Combined Graduate Level Examination 2020 Tier II

Roll Number	
Candidate Name	Join Telegram
Venue Name	Jaipur Engineering College
Exam Date	28/01/2022
Exam Time	9:00 AM - 11:00 AM
Subject	Paper III Statistics

Section : **Statistics**

Q.1 If $Q_3 - Q_2 > Q_2 - Q_1$, the value of Bowley's coefficient of skewness is:

Ans
✗ 1. Can't be dertermined
✗ 2. negative
✗ 3. zero
✓ 4. positive

Question ID : **65497837578**
Status : **Answered**
Chosen Option : **4**

Q.2 Rohit wants to check his IQ with an MCQ test. The test has five questions with one correct answer. Each question has three options. If he just randomly guesses the answer to each question, what is the probability that he will get exactly three questions correct?

Ans
✗ 1. 0.465
✗ 2. 0.265
✗ 3. 0.365
✓ 4. 0.165

Question ID : **65497837572**
Status : **Not Answered**
Chosen Option : **--**

Q.3 For the uniformly distributed random variable X with $a = 0$ and $b = \theta$, the value of the ratio of raw moments $\left(\frac{\mu_3'}{\mu_4'}\right)$ is.

Ans
✗ 1. $\frac{4\theta}{5}$
✓ 2. $\frac{5}{4\theta}$
✗ 3. $\frac{4}{5\theta}$
✗ 4. $\frac{5\theta}{4}$

Question ID : **65497837601**
Status : **Not Answered**
Chosen Option : **--**

Q.4 If $n_1 = 10, n_2 = 5$ are the sizes of a male and female student group with mean ages $\bar{x}_1 = 10, \bar{x}_2 = 4$, respectively, with an equal standard deviation $\sigma_1 = 1 = \sigma_2$ the standard deviation of the combined series with size $n_1 + n_2$ and combined mean $\bar{x} = 8$ is equal to:

Ans

✗ 1. $\sqrt{3}$

✗ 2. 9

✗ 3. 135

✓ 4. 3

Question ID : **65497837593**
Status : **Answered**
Chosen Option : **4**

Q.5 For the given distribution of female weight in a colony, the quartiles are 60.1, 61.3, 62.6. The value of Bowley's coefficient of skewness is:

Ans

✓ 1. 0.04

✗ 2. 0.02

✗ 3. 0.01

✗ 4. 0.03

Question ID : **65497837604**
Status : **Answered**
Chosen Option : **1**

Q.6 The average income of a worker for the first five days of the week is ₹25 per day. If he works for the first six days of the week, his average income per day is ₹30. His income for the sixth day is:

Ans

✗ 1. ₹65

✗ 2. ₹45

✗ 3. ₹35

✓ 4. ₹55

Question ID : **65497837580**
Status : **Answered**
Chosen Option : **4**

Q.7 The regression assumption is that the deviations from the regression line (residuals) follow a:

Ans

✗ 1. F distribution

✗ 2. uniform distribution

✓ 3. normal distribution

✗ 4. χ^2 distribution

Question ID : **65497837643**
Status : **Not Answered**
Chosen Option : **--**

Q.8 If the two lines of regression are $x + 2y - 5 = 0$ and $2x + 3y - 8 = 0$, the means of X and Y are:

Ans

✗ 1. $2, 1$

✓ 2. $1, 2$

✗ 3. $2, 4$

✗ 4. $-3, 4$

Question ID : **65497837644**
Status : **Answered**
Chosen Option : **2**

Q.9 If the mean, median, mode and standard deviation for the distribution are 61.4, 61.25, 61.13, 1.76, respectively, Karl Pearson's first coefficient of skewness equals to:

Ans

✗ 1. 0.353

✗ 2. 0.053

✓ 3. 0.153

✗ 4. 0.253

Question ID : **65497837602**
Status : **Answered**
Chosen Option : **3**

Q.10 Multiple regression equation of X_1 on X_2 and X_3 is $(X_1 - \overline{X_1}) = b_{12.3}(X_2 - \overline{X_2}) + b_{13.2}(X_3 - \overline{X_3})$ where $b_{13.2}$ is:

Ans

✗ 1. $\frac{\sigma_1}{\sigma_2}\left(\frac{r_{12} - r_{23}r_{13}}{1 - (r_{23})^2}\right)$

✓ 2. $\frac{\sigma_1}{\sigma_3}\left(\frac{r_{13} - r_{23}r_{12}}{1 - (r_{23})^2}\right)$

✗ 3. $\frac{\sigma_3}{\sigma_1}\left(\frac{r_{13} - r_{23}r_{12}}{1 - (r_{23})^2}\right)$

✗ 4. $\frac{\sigma_2}{\sigma_1}\left(\frac{r_{12} - r_{23}r_{13}}{1 - (r_{23})^2}\right)$

Question ID : **65497837646**
Status : **Answered**
Chosen Option : **3**

Q.11 The prices (in ₹) of vegetables (per 5 kg) in the years 2019 and 2020 are as follows:

2019: 60 (Potato); 70 (Onion); 40 (Tomato); 30 (Chilli)

2020: 70 (Potato); 60 (Onion); 48 (Tomato); 27 (Chilli)

By the simple aggregative method, the net price changes in percentage are:

Ans

✗ 1. net decrease of 2% in price

✗ 2. net increase of 2% in price

✗ 3. net decrease of 2.5% in price

✓ 4. net increase of 2.5% in price

Question ID : **65497837661**
Status : **Answered**
Chosen Option : **4**

Q.12 If the first, second, and third quartiles of the distribution are 24, 42, and 72, respectively, the quartile deviation equals to:

Ans

✗ 1. 48

✗ 2. 36

✓ 3. 24

✗ 4. 60

Question ID : **65497837589**
Status : **Answered**
Chosen Option : **1**

Q.13 A study based on complete enumeration is known as:

Ans

✓ 1. Census survey

✗ 2. Pilot survey

✗ 3. Sample survey

✗ 4. Exhaustive survey

Question ID : **65497837613**
Status : **Not Answered**
Chosen Option : **--**

Q.14 Let X be a discrete random variable with pmf $f(x) = \frac{(x-3)^2}{5}; x = 3,4,5$. The variance of X is:

Ans

1. ✗ $\frac{4}{5}$
2. ✓ $\frac{4}{25}$
3. ✗ $\frac{2}{5}$
4. ✗ $\frac{2}{25}$

Question ID : **65497837571**
Status : **Answered**
Chosen Option : **2**

Q.15 If the regression line of Y on X and that of X on Y are perpendicular to each other, then the value of correlation coefficient r(X,Y) is given by:

Ans

1. ✓ 0
2. ✗ 0.5
3. ✗ +1
4. ✗ -1

Question ID : **65497837645**
Status : **Answered**
Chosen Option : **1**

Q.16 If, for two independent events A and B, P(A)=0.8 and P(B)=0.6, then the probability of their simultaneous occurrence is:

Ans

1. ✗ 0.6
2. ✗ 0.2
3. ✗ 0.8
4. ✓ 0.48

Question ID : **65497837622**
Status : **Answered**
Chosen Option : **4**

Q.17 The individual probabilities of the occurrence of two events A and B are known. The probability of occurrence of both the events together will be:

Ans

1. ✓ decreased
2. ✗ one
3. ✗ zero
4. ✗ increased

Question ID : **65497837619**
Status : **Answered**
Chosen Option : **3**

Q.18 The mode of a distribution is 4 and its standard deviation and coefficient of variation are given by 9 and 4.4, respectively. Find the value of Pearson's coefficient of skewness.

Ans

1. ✗ 0.217
2. ✗ -0.667
3. ✓ -0.217
4. ✗ 0.667

Question ID : **65497837607**
Status : **Answered**
Chosen Option : **3**

Q.19 The coefficient of quartile deviation of the data set 3, 5, 7, 8, 12, 13, 14, 18, 21, is:

Ans

1. ✗ 2.2
2. ✗ 1.8
3. ✗ 0.18
4. ✓ 0.45

Question ID : **65497837595**
Status : **Answered**
Chosen Option : **4**

Q.20 Based on the given data, what is the correlation coefficient between the variables X and Y?

X	1	2	3	4	5	6	7
Y	7	8	9	10	11	12	13

Ans

1. ✗ 0.90
2. ✓ 1.00
3. ✗ 0.95
4. ✗ 0.85

Question ID : **65497837663**
Status : **Answered**
Chosen Option : **2**

Q.21 Which two of the following quantities are sample statistics?

Ans

1. ✓ $\bar{X}$ and s
2. ✗ μ and σ
3. ✗ $\bar{X}$ and μ
4. ✗ s and σ

Question ID : **65497837660**
Status : **Answered**
Chosen Option : **4**

Q.22 'Linseed crops badly spoiled on account of rains' is an example of which option:

Ans

✔ 1. random movement

✘ 2. secular trend

✘ 3. cyclical movement

✘ 4. seasonal movement

Question ID : **65497837656**
Status : **Answered**
Chosen Option : **1**

Q.23 A sample of 30 latest returns on UTI stock with unknown standard deviation reveals a mean return of S4. The estimated standard error of the sample means is 0.02. How much more of the sample (approximately) should be added to reduce the standard error of the sample mean to 0.01?

Ans

✔ 1. 90

✘ 2. 110

✘ 3. 100

✘ 4. 80

Question ID : **65497837649**
Status : **Answered**
Chosen Option : **1**

Q.24 By the method of moving averages, the seasonal index for four quarters equals to:

Ans

✔ 1. $\frac{Average}{GrandAverage} \times 100$

✘ 2. $\frac{Average}{GrandAverage} \times 10$

✘ 3. $\frac{Average}{GrandAverage}$

✘ 4. $\frac{Average}{GrandAverage} \times 4$

Question ID : **65497837658**
Status : **Answered**
Chosen Option : **1**

Q.25 The coefficient of mean deviation about median equals to:

Ans

✘ 1. (mean deviation about mode)/median

✔ 2. (mean deviation about median)/median

✘ 3. (mean deviation about the mean)/median

✘ 4. (mean deviation about median)/arithmetic mean

Question ID : **65497837594**
Status : **Answered**
Chosen Option : **4**

Q.26 If the Standard deviation of a data is 10 and Coefficient of Variation is 50, then the mean of the data is:

Ans

✗ 1. 18

✗ 2. 15

✗ 3. 2

✓ 4. 20

Question ID : **65497837588**
Status : **Answered**
Chosen Option : **4**

Q.27 The lower quartile of $f(x) = \frac{1}{12}(5 - 2x); -1 \le x \le 2$ is one root of the quadratic equation:

Ans

✗ 1. $Q_1^2 - 3Q_1 - 5 = 0$

✓ 2. $Q_1^2 - 5Q_1 - 3 = 0$

✗ 3. $Q_1^2 + 5Q_1 + 3 = 0$

✗ 4. $Q_1^2 + 3Q_1 + 5 = 0$

Question ID : **65497837627**
Status : **Not Answered**
Chosen Option : **--**

Q.28 Which variable type is required to be used more than once in factorial design?

Ans

✓ 1. Independent

✗ 2. Dependent

✗ 3. Indeterminate

✗ 4. Determinate

Question ID : **65497837637**
Status : **Not Answered**
Chosen Option : **--**

Q.29 The following measures were computed for a non-symmetrical frequency distribution: mean = 50, coefficient of variation = 35%, and Karl Pearson's coefficient of skewness of first type = −0.25. The value of mode of the distribution is:

Ans

✗ 1. $\frac{1235}{24}$

✗ 2. $\frac{835}{24}$

✗ 3. $\frac{835}{16}$

✓ 4. $\frac{435}{8}$

Question ID : **65497837609**
Status : **Answered**
Chosen Option : **4**

Q.30 For the PDF $f(x) = \frac{x}{4}; 1 < x < 3$, the 50^{th} percentile is:

Ans

✗ 1. $\sqrt{6}$

✗ 2. $\sqrt{7}$

✓ 3. $\sqrt{5}$

✗ 4. $\sqrt{8}$

Question ID : **65497837611**
Status : **Answered**
Chosen Option : **3**

Q.31 If the exponential distribution is given as $f(x) = e^{-x}; 0 \leq x < \infty$, then the Pearson's constant β_1 (excess kurtosis) is:

Ans

✗ 1. 1

✓ 2. 6

✗ 3. 3

✗ 4. 2

Question ID : **65497837626**
Status : **Answered**
Chosen Option : **4**

Q.32 For ANOVA two-way classification to test two types of cloth in fashion trends, we have the following table.

Source of Variations	SS	dr	MSS	F-Ratio
Varieties A	280	2	140	42.04
Varieties B	α	3		γ
Error	20	β	3.33	
Total	640	11		

The value of γ is:

Ans

✗ 1. 73.03

✗ 2. 17.03

✓ 3. 34.03

✗ 4. 113.03

Question ID : **65497837664**
Status : **Answered**
Chosen Option : **3**

Q.33 Boy child is more probable than girl child to a couple in 2019. A random sample found 224 boys were born among 400 newborn children. For this sample evidence that the birth of boys is more common than the birth of girls in the entire couple population, the value of test statistics is:

Ans

✔ 1. 2.4

✗ 2. 0.6

✗ 3. 0.3

✗ 4. 1.2

Question ID : **65497837598**
Status : **Not Answered**
Chosen Option : **--**

Q.34 We measure ten units from the latest production lot to measure the length of the product that gives the sample mean to be 17.55 inches, and the sample standard deviation to be 1.0 inch. The 95% confidence interval for the population mean is:

Ans

✗ 1. $17.55 \pm z_{0.05}\frac{1}{\sqrt{10}}$

✔ 2. $17.55 \pm t_{9,0.025}\frac{1}{\sqrt{10}}$

✗ 3. $17.55 \pm t_{9,0.05}\frac{1}{\sqrt{10}}$

✗ 4. $17.55 \pm z_{0.025}\frac{1}{\sqrt{10}}$

Question ID : **65497837625**
Status : **Answered**
Chosen Option : **4**

Q.35 The cost of living index numbers are used to determine actual salaries by the procedure of:

Ans

✗ 1. intertwining of index number

✗ 2. base shifting in index number

✗ 3. merging of index number

✔ 4. deflating of index number

Question ID : **65497837648**
Status : **Answered**
Chosen Option : **2**

Q.36 Which of the following options is NOT an example of absolute measures of dispersions?

Ans

✗ 1. Quartile deviation

✗ 2. Mean deviation

✔ 3. Coefficient of range

✗ 4. Variance

Question ID : **65497837617**
Status : **Answered**
Chosen Option : **3**

Q.37 In averaging the price relatives, which of the following options is the most appropriate average?

Ans

✗ 1. Median of the prices

✗ 2. Arithmetic mean of the prices

✓ 3. Geometric mean of the prices

✗ 4. Harmonic mean of the prices

Question ID : **65497837651**
Status : **Answered**
Chosen Option : **2**

Q.38 If each group comprises of one observation only, the value of the correlation ratio is:

Ans

✗ 1. 0

✗ 2. between 0 and 1

✓ 3. 1

✗ 4. between -1 and 1

Question ID : **65497837639**
Status : **Answered**
Chosen Option : **3**

Q.39 For a randomised block design ANOVA test with 5 treatments group and 6 blocks, the error degrees of freedom are:

Ans

✗ 1. 29

✗ 2. 5

✓ 3. 20

✗ 4. 4

Question ID : **65497837634**
Status : **Answered**
Chosen Option : **3**

Q.40 The median of a Weibull distribution with shape parameter k and scale parameter λ is:

Ans

✗ 1. $\lambda(\ln 2)^k$

✗ 2. $\lambda^k(\ln 2)^k$

✓ 3. $\lambda(\ln 2)^{\frac{1}{k}}$

✗ 4. $\lambda^{\frac{1}{k}}(\ln 2)^{\frac{1}{k}}$

Question ID : **65497837596**
Status : **Not Answered**
Chosen Option : **--**

Q.41 The moving averages for the trend of exponential type are to be computed by using:

Ans

✔ 1. geometric mean

✘ 2. harmonic mean

✘ 3. weighted mean

✘ 4. arithmetic mean

Question ID : **65497837657**
Status : **Answered**
Chosen Option : **4**

Q.42 The mean deviation about mean of the data 3, 6, 6, 7, 8, 11, 15, 16, is:

Ans

✔ 1. 3.75

✘ 2. 3.50

✘ 3. 3.80

✘ 4. 3.25

Question ID : **65497837590**
Status : **Answered**
Chosen Option : **1**

Q.43 If X follows the normal distribution with mean μ and variance σ^2, the fourth moment about origin is:

Ans

✘ 1. $\mu^4 + 4\mu^2\sigma^2 + 4\sigma^4$

✘ 2. $3\ \mu^4 + 4\mu^2\sigma^2 + 3\sigma^4$

✔ 3. $\mu^4 + 6\mu^2\sigma^2 + 3\sigma^4$

✘ 4. $\mu^4 + 4\mu^2\sigma^2 + 3\sigma^4$

Question ID : **65497837577**
Status : **Answered**
Chosen Option : **3**

Q.44 The television habits of 30 children were observed. The sample mean was found to be 8.2 hours per day, with a standard deviation of 2.4 hours per day. You tested the claim that the standard deviation was at least 6 hours per day. The value of the test statistics is:

Ans

✘ 1. 2.64

✘ 2. 5.64

✔ 3. 4.64

✘ 4. 3.64

Question ID : **65497837638**
Status : **Not Answered**
Chosen Option : **--**

Q.45 The median of the series 2, 17, 6, 19, 10, 11, 8, 16, 21, is:

Ans
✔ 1. 11
✘ 2. 8
✘ 3. 10
✘ 4. 6

Question ID : **65497837582**
Status : **Answered**
Chosen Option : **1**

Q.46 The mode of dataset 5-10, 10-15, 15-25, 25-35, 35-50, 50-60 with frequency of each class 2, 6, 10, 22, 27, 11, respectively, is:

Ans
✘ 1. 39.35714
✘ 2. 36.14357
✔ 3. 38.57143
✘ 4. 37.43571

Question ID : **65497837583**
Status : **Answered**
Chosen Option : **3**

Q.47 The ANOVA was used to test the results of three drug treatments. Each drug was applied to 20 patients. The MSE for this study was 16. What is the estimate of the population standard deviation for all 60 patients sampled for this study?

Ans
✘ 1. 6.928
✘ 2. 48
✘ 3. 16
✔ 4. 4

Question ID : **65497837631**
Status : **Not Answered**
Chosen Option : **--**

Q.48 A random variable X possesses the following function.

x:	3	2	1	0	−1	− 2	− 3
$f(x)$:	0.1	0.2	$3k$	k	2k	0	0.1

The value of $E(X)$ is:

Ans
✘ 1. 0.4
✘ 2. 0.3
✔ 3. 0.5
✘ 4. 0.2

Question ID : **65497837665**
Status : **Answered**
Chosen Option : **3**

Q.49 Analysis of variance is a statistical process of comparing the _____ of yield under several treatments.

Ans

✗ 1. standard deviations

✗ 2. proportions

✗ 3. variances

✓ 4. means

Question ID : **65497837628**
Status : **Not Answered**
Chosen Option : **--**

Q.50 In a tri-variate population $r_{12} = 0.7, r_{13} = 0.6$, and $r_{23} = 0.5$, then the value of $R^2_{1.23}$ is:

Ans

✗ 1. 0.50

✗ 2. 0.74

✓ 3. 0.57

✗ 4. 0.84

Question ID : **65497837647**
Status : **Not Answered**
Chosen Option : **--**

Q.51 A number is selected randomly from each of the given two sets.

Set 1: 1, 2, 3, 4, 5, 6, 7, 8

Set 2: 2, 3, 4, 5, 6, 7, 8, 9

The probability that the sum of the numbers is equal to 9 is:

Ans

✗ 1. $\frac{14}{81}$

✗ 2. $\frac{8}{91}$

✗ 3. $\frac{7}{72}$

✓ 4. $\frac{7}{64}$

Question ID : **65497837666**
Status : **Answered**
Chosen Option : **4**

Q.52 Let there be no overlap between the box and whisker plots for three drug treatments where each drug was administered to 35 individuals. The box plots for this data:

Ans

✗ 1. represent sign for the null hypothesis of ANOVA

✗ 2. can be very deceptive. You should not be looking at box plots in this setting.

✗ 3. provide no sign for, or against, the null hypothesis of ANOVA

✓ 4. represent sign against the null hypothesis of ANOVA

Question ID : **65497837632**
Status : **Not Answered**
Chosen Option : **--**

Q.53 The secular trend is depicted by the method of semi-averages when:

Ans

✓ 1. trend is linear

✗ 2. trend is logarithmic

✗ 3. trend is periodic

✗ 4. trend is exponential

Question ID : **65497837654**
Status : **Answered**
Chosen Option : **3**

Q.54 The mean absolute deviation for 11, 16, 16, 18, 19, 22, is:

Ans

✗ 1. 3.67

✓ 2. 2.67

✗ 3. 1.67

✗ 4. 0.67

Question ID : **65497837616**
Status : **Answered**
Chosen Option : **2**

Q.55 Which distribution has the same mean, median, and mode?

Ans

✗ 1. Gamma distribution

✓ 2. Normal distribution

✗ 3. Log-normal distribution

✗ 4. Chi-squared distribution

Question ID : **65497837569**
Status : **Answered**
Chosen Option : **2**

Q.56 In a library, there are 40% mathematics books and the remaining 60% are science books. It is known that 2% of the mathematics books are in Hindi, and 1% of the science books are in Hindi. If one book is taken out at random and is found to be in Hindi, the probability that it is a science book is:

Ans

✗ 1. $\frac{6}{13}$

✗ 2. $\frac{1}{4}$

✗ 3. $\frac{2}{9}$

✓ 4. $\frac{3}{7}$

Question ID : **65497837624**
Status : **Answered**
Chosen Option : **4**

Q.57 If A_1, A_2, A_3 are three mutually exclusive events, the probability of their union is equal to:

Ans

✗ 1. $P(A_1) + P(A_2) + P(A_3) - P(A_1A_2A_3)$

✗ 2. $P(A_1)P(A_2) + P(A_2)P(A_3) + P(A_3)P(A_1)$

✓ 3. $P(A_1) + P(A_2) + P(A_3)$

✗ 4. $P(A_1)P(A_2)P(A_3)$

Question ID : **65497837621**
Status : **Answered**
Chosen Option : **3**

Q.58 Which of the following options is correct?

Ans

✓ 1.
Edge-Worth-Marshal index number does not satisfy factor reversal test and circular test of consistency.

✗ 2.
Edge-Worth-Marshal index number does not satisfy the circular test of consistency.

✗ 3.
Edge-Worth-Marshal index number does not satisfy factor reversal test.

✗ 4.
Edge-Worth-Marshal index number satisfies factor reversal test and time reversal test of consistency.

Question ID : **65497837653**
Status : **Answered**
Chosen Option : **1**

Q.59

Suppose that the CDF of X is given by $F(x) = \begin{cases} 0; x < 0 \\ \frac{1}{5}; 0 \le x < 2 \\ \frac{2}{5}; 2 \le x < 4 \\ 1; x \ge 4 \end{cases}$.

The value of $P(X = 4)$ is:

Ans

✔ 1. $\frac{3}{5}$

✘ 2. $\frac{1}{5}$

✘ 3. $\frac{2}{5}$

✘ 4. $\frac{4}{5}$

Question ID : **65497837575**
Status : **Not Attempted and Marked For Review**
Chosen Option : **--**

Q.60 If Laspeyre's index is 128 and Paasche's index is 32, then Fisher's ideal index is approximately equal to:

Ans

✘ 1. 108

✘ 2. 32

✘ 3. 80

✔ 4. 64

Question ID : **65497837652**
Status : **Answered**
Chosen Option : **4**

Q.61 The regression coefficient is independent of:

(I) Origin

(II) Scale

Ans

✘ 1. Only (II) is true

✘ 2. Neither (I) nor (II) is true

✔ 3. Only (I) is true

✘ 4. Both (I) and (II) are true

Question ID : **65497837641**
Status : **Answered**
Chosen Option : **3**

Q.62 For the data on early earning of employees in a company, the raw moments about some arbitrary point $A = 12$ is given by $\mu_1' = -3, \mu_2' = 94, \mu_3' = 546, \mu_4' = 2200$. The moment μ_3 about actual mean 94 is:

Ans
- ✔ 1. 1338
- ✘ 2. 1328
- ✘ 3. 1348
- ✘ 4. 1318

Question ID : **65497837599**
Status : **Answered**
Chosen Option : **1**

Q.63 The difference between kurtosis and excess kurtosis is:

Ans
- ✔ 1. 3
- ✘ 2. 1
- ✘ 3. 0.5
- ✘ 4. 2

Question ID : **65497837610**
Status : **Answered**
Chosen Option : **1**

Q.64 Let X and Y be two jointly continuous random variables with joint pdf $f_{XY}(x, y) = Cx^2y; 0 \le y \le x \le 1$. The value of constant C is:

Ans
- ✘ 1. 1
- ✔ 2. 10
- ✘ 3. 5
- ✘ 4. 0.1

Question ID : **65497837570**
Status : **Answered**
Chosen Option : **1**

Q.65 Let X and Y be independent random variables that denote the number of virus 1 and virus 2, respectively, in one room, follow Poisson distribution with parameter $\lambda_1 = 1$ and $\lambda_2 = 2$ respectively. The expected number of viruses in the room is:

Ans
- ✘ 1. 4
- ✔ 2. 3
- ✘ 3. 2
- ✘ 4. 1

Question ID : **65497837576**
Status : **Not Answered**
Chosen Option : **--**

Q.66 Which of the following is NOT a nominal data?

Ans

✔ 1. Number of students in a management institute

✘ 2. Train number

✘ 3. Car plate number

✘ 4. Roll number of a student

Question ID : **65497837612**
Status : **Answered**
Chosen Option : **3**

Q.67 The skewness of geometric variates with $p = 0.75$ is:

Ans

✘ 1. 2.0

✘ 2. 1.5

✘ 3. 1.0

✔ 4. 2.5

Question ID : **65497837597**
Status : **Not Attempted and Marked For Review**
Chosen Option : **--**

Q.68 For qualitative sampling, which method among the following is generally used?

Ans

✘ 1. Stratified random sampling

✘ 2. Sampling using random digit table

✘ 3. Simple random sampling

✔ 4. Quota sampling

Question ID : **65497837659**
Status : **Answered**
Chosen Option : **1**

Q.69 In ANOVA, the value of statistic F lies in the range:

Ans

✘ 1. $[0,1]$

✘ 2. $(-\infty, \infty)$

✘ 3. $[1,\infty)$

✔ 4. $[0,\infty)$

Question ID : **65497837633**
Status : **Answered**
Chosen Option : **3**

Q.70 The power of a test can be improved by:

Ans

✗ 1. choosing a smaller value for α

✗ 2. using a normal approximation

✗ 3. on repeating many times

✓ 4. using a larger sample size

Question ID : **65497837620**
Status : **Answered**
Chosen Option : **4**

Q.71 In Spearman rank correlation coefficient $r_s = 1 - \frac{6\sum d^2}{n(n^2-1)}$, the maximum value of $\sum d^2$ in case of untied ranks is:

Ans

✗ 1. n

✗ 2. $\frac{1}{4}n(n^2-1)$

✗ 3. $\frac{1}{2}(n^2-1)$

✓ 4. $\frac{1}{3}n(n^2-1)$

Question ID : **65497837640**
Status : **Answered**
Chosen Option : **4**

Q.72 If X is a random variable with PDF $f(x) = \frac{x^2}{9}; 0 < x < 3$ the cumulative distribution function of $Y = X^5$ is:

Ans

✗ 1. $\frac{y^{\frac{2}{5}}}{27}; 0 < y < 243$

✗ 2. $\frac{y^{\frac{1}{5}}}{27}; 0 < y < 243$

✓ 3. $\frac{y^{\frac{3}{5}}}{27}; 0 < y < 243$

✗ 4. $\frac{y^{\frac{4}{5}}}{27}; 0 < y < 243$

Question ID : **65497837574**
Status : **Answered**
Chosen Option : **1**

Q.73 Calculate the seventh decile of the following data set.

23, 31, 26, 31, 22, 63, 44, 78, 61, 64, 35, 54, 57, 35, 73, 55, 50, 31, 56, 32, 41, 55, 29

Ans

✗ 1. 58.5

✓ 2. 55.8

✗ 3. 52

✗ 4. 60.4

Question ID : **65497837585**
Status : **Answered**
Chosen Option : **2**

Q.74 The change in the prices and quantities of each individual commodity are summarised as follows:

Price:

Commodity 1: \$5 (in 2016) \$7 (in 2017)

Commodity 2: \$10 (in 2016) \$13 (in 2017)

Commodity 3: \$20 (in 2016) \$24 (in 2017)

Quantity:

Commodity 1: 100 kg (in 2016) 150 kg (in 2017)

Commodity 2: 200 kg (in 2016) 250 kg (in 2017)

Commodity 3: 300 kg (in 2016) 350 kg (in 2017)

The Laspeyres Price Index for the year 2017, using the year 2016 as the base year, is:

Ans

✗ 1. 125.38

✓ 2. 123.53

✗ 3. 100

✗ 4. 128.23

Question ID : **65497837662**
Status : **Answered**
Chosen Option : **2**

Q.75 The error deviations within the sum of square for error statistic measure variations is:

Ans

✗ 1. within groups and between groups

✓ 2. within groups

✗ 3. between each value and the grand mean

✗ 4. between groups

Question ID : **65497837630**
Status : **Answered**
Chosen Option : **2**

Q.76 In the absence of skewness, the coefficient of skewness by Karl Pearson (S_K), Bowley's (S_Q) and by Kelly's (S_P) are:

Ans

✗ 1. $S_K = 0; S_Q > 0; S_P < 0$

✗ 2. $S_K = 0; S_Q > 0; S_P > 0$

✗ 3. $S_K = 0; S_Q < 0; S_P < 0$

✓ 4. $S_K = 0; S_Q = 0; S_P = 0$

Question ID : **65497837603**
Status : **Answered**
Chosen Option : **4**

Q.77 If X and Y are two random variables such that their expectations exist and $P(X \leq Y) = 1$, then which of the following options is true?

Ans

✗ 1. $E(X) \geq E(Y)$

✗ 2. The expectation $E(X)$ and $E(Y)$ cannot be compared

✓ 3. $E(X) \leq E(Y)$

✗ 4. $E(X) = E(Y)$

Question ID : **65497837618**
Status : **Answered**
Chosen Option : **3**

Q.78 If X is negative binomially distributed with $r = 10$ and $p = 0.4$, the skewness of X is:

Ans

✗ 1. 0.80

✗ 2. 0.75

✓ 3. 0.70

✗ 4. 0.85

Question ID : **65497837591**
Status : **Answered**
Chosen Option : **1**

Q.79 For the given distribution, what is the value of the fourth moment?

X:	-2	-1	0	1	2
$p(X = x)$:	0.3	0.1	0.2	0.3	0.1

Ans

✗ 1. 6.6

✗ 2. 7.2

✗ 3. 6.4

✓ 4. 6.8

Question ID : **65497837667**
Status : **Not Answered**
Chosen Option : **--**

Q.80 If $x_i | f_i, i = 1,2, \ldots n$ is frequency distribution with variance 4, mode 4, and arithmetic mean 2.5, then the mean square deviation from the mode is:

Ans

✗ 1. 5.50

✗ 2. 1.75

✗ 3. 2.50

✓ 4. 6.25

Question ID : **65497837592**
Status : **Not Answered**
Chosen Option : **--**

Q.81 If X follows a Poisson distribution with parameter $\lambda = 0.2$, the fourth factorial moment of X is:

Ans

✗ 1. 0.512

✓ 2. 0.0016

✗ 3. 0.008

✗ 4. 0.4096

Question ID : **65497837600**
Status : **Answered**
Chosen Option : **3**

Q.82 For the joint density $f_{XY}(x,y) = x + \frac{3}{2}y^2; 0 \le x \le 1, 0 \le y \le 1$, the value of $P\left(0 \le Y \le \frac{1}{2} \middle| 0 \le X \le \frac{1}{2}\right)$ is:

Ans

✓ 1. $\frac{8}{32}$

✗ 2. $\frac{6}{32}$

✗ 3. $\frac{10}{32}$

✗ 4. $\frac{12}{32}$

Question ID : **65497837573**
Status : **Not Attempted and Marked For Review**
Chosen Option : **--**

Q.83 In the completely randomised design, the variance between columns depicts the difference between the _____ of each group and the_____.

Ans

✗ 1. sample variance; population variance

✗ 2. sample standard deviation; population standard deviation

✗ 3. sample statistics; population parameter

✓ 4. sample mean; grand mean

Question ID : **65497837636**
Status : **Not Answered**
Chosen Option : **--**

Q.84 For positive data series, the relative position of arithmetic, geometric and harmonic mean is:

Ans

✗ 1. AM < GM < HM

✗ 2. AM > HM > GM

✗ 3. GM < HM < AM

✓ 4. AM > GM > HM

Question ID : **65497837584**
Status : **Answered**
Chosen Option : **4**

Q.85 In a class of 50 students, 10 have failed and their average of marks is 2.5. The total of marks secured by the entire class is 285. Find the average marks of those who have passed.

Ans

✗ 1. 2.5

✗ 2. 3.5

✗ 3. 4.5

✓ 4. 6.5

Question ID : **65497837587**
Status : **Answered**
Chosen Option : **4**

Q.86 Given that $P(A) = 1/3, P(B) = 1/4, P(A|B) = 1/6$, the probability $P(B|A)$ is equal to:

Ans

✓ 1. $\frac{1}{8}$

✗ 2. $\frac{3}{4}$

✗ 3. $\frac{1}{4}$

✗ 4. $\frac{3}{8}$

Question ID : **65497837623**
Status : **Answered**
Chosen Option : **1**

Q.87 The number of class intervals in a frequency table does NOT depend on:

Ans

✗ 1. value of observations

✗ 2. total number of observations

✓ 3. range of observations

✗ 4. minimum and maximum values of observations

Question ID : **65497837579**
Status : **Answered**
Chosen Option : **3**

Q.88 If the Bowley's coefficient of skewness S_Q is positive, which of the following options is correct?

Ans

✓ 1. $Q_2 - Q_1 < Q_3 - Q_2$

✗ 2. $Q_2 - Q_1 \geq Q_3 - Q_2$

✗ 3. $Q_2 - Q_1 \leq Q_3 - Q_2$

✗ 4. $Q_2 - Q_1 > Q_3 - Q_2$

Question ID : **65497837605**
Status : **Answered**
Chosen Option : **1**

Q.89 The first four raw moments of distribution are 2, 136, 320 and 40,000. The coefficient of kurtosis is:

Ans

1. $\frac{(-456)^2}{(132)^3}$
2. $\frac{40656}{(132)^2}$
3. $\frac{-456}{(132)^2}$
4. $\frac{(40656)^2}{(132)^3}$

Question ID : **65497837606**
Status : **Not Answered**
Chosen Option : **--**

Q.90 Which of the following is NOT an advantage of tabulation?

Ans

1. It saves space and time.
2. It helps analyse and interpret.
3. It converts simple data into complex data.
4. It facilitates comparison.

Question ID : **65497837614**
Status : **Answered**
Chosen Option : **3**

Q.91 If a random sample of size n is drawn without replacement from a finite population of size N, the correction factor for standard error of sample mean is:

Ans

1. $\frac{N-n}{N-1}$
2. $\sqrt{\frac{N-n}{N-1}}$
3. $\frac{N-1}{N-n}$
4. $\sqrt{\frac{N-1}{N-n}}$

Question ID : **65497837635**
Status : **Answered**
Chosen Option : **4**

Q.92 The observed value $x = 13.7$ belongs to which quartile if continuous random variable X follows a uniform distribution with $a = 5$ and $b = 22$?

Ans

1. Third
2. Second
3. First
4. Fourth

Question ID : **65497837586**
Status : **Not Answered**
Chosen Option : **--**

Q.93 The workers at a large manufacturing company can earn monthly bonuses. The distribution of monthly bonuses earned by all workers last year has a mean of 2.3 and a standard deviation 1.3. Let Z represent the standard normal distribution. If X represents the mean of monthly bonuses earned last year for a random sample of 40 workers, which of the following gives the approximate probability that X is less than 2?

Ans

✗ 1. $P\left(z < \frac{2-2.3}{1.3}\right)$

✗ 2. $P\left(z < \frac{2.3-2}{1.3}\right)$

✓ 3. $P\left(z < \frac{2-2.3}{\left(\frac{1.3}{\sqrt{40}}\right)}\right)$

✗ 4. $P\left(z < \frac{2.3-2}{\left(\frac{1.3}{\sqrt{40}}\right)}\right)$

Question ID : **65497837650**
Status : **Answered**
Chosen Option : **3**

Q.94 The multiplicative model of the time series is:

Ans

✓ 1. $Y = TSCI$

✗ 2. $Y = a + bX + cX^2$

✗ 3. $Y = a + bX$

✗ 4. $Y = T + S + C + I$

Question ID : **65497837655**
Status : **Answered**
Chosen Option : **1**

Q.95 The geometric mean for the data set having negative observations:

Ans

✗ 1. will be zero

✗ 2. will be negative

✓ 3. can't be defined

✗ 4. will be positive

Question ID : **65497837608**
Status : **Answered**
Chosen Option : **4**

Q.96 For ten students, the Spearman's rank correlation coefficient between scores in two different subjects is -0.3. The value of the sum of the square of the difference of ranks is:

Ans

✗ 1. 218.5

✗ 2. 222.5

✗ 3. 210.5

✓ 4. 214.5

Question ID : **65497837642**
Status : **Not Answered**
Chosen Option : **--**

Q.97 What two pieces of information are needed at given level of significance for the determination of the critical value for testing whether the test statistic of ANOVA is statistically significant?

Ans

✗ 1. Mean, sample standard deviation

✓ 2. Sample size, number of groups

✗ 3. MSTR, MSE

✗ 4. Expected frequency, obtained frequency

Question ID : **65497837629**
Status : **Answered**
Chosen Option : **3**

Q.98 Which distribution has the same mean and variance?

Ans

✓ 1. Poisson distribution

✗ 2. Exponential distribution

✗ 3. Geometric distribution

✗ 4. Gamma distribution

Question ID : **65497837568**
Status : **Answered**
Chosen Option : **1**

Q.99 The profit of a company during the first five months of a year is ₹Ninety-six lakhs per month and during the last seven months is ₹120 lakhs per month. The average profit per month during the whole year is:

Ans

✗ 1. ₹108 lakhs per month

✗ 2. ₹120 lakhs per month

✗ 3. ₹100 lakhs per month

✓ 4. ₹110 lakhs per month

Question ID : **65497837581**
Status : **Answered**
Chosen Option : **4**

Q.100 _____ is a plot of a sequence of observations made over time.

Ans

✗ 1. histogram

✗ 2. ogive

✓ 3. historigram

✗ 4. box and whisker plot

Question ID : **65497837615**
Status : **Answered**
Chosen Option : **3**