariate normal population $(\mu_1, \mu_2, \sigma_1^2, \sigma_2^2, \rho)$. What is the distribution of the test statistics to test H_0: $\mu_1 = \mu_2$ against H_1: $\mu_1 \neq \mu_2$ 1. $t \sim t_0$ 2. $t \sim t_{(n-1)}$ 3. $t \sim t_{(n+1)}$ 4. $t \sim t_{(n-2)}$ A1 : 1 A2 : 2 A3 : 3 A4 : 4	4.0	1.00
Objective Question				
47	70047	To test the independence of attributes for a r×s contingency table what is the value of X^2? Total frequency=N 1. $\frac{(r-1)(s-1)}{N}$ 2. $\frac{(r-1)(s-1)}{N-1}$ 3. $\frac{N(r-1)(s-1)}{N-1}$ 4. $\frac{(r-1)(s-1)}{N+1}$	4.0	1.00

		A1 : 1 A2 : 2 A3 : 3 A4 : 4		
Objective Question				
48	70048	The probability of rejecting null hypothesis when it is true is known as 1. power of the test 2. type I error 3. type II error 4. level of significance A1 : 1 A2 : 2 A3 : 3 A4 : 4	4.0	1.00
Objective Question				
49	70049	The mean of 21 numbers is 9. One of the numbers, 19, is deleted. What is the mean of the remaining 20 numbers? 1. 6.4 2. 8.5 3. 18.889 4. 21.25 A1 : 1 A2 : 2 A3 : 3 A4 : 4	4.0	1.00
Objective Question				
50	70050	Two events, A and B, are mutually exclusive and each have a nonzero probability. If event A is known to occur, the probability of the occurrence of event B is: 1. between 0 and 1 2. 0 3. 1 4. 0.5	4.0	1.00

		A1 : 1 A2 : 2 A3 : 3 A4 : 4		
Objective Question				
51	70051	The median of a set of 100 distinct observations is 36.9. If each of the largest 10 observations of the set is increased by 6, then the median of the new set is 1. 42.9 2. 30.9 3. 10 4. 36.9 A1 : 1 A2 : 2 A3 : 3 A4 : 4	4.0	1.00
Objective Question				
52	70052	The geometric mean of 625 and 1 is ..... 1. 313 2. 625 3. 1 4. 25 A1 : 1 A2 : 2 A3 : 3 A4 : 4	4.0	1.00
Objective Question				
53	70053	Which of the following statements is generally true about the harmonic mean of two regression coefficients? 1. It is greater than the correlation coefficient 2. It is equal to the correlation coefficient 3. It is lesser than the correlation coefficient 4. It is zero	4.0	1.00

		A1 : 1 A2 : 2 A3 : 3 A4 : 4		
Objective Question				
54	70054	The arithmetic mean (AM) of two regression coefficients b_{yx} and b_{xy} is: 1. Always *r* 2. Never *r* 3. More than or equals to *r* 4. Less than or equals to *r* A1 : 1 A2 : 2 A3 : 3 A4 : 4	4.0	1.00
Objective Question				
55	70055	Statistics students believe that the average score on the first statistics test is 65. A statistics instructor thinks the average score is higher than 65. He samples ten statistics students and obtains 67 as the mean. He knows that the standard deviation for the score on the test is 3.2. Which test is appropriate for the given condition? 1. Z-test 2. Simple t-test 3. Paired t-test 4. Two sample t-test A1 : 1 A2 : 2 A3 : 3 A4 : 4	4.0	1.00
Objective Question				
56	70056	In SRSWOR the probability of selecting, say, j^{th} unit at k^{th} draw is ..... 1. 1/(sample size) 2. 1/k 3. 1/j 4. 1/(Population Size)	4.0	1.00

		A1 : 1 A2 : 2 A3 : 3 A4 : 4		
Objective Question				
57	70057	If the fitted regression equation is given as Y= 100 + 7X, the predicted value of Y when X=20 is 1. 140 2. 120 3. 107 4. 240 A1 : 1 A2 : 2 A3 : 3 A4 : 4	4.0	1.00
Objective Question				
58	70058	Which one of the following represents the best estimate of the population mean? 1. The sample mean 2. The median 3. The mode of several sample means 4. The mean of several sample means A1 : 1 A2 : 2 A3 : 3 A4 : 4	4.0	1.00
Objective Question				
59	70059	If you obtain a two-tailed p-value of 0.02 the equivalent one-tailed p-value would be: 1. 0.01 2. 0.04 3. 0.02 4. 0.4 A1 : 1	4.0	1.00

		A2 : 2 A3 : 3 A4 : 4		
Objective Question				
60	70060	The difference between the expected value of a statistic and the value of the parameter being estimated is called a: 1. Standard error 2. Bias 3. Non-sampling error 4. Sampling error A1 : 1 A2 : 2 A3 : 3 A4 : 4	4.0	1.00
Objective Question				
61	70061	A polymorphic virus can ..... 1. Spreading through social media platforms 2. Change its apearance 3. Deleting files randomly 4. Only infecting specific file types A1 : 1 A2 : 2 A3 : 3 A4 : 4	4.0	1.00
Objective Question				
62	70062	Which tab is not available on left panel when you open a presentation? 1. Outline 2. Slides 3. Save 4. Notes A1 : 1 A2 : 2	4.0	1.00

		A3 : 3 A4 : 4		
Objective Question				
63	70063	Formula in Excel starts with 1. + 2. - 3. Excel data analysis tools 4. = A1 : 1 A2 : 2 A3 : 3 A4 : 4	4.0	1.00
Objective Question				
64	70064	What is the shortcut key for "Subscript" the selected text? 1. Ctrl + Shift + – 2. Ctrl + Shift + = 3. Ctrl + – 4. Ctrl + = A1 : 1 A2 : 2 A3 : 3 A4 : 4	4.0	1.00
Objective Question				
65	70065	A t-value of -5 is: 1. Less important than a value of +5 2. More important than a value of +5 3. Equivalent to a value of +5 4. Less significant than a value of +5 A1 : 1 A2 : 2 A3 : 3	4.0	1.00

		A4 : 4		
Objective Question				
66	70066	Which of these devices use capacitors to store data? 1. DRAM 2. ERAM 3. SRAM 4. PRAM A1 : 1 A2 : 2 A3 : 3 A4 : 4	4.0	1.00
Objective Question				
67	70067	The checking operation performed on input data is called the 1. Control of data 2. Validation of data 3. Cross check 4. Verification of data A1 : 1 A2 : 2 A3 : 3 A4 : 4	4.0	1.00
Objective Question				
68	70068	Execution of two or more programs by a single CPU is known as 1. Multiprogramming 2. Multiprocessing 3. Timesharing 4. CPU Sharing A1 : 1 A2 : 2 A3 : 3	4.0	1.00

		A4 : 4		
Objective Question				
69	70069	Which of the following is not a software for dot plot analysis? 1. DOTMATCHER 2. SIMMI 3. DOTLET 4. LALIGN A1 : 1 A2 : 2 A3 : 3 A4 : 4	4.0	1.00
Objective Question				
70	70070	Which of the following scores are not considered while calculating the SP scores? 1. Number of gap penalties 2. All possible pair wise matches 3. All possible mismatches 4. All possible gap costs A1 : 1 A2 : 2 A3 : 3 A4 : 4	4.0	1.00
Objective Question				
71	70071	Which of the following does not constitute an online resource for aligning sequence pairs? 1. BLASTX 2. BCM Search Launcher 3. SIM 4. BLASTN A1 : 1 A2 : 2 A3 : 3 A4 : 4	4.0	1.00

Objective Question

72	70072	Which of the options listed below is not the purpose of a sequence comparison? 1. To identify any shared patterns between the two sequences. 2. Investigating the physical characteristics of molecules 3. To investigate evolutionary links 4. To spot conservation trends A1 : 1 A2 : 2 A3 : 3 A4 : 4	4.0	1.00

Objective Question

73	70073	Let $(a_n) = \left(\frac{n+1}{n}\right)$ and $(b_n) = (-1)^n$ be sequences of real number, then 1. Both (a_n) and (b_n) are convergent 2. Both (a_n) and (b_n) are divergent 3. (a_n) is convergent but (b_n) is not convergent 4. (a_n) is not convergent but (b_n) is convergent A1 : 1 A2 : 2 A3 : 3 A4 : 4	4.0	1.00

Objective Question

74	70074	Let r be any real number and $(a_n) = \frac{1}{n^r}$ be sequence of real number, then 1. (a_n) is always convergent for any $r \in R$ 2. (a_n) is convergent only for $r = 1$ 3. (a_n) is convergent for any $r \geq 0$ 4. (a_n) is divergent for any $r \in R$ A1 : 1 A2 : 2 A3 : 3 A4 : 4	4.0	1.00

Objective Question

75	70075	Which of the following statement is true for sequence of real number 1. Every bounded sequence is convergent 2. Every bounded sequence is Cauchy sequence 3. Every Cauchy sequence may not bounded 4. Every Cauchy sequence is bounded A1 : 1 A2 : 2 A3 : 3 A4 : 4	4.0	1.00
Objective Question				
76	70076	Let (a_n) and (b_n) be sequences of real number. Let $\left(\frac{a_n}{b_n}\right)$ and $(a_n b_n)$ are convergent, then 1. (a_n) and (b_n) both may be divergent 2. (a_n) and (b_n) are always convergent 3. (a_n) and (b_n) should converge 4. (a_n) and (b_n) can not diverge A1 : 1 A2 : 2 A3 : 3 A4 : 4	4.0	1.00
Objective Question				
77	70077	$\lim_{n\to\infty}\left(1+\frac{1}{n}\right)^{2n}$ is equal to 1. e 2. e^2 3. e^3 4. 0 A1 : 1 A2 : 2 A3 : 3 A4 : 4	4.0	1.00
Objective Question				
78	70078		4.0	1.00

		The series $\sum_{n=1}^{\infty}(-1)^n \frac{1}{n^2}$ is 1. Conditionally convergent 2. Absolutely convergent 3. Oscillatory 4. Divergent A1 : 1 A2 : 2 A3 : 3 A4 : 4		
Objective Question				
79	70079	1. Let $\sum_{n=1}^{\infty}\frac{1}{n^{\frac{1}{2}}}$ and $\sum_{n=1}^{\infty}\frac{1}{n^{\frac{3}{2}}}$ be series, then 1. both are convergent 2. both are divergent 3. $\sum_{n=1}^{\infty}\frac{1}{n^{\frac{1}{2}}}$ is convergent and $\sum_{n=1}^{\infty}\frac{1}{n^{\frac{3}{2}}}$ is divergent 4. $\sum_{n=1}^{\infty}\frac{1}{n^{\frac{1}{2}}}$ is divergent and $\sum_{n=1}^{\infty}\frac{1}{n^{\frac{3}{2}}}$ is convergent A1 : 1 A2 : 2 A3 : 3 A4 : 4	4.0	1.00
Objective Question				
80	70080	Let $\sum_{n=1}^{\infty} a_n$ is absolutely convergent series, then 1. $\sum_{n=1}^{\infty} a_n$ is convergent 2. $\sum_{n=1}^{\infty} a_n$ is conditionally convergent 3. $\sum_{n=1}^{\infty} a_n$ is not convergent 4. $\sum_{n=1}^{\infty} a_n$ is oscillatory A1 : 1 A2 : 2 A3 : 3 A4 : 4	4.0	1.00
Objective Question				

81	70081	Let $\sum_{n=1}^{\infty} a_n = \sum_{n=1}^{\infty}(-1)^n \frac{\sin nx}{n^2}$ is a series, then 1. $\sum_{n=1}^{\infty} a_n$ convergent absolutely 2. $\sum_{n=1}^{\infty} a_n$ convergent conditionally 3. $\sum_{n=1}^{\infty} a_n$ oscillatory 4. $\sum_{n=1}^{\infty} a_n$ is not convergent A1 : 1 A2 : 2 A3 : 3 A4 : 4	4.0	1.00
Objective Question				
82	70082	$S = \{(2,5), (3,7), (4,-9), (-8,3)\}$, then 1. S is linearly independent 2. S is linearly dependent 3. $S - \{(4,-9)\}$ is linearly independent 4. $S - \{(-8,3)\}$ is linearly independent A1 : 1 A2 : 2 A3 : 3 A4 : 4	4.0	1.00
Objective Question				
83	70083	Let $a, b \in R$ and $0 \leq a < b$, then 1. $\frac{1}{a} < \frac{1}{b}$ 2. $ab > b^2$ 3. $ab < a^2$ 4. $a^2 < ab$ A1 : 1 A2 : 2 A3 : 3 A4 : 4	4.0	1.00
Objective Question				
84	70084		4.0	1.00

		Let c be any real number and $1 < c$, then 1. $c^2 < c$ 2. $c^2 < 1$ 3. $c < c^2$ 4. $c^{-1} > 1$ A1 : 1 A2 : 2 A3 : 3 A4 : 4		
Objective Question				
85	70085	Let A be 5×5 skew-symmetric matrix, then the determinant of A is 1. 0 2. 1 3. -1 4. $1/2$ A1 : 1 A2 : 2 A3 : 3 A4 : 4	4.0	1.00
Objective Question				
86	70086	Which of the following statement is true 1. Every empty set is linearly dependent 2. Every non empty set is linearly independent 3. Every non empty set is linearly dependent 4. Single non-zero set is linearly independent A1 : 1 A2 : 2 A3 : 3 A4 : 4	4.0	1.00
Objective Question				
87	70087		4.0	1.00

		Let A be an $n \times n$ matrix of real number such that $A^2 = A$, then the Eigen values A are 1. $0, 1$ 2. $1, -1$ 3. $1, -1$ 4. $-1, -1$ A1 : 1 A2 : 2 A3 : 3 A4 : 4		
Objective Question				
88	70088	Let $\sum_{n=1}^{\infty} a_n$ be series of real number, then 1. $\sum_{n=1}^{\infty} a_n$ is convergent if and only if $\lim_{n\to\infty} \lvert a_n \rvert^{\frac{1}{n}} > 1$ 2. $\sum_{n=1}^{\infty} a_n$ is convergent if and only if $\lim_{n\to\infty} \lvert a_n \rvert^{\frac{1}{n}} = 1$ 3. $\sum_{n=1}^{\infty} a_n$ is convergent if and only if $\lim_{n\to\infty} \left\lvert \frac{a_{n+1}}{a_n} \right\rvert < 1$ 4. $\sum_{n=1}^{\infty} a_n$ is convergent if and only if $\lim_{n\to\infty} \left\lvert \frac{a_{n+1}}{a_n} \right\rvert = 1$ A1 : 1 A2 : 2 A3 : 3 A4 : 4	4.0	1.00
Objective Question				
89	70089	Let $A = \begin{bmatrix} 2 & 1 & 4 \\ 3 & 2 & 5 \\ 0 & -1 & 1 \end{bmatrix}$ be a matrix, then the rank of A is 1. 0 2. 1 3. 2 4. 3 A1 : 1 A2 : 2 A3 : 3 A4 : 4	4.0	1.00

Objective Question

90	70090	The solution of the system of equations $x_1 - 3x_2 + 4x_3 = 3$ $2x_1 - 5x_2 + 7x_3 = 6$ $3x_1 - 8x_2 + 11x_3 = 11$ is given by 1. $x_1 = 3 \quad x_2 = 0$ $x_3 = 2$ 2. $x_1 = 0 \quad x_2 = 0$ $x_3 = 0$ 3. $x_1 = 1 \quad x_2 = 0$ $x_3 = 2$ 4. No solution exists A1 : 1 A2 : 2 A3 : 3 A4 : 4	4.0	1.00

Objective Question

91	70091	Let Z_1 and Z_2 be two complex numbers, then 1. $\overline{Z_1 + Z_2} \leq \overline{Z_1} + \overline{Z_2}$ 2. $\overline{Z_1 + Z_2} \geq \overline{Z_1} + \overline{Z_2}$ 3. $\overline{Z_1 Z_2} = \overline{Z_1}\,\overline{Z_2}$ 4. $\overline{Z_1 Z_2} < \overline{Z_1}\,\overline{Z_2}$ A1 : 1 A2 : 2 A3 : 3 A4 : 4	4.0	1.00

Objective Question

92	70092		4.0	1.00

		Let $Z_1 = -2 + 2i$ and $Z_2 = 3i$, then 1. $Arg(Z_1Z_2) = \frac{-3\pi}{4}$ 2. $Arg(Z_1Z_2) = \frac{3\pi}{4}$ 3. $Arg(Z_1/Z_2) = \frac{-\pi}{4}$ 4. $Arg(Z_1/Z_2) = \frac{5\pi}{4}$ A1 : 1 A2 : 2 A3 : 3 A4 : 4		
Objective Question				
93	70093	Let $x + iy = (2 - i)^2 + \left(\frac{7-4i}{2-i}\right) - 8$, the values of x and y are 1. 3, 7 2. $-3, 7$ 3. $3, -7$ 4. $-3, -7$ A1 : 1 A2 : 2 A3 : 3 A4 : 4	4.0	1.00
Objective Question				
94	70094	In hyperbola, the length of the transverse axis is the distance between 1. two vertices 2. two foci 3. vertex and the origin 4. focus and the vertex A1 : 1 A2 : 2 A3 : 3 A4 : 4	4.0	1.00
Objective Question				

95	70095	The center of the circle $4x^2 + 4y^2 - 8x + 12y - 25 = 0$ is 1. $(-2,\ 3)$ 2. $(1, -3/2)$ 3. $(-4,\ 6)$ 4. $(4, -6)$ A1 : 1 A2 : 2 A3 : 3 A4 : 4	4.0	1.00
Objective Question				
96	70096	The length of the latus rectum of $x^2 = -9y$ is equal to 1. 3 2. -3 3. $\frac{9}{4}$ 4. 9 A1 : 1 A2 : 2 A3 : 3 A4 : 4	4.0	1.00
Objective Question				
97	70097	Evaluate $\lim_{x \to +\infty} \frac{x}{\sqrt{x^2+1000}}$ 1. 0 2. 1 3. ∞ 4. $\frac{1}{2}$ A1 : 1 A2 : 2 A3 : 3 A4 : 4	4.0	1.00
Objective Question				
98	70098		4.0	1.00

		A liquid form of penicillin manufactured by a pharmaceutical firm is sold in bulk at a price of $ 200 per unit. If the total production cost (in dollars) for x units is $C(x) = 500{,}000 + 80\,x + 0.003\,x^2$ and if the production capacity of the firm is at most 30,000 units in a specified time, how many units of penicillin must be manufactured and sold in that specified time to maximize the profit? 1. 10,000 2. 20,000 3. 30,000 4. 25,000 A1 : 1 A2 : 2 A3 : 3 A4 : 4		
Objective Question				
99	70099	Find the vertical asymptotes of $f(x) = \frac{-8}{x^2-4}$ 1. $x = 0$ 2. $x = 4$ 3. $x = \pm 2$ 4. $x = \pm 8$ A1 : 1 A2 : 2 A3 : 3 A4 : 4	4.0	1.00
Objective Question				
100	70100	If $z = 3x^2y - x\sin xy$, then 1. $\frac{\partial^2 z}{\partial y\,\partial x} > \frac{\partial^2 z}{\partial x\,\partial y}$ 2. $\frac{\partial^2 z}{\partial y\,\partial x} < \frac{\partial^2 z}{\partial x\,\partial y}$ 3. $\frac{\partial^2 z}{\partial y\,\partial x} = \frac{\partial^2 z}{\partial x\,\partial y}$ 4. $\frac{\partial^2 z}{\partial y\,\partial x} = 0$ A1 : 1 A2 : 2 A3 : 3 A4 : 4	4.0	1.00

Objective Question				
101	70101	If $u = \sin^{-1}\left(\frac{x^2y}{x+y}\right)$, then 1. $x\frac{\partial u}{\partial x} + y\frac{\partial u}{\partial y} = 2\tan u$ 2. $x\frac{\partial u}{\partial x} + y\frac{\partial u}{\partial y} = 2\sin u$ 3. $x\frac{\partial u}{\partial x} + y\frac{\partial u}{\partial y} = 2\cot u$ 4. $x\frac{\partial u}{\partial x} + y\frac{\partial u}{\partial y} = 2\sec u$ A1 : 1 A2 : 2 A3 : 3 A4 : 4	4.0	1.00
Objective Question				
102	70102	If $x = r\cos\theta$, $y = r\sin\theta$, then find the value of $\frac{\partial(r,\theta)}{\partial(x,y)}$ 1. $\frac{1}{r}$ 2. r 3. $-r$ 4. $-\frac{1}{r}$ A1 : 1 A2 : 2 A3 : 3 A4 : 4	4.0	1.00
Objective Question				
103	70103	Evaluate the value of $\int x\tan^{-1}x\,dx$ 1. $-\frac{x^2}{2}\tan^{-1}x + \frac{1}{2}x + \frac{1}{2}\tan^{-1}x + C$ 2. $\frac{x^2}{2}\tan^{-1}x + \frac{1}{2}x - \frac{1}{2}\tan^{-1}x + C$ 3. $-\frac{x^2}{2}\tan^{-1}x - \frac{1}{2}x - \frac{1}{2}\tan^{-1}x + C$ 4. $\frac{x^2}{2}\tan^{-1}x - \frac{1}{2}x + \frac{1}{2}\tan^{-1}x + C$ A1 : 1 A2 : 2	4.0	1.00

		A3 : 3 A4 : 4		
Objective Question				
104	70104	Suppose that a particle moves on a co-ordinate line so that its velocity at time t is $v(t) = \sqrt{t} - 2$. find the displacement of the particle during the time interval $0 \le t \le 3$. 1. $6 - 2\sqrt{3}$ 2. $5 - 3\sqrt{3}$ 3. $2\sqrt{3} - 6$ 4. $2\sqrt{3} - 5$ A1 : 1 A2 : 2 A3 : 3 A4 : 4	4.0	1.00
Objective Question				
105	70105	Evaluate $\iint_R (4xy - y^2)\,dx\,dy$, where R is the rectangle bounded by $x = 1$, $x = 2$, $y = 0$ and $y = 3$. 1. 18 2. 16 3. 15 4. 14 A1 : 1 A2 : 2 A3 : 3 A4 : 4	4.0	1.00
Objective Question				
106	70106	Evaluate $\int_0^1 \frac{1}{\sqrt{-\log_e x}}\,dx$ 1. $\sqrt{\frac{\pi}{2}}$ 2. $2\pi^2$ 3. $\frac{\sqrt{\pi}}{2}$ 4. $\sqrt{\pi}$ A1 : 1 A2 : 2	4.0	1.00

		A3 : 3 A4 : 4		
Objective Question				
107	70107	Solve the differential equation $3e^x \tan y \, dx + (1-e^x)\sec^2 y \, dy = 0$ 1. $\frac{\cos y}{(1-e^x)^3} = c$ 2. $\frac{\tan y}{(1-e^x)^3} = c$ 3. $\frac{\sin y}{(1-e^x)^3} = c$ 4. $\frac{\sin y}{(1-e^x)^5} = c$ A1 : 1 A2 : 2 A3 : 3 A4 : 4	4.0	1.00
Objective Question				
108	70108	Find the solution of the differential equation $\frac{dx}{dy} + \frac{x}{y} = y^2$. 1. $x = \frac{1}{4}x^3 + \frac{c}{y}$ 2. $y = \frac{1}{4}x^3 + \frac{c}{x}$ 3. $x = \frac{1}{4}y^3 + \frac{c}{x}$ 4. $x = \frac{1}{4}y^3 + \frac{c}{y}$ A1 : 1 A2 : 2 A3 : 3 A4 : 4	4.0	1.00
Objective Question				
109	70109	Find the solution of the differential equation $\frac{d^2y}{dx^2} + 2\frac{dy}{dx} + 4y = 2x^2 + 3e^{-x}$ 1. $y = e^{-x}\left[C_1 \cos\sqrt{3}x + C_2 \sin\sqrt{3}x\right] + \frac{1}{2}x^2 - \frac{1}{2}x + e^{-x}$ 2. $y = 4\left[C_1 \cos\sqrt{3}x + C_2 \sin\sqrt{3}x\right] + \frac{1}{2}x^2 + \frac{1}{2}x - e^{-x}$ 3. $y = e^x\left[C_1 \cos\sqrt{3}x + C_2 \sin\sqrt{3}x\right] - \frac{1}{2}x^2 + \frac{1}{2}x - e^{-x}$ 4. $y = e^x\left[C_1 \cos\sqrt{3}x + C_2 \sin\sqrt{3}x\right]$	4.0	1.00

		A1 : 1 A2 : 2 A3 : 3 A4 : 4		
Objective Question				
110	70110	The value of the constant a, b and c which guarantee that the graph of $f(x) = x^3 + ax^2 + bx + c$ will have a relative maximum at $(-3, 18)$ and a relative minimum at $(1, -14)$ is given by 1. $a = -3, b = 9, c = 9$ 2. $a = -3, b = -9, c = 9$ 3. $a = 3, b = 9, c = -9$ 4. $a = 3, b = -9, c = -9$ A1 : 1 A2 : 2 A3 : 3 A4 : 4	4.0	1.00
Objective Question				
111	70111	If $\ln u = \frac{x^3+y^3}{3x+4y}$, then the value of $x\frac{\partial u}{\partial x} + y\frac{\partial u}{\partial y}$ is given by 1. $u \ln \frac{u}{2}$ 2. $\frac{u}{2} \ln u$ 3. $2u \ln u$ 4. $\frac{u}{2} \ln \frac{u}{2}$ A1 : 1 A2 : 2 A3 : 3 A4 : 4	4.0	1.00
Objective Question				
112	70112		4.0	1.00

		The solution of the initial value problem $\frac{dy}{dx} = -6xy; y(0) = 7$ is given by 1. $7e^{-3x^2}$ 2. $3e^{-7x^2}$ 3. $7e^{-x^2}$ 4. $3e^{-x^2}$ A1 : 1 A2 : 2 A3 : 3 A4 : 4		
Objective Question				
113	70113	The formula to solve simple nonlinear equation $f(x) = 0$ by Newton's Raphson Method is given by 1. $x_{n+1} = x_n - \frac{f(x_n)}{f'(x_n)}$ 2. $x_{n+1} = x_n - \frac{f'(x_n)}{f(x_n)}$ 3. $x_{n+1} = f(x_n) - \frac{f''(x_n)}{f'(x_n)}$ 4. $x_{n+1} = f(x_n) - \frac{f'(x_n)}{f''(x_n)}$ A1 : 1 A2 : 2 A3 : 3 A4 : 4	4.0	1.00
Objective Question				
114	70114	If A is any real number and r is positive rational number, then the value of $\lim_{x \to \infty} \frac{A}{x^r}$ is given by 1. e 2. -1 3. 0 4. 1 A1 : 1 A2 : 2 A3 : 3 A4 : 4	4.0	1.00
Objective Question				

115	70115	If the interval of differencing being unity and Δ be the forward difference operator, then the value of $\Delta\left(\frac{2^x}{x!}\right)$ is given by 1. $\frac{2^x(x+1)!}{(1-x)}$ 2. $\frac{2^x(1-x)}{(x+1)!}$ 3. $\frac{3^x(1-x)}{(x-2)!}$ 4. $\frac{3^x(1+x)}{(x+1)!}$ A1 : 1 A2 : 2 A3 : 3 A4 : 4	4.0	1.00
Objective Question				
116	70116	Evaluate the integral $I = \int_0^1 \frac{1}{1+x} dx$ by using Simpson's one third rule with $h = 0.5$. 1. 0.7945 2. 0.5945 3. 0.6945 4. 0.4945 A1 : 1 A2 : 2 A3 : 3 A4 : 4	4.0	1.00
Objective Question				
117	70117	Find the value of $\int_{-1}^{2} \lvert x \rvert dx$ 1. $\frac{2}{5}$ 2. $\frac{3}{5}$ 3. $\frac{1}{2}$ 4. $\frac{5}{2}$ A1 : 1 A2 : 2 A3 : 3	4.0	1.00

		A4 : 4		
Objective Question				
118	70118	Find constants a and b so that $\lim_{x\to 0}(\frac{\sin 2x}{x^3}+\frac{a}{x^2}+b)=1$ 1. $a=-2, b=\frac{7}{3}$ 2. $a=2, b=-\frac{7}{3}$ 3. $a=1, b=-1$ 4. $a=-1, b=1$ A1 : 1 A2 : 2 A3 : 3 A4 : 4	4.0	1.00
Objective Question				
119	70119	Find the interval in which the graph of the function given by $f(x)=x^4-4x^3+10$ is concave up. 1. $(-\infty,1)\cup(3,\infty)$ 2. $(-\infty,0)\cup(2,\infty)$ 3. $(1.5,\infty)$ 4. $(0,2)$ A1 : 1 A2 : 2 A3 : 3 A4 : 4	4.0	1.00
Objective Question				
120	70120	The line $y=L$ is a horizontal asymptote of the graph of the function f if 1. $\lim_{x\to+\infty} f(x)=L$ or $\lim_{x\to-\infty} f(x)=L$ 2. $\lim_{x\to L^+} f(x)$ do not exist 3. $\lim_{x\to L} f(x)$ do not exist 4. $\lim_{x\to+\infty} f(x)$ do not exist A1 : 1 A2 : 2 A3 : 3	4.0	1.00

		A4 : 4		

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