STAFF SELECTION COMMISSION
(Government of India)

Combined Graduate Level Examination 2024 Tier II

Roll Number	
Candidate Name	
Venue Name	DD College
Exam Date	19/01/2025
Exam Time	9:00 AM - 11:00 AM
Subject	CGLE 2024 Tier II Paper II Statistics

Section : **Statistics**

Q.1 For the bivariate random variable (X,Y), let the joint probability density function be $f(x,y) = \frac{9(1+x+y)}{2(1+x)^4(1+y)^4}$ for $0 < x < \infty, 0 < y < \infty$. The marginal pdf of X is:

Ans

1. $\frac{3(2x+3)}{2(1+x)}$
2. $\frac{3(2x+1)}{4(1+x)^4}$
3. $\frac{3(2x+3)}{(1+x)^4}$
4. ✔ $\frac{3(2x+3)}{4(1+x)^4}$

Question ID : **6306801352886**
Option 1 ID : **6306805325709**
Option 2 ID : **6306805325707**
Option 3 ID : **6306805325708**
Option 4 ID : **6306805325706**
Status : **Answered**
Chosen Option : **3**

Q.2 **Monthly sales data (in units) shows the following trend-adjusted ratios for three months: January (1.1), February (0.9), and March (1.0). What is the average seasonal index for this quarter?**

Ans

1. 0.95
2. 0.9
3. ✔ 1.0
4. 1.1

Question ID : **6306801302623**
Option 1 ID : **6306805125406**
Option 2 ID : **6306805125408**
Option 3 ID : **6306805125405**
Option 4 ID : **6306805125407**
Status : **Answered**
Chosen Option : **3**

Q.3 Duncan's Multiple Range Test makes use of which statistical measure?

Ans

1. Standard Error of the Means
2. Regression Coefficient
3. Range Statistic (R)
4. F-statistic

Question ID : **6306801294827**
Option 1 ID : **6306805093666**
Option 2 ID : **6306805093668**
Option 3 ID : **6306805093667**
Option 4 ID : **6306805093665**
Status : **Answered**
Chosen Option : **3**

Q.4 For three random variables X_1, X_2 and X_3, the correlation coefficients between pairs of random variables are $r_{12} = r_{13} = r_{23} = r \neq 1$.

For $R_{1.23}$ (multiple correlation coefficient), $1 - R^2_{1.23}$ is written as:

Ans

1. $\frac{(1+r)(1+2r)}{1-r}$
2. $\frac{(1+2r)}{1+r}$
3. ✔ $\frac{(1-r)(1+2r)}{1+r}$
4. $\frac{(1+r)(1-2r)}{1+r}$

Question ID : **6306801352945**
Option 1 ID : **6306805325943**
Option 2 ID : **6306805325945**
Option 3 ID : **6306805325942**
Option 4 ID : **6306805325944**
Status : **Answered**
Chosen Option : **4**

Q.5 What is the primary challenge in using the free-hand curve method for trend estimation?

Ans

1. It is time-consuming and computationally intensive.
2. ✔ It is subjective and may lead to inconsistent results.
3. It cannot identify cyclical patterns.
4. It requires advanced statistical knowledge.

Question ID : **6306801302260**
Option 1 ID : **6306805123944**
Option 2 ID : **6306805123945**
Option 3 ID : **6306805123943**
Option 4 ID : **6306805123946**
Status : **Answered**
Chosen Option : **2**

Q.6 **If the critical region is evenly distributed, then the test is referred to as:**

Ans

1. Three tailed
2. Zero tailed
3. One tailed
4. Two tailed ✔

Question ID : **6306801307943**
Option 1 ID : **6306805146577**
Option 2 ID : **6306805146578**
Option 3 ID : **6306805146576**
Option 4 ID : **6306805146575**
Status : **Answered**
Chosen Option : **4**

Q.7 Which of the following is NOT true for seasonal variation?

Ans

1. Caused by public holidays
2. Caused by rainfall
3. Repeated irregularly ✔
4. Variation in a time series within one year

Question ID : **6306801352953**
Option 1 ID : **6306805325977**
Option 2 ID : **6306805325976**
Option 3 ID : **6306805325975**
Option 4 ID : **6306805325974**
Status : **Answered**
Chosen Option : **3**

Q.8 **In a two-way ANOVA, how many hypotheses are tested?**

Ans

1. Three ✔
2. One
3. Four
4. Two

Question ID : **6306801294823**
Option 1 ID : **6306805093651**
Option 2 ID : **6306805093649**
Option 3 ID : **6306805093652**
Option 4 ID : **6306805093650**
Status : **Answered**
Chosen Option : **1**

Q.9 **In ANCOVA, what happens when the covariate is not linearly related to the dependent variable?**

Ans

1. The results of ANCOVA may be biased. ✔
2. The covariate becomes irrelevant.
3. All assumptions of ANCOVA are met.
4. The F-statistic becomes insignificant.

Question ID : **6306801352934**
Option 1 ID : **6306805325898**
Option 2 ID : **6306805325900**
Option 3 ID : **6306805325901**
Option 4 ID : **6306805325899**
Status : **Answered**
Chosen Option : **1**

Q.10 **Let X and Y be two independent Poisson variates with rate 5 and 10, respectively, then the E(XY=2) is equal to:**

Ans

1.
2.
3.
4. 2

Question ID : **6306801352810**
Option 1 ID : **6306805325402**
Option 2 ID : **6306805325403**
Option 3 ID : **6306805325405**
Option 4 ID : **6306805325404**
Status : **Answered**
Chosen Option : **3**

Q.11 The mean of a residual error in a one way classified data analysis is:

Ans

1. 2
2. 0 ✔
3. -1
4. 1

Question ID : **6306801352853**
Option 1 ID : **6306805325577**
Option 2 ID : **6306805325576**
Option 3 ID : **6306805325574**
Option 4 ID : **6306805325575**
Status : **Answered**
Chosen Option : **2**

Q.12 If the angle between two lines of regression is 90°, then correlation coefficient is:

Ans

1. 1
2. $\frac{1}{2}$
3. 0 ✔
4. -1

Question ID : **6306801352944**
Option 1 ID : **6306805325941**
Option 2 ID : **6306805325938**
Option 3 ID : **6306805325940**
Option 4 ID : **6306805325939**
Status : **Answered**
Chosen Option : **3**

Q.13

Ans

1.

2. $\frac{\text{Current month's Value} + \text{Previous month value}}{2} \times 100$

3. $\frac{\text{Previous month's Value}}{\text{Current month's value}} \times 100$

✔ 4. $\frac{\text{Current month's Value}}{\text{Previous month's value}} \times 100$

Question ID : **6306801352875**
Option 1 ID : **6306805325665**
Option 2 ID : **6306805325664**
Option 3 ID : **6306805325663**
Option 4 ID : **6306805325662**
Status : **Answered**
Chosen Option : **4**

Q.14 On fitting of a trend line $Y = a + bt$ on a time series (with year as a unit of time), the monthly increment/decrement is given by

Ans

✔ 1. $b/12$

2. $a/12$

3. a

4. b

Question ID : **6306801352873**
Option 1 ID : **6306805325656**
Option 2 ID : **6306805325657**
Option 3 ID : **6306805325654**
Option 4 ID : **6306805325655**
Status : **Answered**
Chosen Option : **1**

Q.15 If M: Mean, Md: Median, Mo: Mode, Q_1: First Quartile and Q_3: Third Quartile, then which of the following is an absolute measure of skewness?

Ans

1. $Q_1 - Q_3/Md$

✔ 2. $M - Md$

3. $M + Mo$

4. $\frac{Q_3 + Q_1 - 2Md}{Q_3 - Q_1}$

Question ID : **6306801352910**
Option 1 ID : **6306805325804**
Option 2 ID : **6306805325802**
Option 3 ID : **6306805325803**
Option 4 ID : **6306805325805**
Status : **Answered**
Chosen Option : **4**

Q.16 Which of the following is NOT true?

Ans

1. Frequency polygon facilitates the comparison of more than one series of data
2. Histograms are constructed using cumulative frequencies
3. Histogram consists of a set of rectangles with bases on horizontal axes
4. Histogram consists of a set of rectangles with centres at class marks

Question ID : **6306801294078**
Option 1 ID : **6306805090467**
Option 2 ID : **6306805090465**
Option 3 ID : **6306805090466**
Option 4 ID : **6306805090468**
Status : **Answered**
Chosen Option : **2**

Q.17 For a two-way classification with p treatments, q blocks and r observations per cell, the degrees of freedom for error and total, respectively, are:

Ans

1. pq-1 and pq (r-1)
2. (p-1)(q-1) and pqr-1
3. ✔ pq (r-1) and pqr-1
4. p-1 and pq (r-1)

Question ID : **6306801352937**
Option 1 ID : **6306805325912**
Option 2 ID : **6306805325911**
Option 3 ID : **6306805325910**
Option 4 ID : **6306805325913**
Status : **Answered**
Chosen Option : **1**

Q.18 Let X and Y be two independent Poisson variates with rate 5 and 10, respectively, then the distribution of Z=X+Y is:

Ans

1. ✔ Poisson distribution with rate 15
2. Exponential distribution with rate 15
3. Normal distribution with mean 15 and variance 1
4. Gamma distribution with rate 5 and shape 10

Question ID : **6306801352803**
Option 1 ID : **6306805325375**
Option 2 ID : **6306805325374**
Option 3 ID : **6306805325377**
Option 4 ID : **6306805325376**
Status : **Answered**
Chosen Option : **1**

Q.19 **The second central moment of the Binomial distribution is:**

Ans

1.

✔ 2. $\frac{\pm}{4}$

3. 1

4. $\frac{1}{2}$

Question ID : **6306801324606**
Option 1 ID : **6306805212708**
Option 2 ID : **6306805212707**
Option 3 ID : **6306805212705**
Option 4 ID : **6306805212706**
Status : **Answered**
Chosen Option : **1**

Q.20 10−15 is the model class with 25 as its frequency. Also if the frequency of the class preceding and succeeding the model class is 10 and 15, respectively, then the value of mode is:

Ans

1.

✔ 2. 13

3.

4.

Question ID : **6306801352817**
Option 1 ID : **6306805325433**
Option 2 ID : **6306805325432**
Option 3 ID : **6306805325430**
Option 4 ID : **6306805325431**
Status : **Answered**
Chosen Option : **2**

Q.21 **Which of the following is NOT true about ungrouped frequency distribution?**

Ans

1. Frequency of an observation is the number of times it occurs

2. Tally marks are used for finding frequencies

3. Used for putting raw data in a condensed form

✔ 4. Used when number of observations in data set is very large

Question ID : **6306801293776**
Option 1 ID : **6306805089259**
Option 2 ID : **6306805089258**
Option 3 ID : **6306805089257**
Option 4 ID : **6306805089260**
Status : **Answered**
Chosen Option : **2**

Q.22

Ans

1.

2.

✔ 3. Skewness

4. Kurtosis

Question ID : **6306801352830**
Option 1 ID : **6306805325483**
Option 2 ID : **6306805325482**
Option 3 ID : **6306805325484**
Option 4 ID : **6306805325485**
Status : **Answered**
Chosen Option : **3**

Q.23 **For testing whether two independent Normal populations (with unknown and equal variances) have same mean, one uses:**

Ans

✔ 1. t distribution

2. Standard Normal Distribution

3. Chi Square Distribution

4. F distribution

Question ID : **6306801307918**
Option 1 ID : **6306805146477**
Option 2 ID : **6306805146475**
Option 3 ID : **6306805146476**
Option 4 ID : **6306805146478**
Status : **Answered**
Chosen Option : **3**

Q.24 **The following data represents a time series.**

Period : 1 2 3 4 5
Observed values : 150 140 160 170 180

Compute the first-order and second-order differences for period 3.

Ans

✔ 1. First-Order: 20, Second-Order: −30

2. First-Order: −10, Second-Order: −10

3. First-Order: −10, Second-Order: 20

4. First-Order: 20, Second-Order: 10

Question ID : **6306801302739**
Option 1 ID : **6306805125869**
Option 2 ID : **6306805125872**
Option 3 ID : **6306805125870**
Option 4 ID : **6306805125871**
Status : **Answered**
Chosen Option : **3**

Q.25 The relative frequency of a class is:

Ans

1. frequency of the class added to total frequency of all classes
2. frequency of the class multiplied by total frequency of all classes
3. frequency of the class subtracted from total frequency of all classes
4. ✔ frequency of the class divided by total frequency of all classes

Question ID : **6306801293744**
Option 1 ID : **6306805089132**
Option 2 ID : **6306805089130**
Option 3 ID : **6306805089131**
Option 4 ID : **6306805089129**
Status : **Answered**
Chosen Option : **4**

Q.26 Let (X, Y) have the probability density function (pdf) as

$$f(x,y) = \begin{cases} c(x+2y) \text{ if } 0 < x < 2,\ 0 < y < 1 \\ 0 \text{ , otherwise} \end{cases}.$$

The value of c is:

Ans

1. $\frac{1}{2}$
2. $\frac{3}{4}$
3. ✔ $\frac{1}{4}$
4. 1

Question ID : **6306801352883**
Option 1 ID : **6306805325696**
Option 2 ID : **6306805325697**
Option 3 ID : **6306805325694**
Option 4 ID : **6306805325695**
Status : **Answered**
Chosen Option : **2**

Q.27 A model being fitted is said to be adequate if the residual plot:

Ans

1. is quadratic
2. is non-linear
3. is U-shaped
4. ✔ displays random pattern

Question ID : **6306801312678**
Option 1 ID : **6306805168031**
Option 2 ID : **6306805168029**
Option 3 ID : **6306805168028**
Option 4 ID : **6306805168030**
Status : **Answered**
Chosen Option : **1**

Q.28

Ans

1.

2.

3. Geometric mean

4. mean

Question ID : **6306801352822**
Option 1 ID : **6306805325451**
Option 2 ID : **6306805325452**
Option 3 ID : **6306805325453**
Option 4 ID : **6306805325450**
Status : **Answered**
Chosen Option : **4**

Q.29 Which definition of probability is NOT applicable if the events of a random experiment are not equally likely?

Ans

1. Empirical definition

2. Axiomatic definition

3. Classical definition

4. Bayesian definition

Question ID : **6306801352844**
Option 1 ID : **6306805325539**
Option 2 ID : **6306805325540**
Option 3 ID : **6306805325538**
Option 4 ID : **6306805325541**
Status : **Answered**
Chosen Option : **1**

Q.30 If the joint distribution of two random variables X_1 and X_2 is

$$f(x_1,x_2)=\begin{cases}x_1+x_2; 0<x_1,x_2<1\\ 0, \text{otherwise}\end{cases}$$, then $P(0<X_2<0.5)$ is equal to:

Ans

✔ 1. 3/8

2. 1/2

3. 3/4

4. 1/4

Question ID : **6306801352807**
Option 1 ID : **6306805325392**
Option 2 ID : **6306805325390**
Option 3 ID : **6306805325393**
Option 4 ID : **6306805325391**
Status : **Not Answered**
Chosen Option : **--**

Q.31 **Find the probability that there may be 53 Sundays in a leap year.**

Ans

1.

2.

3. $\frac{5}{7}$

4. $\frac{1}{7}$

Question ID : **6306801295015**
Option 1 ID : **6306805094485**
Option 2 ID : **6306805094487**
Option 3 ID : **6306805094488**
Option 4 ID : **6306805094486**
Status : **Answered**
Chosen Option : **1**

Q.32 For two random variables X and Y, how many lines of regression are possible?

Ans

1. 1

2. 3

✔ 3. 2

4. 0

Question ID : **6306801352864**
Option 1 ID : **6306805325619**
Option 2 ID : **6306805325621**
Option 3 ID : **6306805325620**
Option 4 ID : **6306805325618**
Status : **Answered**
Chosen Option : **3**

Q.33 Out of 100 numbers, 20 are 4's, 40 are 5's, 30 are 6's and the remaining are 7's. The arithmetic mean of the numbers is:

Ans

1. 5.8

2. 4.6

✔ 3. 5.3

4. 1.9

Question ID : **6306801352893**
Option 1 ID : **6306805325736**
Option 2 ID : **6306805325737**
Option 3 ID : **6306805325735**
Option 4 ID : **6306805325734**
Status : **Answered**
Chosen Option : **3**

Q.34 Level of significance is:

Ans

1. Probability of Type I Error
2. 1 − Probability of Type I Error
3. 1 − Probability of Type II Error
4. Probability of Type II Error

Question ID : **6306801307996**
Option 1 ID : **6306805146788**
Option 2 ID : **6306805146790**
Option 3 ID : **6306805146789**
Option 4 ID : **6306805146787**
Status : **Answered**
Chosen Option : **3**

Q.35 Let X follow Poisson distribution with mean λ. If

$$P(X = 2) = \frac{1}{2} P(X = 3),$$ then the value of λ is:

Ans

1. 4
2. ✔ 6
3. 7
4. 2

Question ID : **6306801352881**
Option 1 ID : **6306805325686**
Option 2 ID : **6306805325688**
Option 3 ID : **6306805325687**
Option 4 ID : **6306805325689**
Status : **Answered**
Chosen Option : **2**

Q.36 Which of the following is the relative measure of skewness?

Ans

1. β_2
2. β_1
3. $(X - \mu)/\sigma$
4. ✔ $\frac{Q_3 - 2Q_2 + Q_1}{Q_3 - Q_1}$

Question ID : **6306801352834**
Option 1 ID : **6306805325501**
Option 2 ID : **6306805325498**
Option 3 ID : **6306805325499**
Option 4 ID : **6306805325500**
Status : **Answered**
Chosen Option : **4**

Q.37

Ans

1.

2.

3. 5.28

4. 4.67

Question ID : **6306801352842**
Option 1 ID : **6306805325530**
Option 2 ID : **6306805325532**
Option 3 ID : **6306805325533**
Option 4 ID : **6306805325531**
Status : **Answered**
Chosen Option : **3**

Q.38 Before using secondary data, one need NOT verify:

Ans

1. reliability of data

2. suitability of data

✔ 3. expenditure involved at time of collection of data

4. adequacy of data

Question ID : **6306801293836**
Option 1 ID : **6306805089489**
Option 2 ID : **6306805089490**
Option 3 ID : **6306805089492**
Option 4 ID : **6306805089491**
Status : **Answered**
Chosen Option : **3**

Q.39 25 books are placed at random on a shelf. The probability that a particular pair of books shall be always together is:

Ans

1. 3/25

✔ 2. 2/25

3. 1/25

4. 5/25

Question ID : **6306801352846**
Option 1 ID : **6306805325546**
Option 2 ID : **6306805325548**
Option 3 ID : **6306805325549**
Option 4 ID : **6306805325547**
Status : **Answered**
Chosen Option : **3**

Q.40 **Scatter diagram for the following data shows _____.**

X 1 2 3 4 5
Y 9 8 7 6 5

Ans

1. Negative Perfect Correlation
2. Perfect Positive Correlation
3. Zero Correlation
4. Positive Correlation

Question ID : **6306801313409**
Option 1 ID : **6306805168390**
Option 2 ID : **6306805168391**
Option 3 ID : **6306805168389**
Option 4 ID : **6306805168388**
Status : **Answered**
Chosen Option : **1**

Q.41 With usual notations, the 95% confidence limits for the difference of two proportions is:

Ans

✔ 1. $(p_1 - p_2) \pm 1.96\sqrt{\frac{p_1q_1}{n_1} + \frac{p_2q_2}{n_2}}$

2. $(p_1 + p_2) \pm 1.96\sqrt{\frac{p_1q_1}{n_1} + \frac{p_2q_2}{n_2}}$

3. $(p_1 + p_2) \pm 1.96\sqrt{\frac{p_1q_1}{n_1} - \frac{p_2q_2}{n_2}}$

4. $(p_1 - p_2) \pm 1.96\sqrt{\frac{p_1q_1}{n_1} - \frac{p_2q_2}{n_2}}$

Question ID : **6306801352880**
Option 1 ID : **6306805325685**
Option 2 ID : **6306805325682**
Option 3 ID : **6306805325683**
Option 4 ID : **6306805325684**
Status : **Answered**
Chosen Option : **1**

Q.42 Find the coefficient of skewness from the following information:

Mode = 11, median = 8, $Q_3 - Q_1 = 8$, $Q_3 + Q_1 = 22$.

Ans

1. 1/3
2. 1/4
✔ 3. 3/4
4. 1/5

Question ID : **6306801352829**
Option 1 ID : **6306805325479**
Option 2 ID : **6306805325480**
Option 3 ID : **6306805325478**
Option 4 ID : **6306805325481**
Status : **Answered**
Chosen Option : **3**

Q.43

Ans

1.

2.

3. neither mutually exclusive nor exhaustive

✔ 4. mutually exclusive and exhaustive

Question ID : **6306801352847**
Option 1 ID : **6306805325550**
Option 2 ID : **6306805325551**
Option 3 ID : **6306805325553**
Option 4 ID : **6306805325552**
Status : **Answered**
Chosen Option : **4**

Q.44 If $Y = \frac{X}{2} + 2$ and $X = \frac{Y}{8} - 1$ are regression lines of Y on X and X on Y, then correlation coefficient between X and Y is equal to:

Ans

1. $\pm\frac{1}{4}$

2. $\pm\frac{1}{6}$

✔ 3. $\frac{1}{4}$

4. $\frac{1}{6}$

Question ID : **6306801352942**
Option 1 ID : **6306805325933**
Option 2 ID : **6306805325932**
Option 3 ID : **6306805325931**
Option 4 ID : **6306805325930**
Status : **Answered**
Chosen Option : **3**

Q.45 The coefficient of kurtosis (β_2) of standard normal distribution is equal to:

Ans

1. -3

2. 0

✔ 3. 3

4. 1

Question ID : **6306801352811**
Option 1 ID : **6306805325408**
Option 2 ID : **6306805325406**
Option 3 ID : **6306805325407**
Option 4 ID : **6306805325409**
Status : **Answered**
Chosen Option : **3**

Q.46

Ans

1.

2. $\left(\bar{x}^2 \pm 1.96\frac{\sigma}{\sqrt{n}}\right)$

3. $\left(\bar{x} \pm 1.96\frac{\sigma^2}{\sqrt{n}}\right)$

4. $\left(\bar{x} \pm 1.96\frac{\sigma^2}{n}\right)$

Question ID : **6306801352879**
Option 1 ID : **6306805325678**
Option 2 ID : **6306805325681**
Option 3 ID : **6306805325679**
Option 4 ID : **6306805325680**
Status : **Answered**
Chosen Option : **1**

Q.47 O-gives are NOT useful for locating:

Ans

1. percentiles
2. median
3. quartiles
4. mean ✔

Question ID : **6306801294100**
Option 1 ID : **6306805090555**
Option 2 ID : **6306805090553**
Option 3 ID : **6306805090554**
Option 4 ID : **6306805090556**
Status : **Answered**
Chosen Option : **4**

Q.48 Which of the following index numbers is the geometric mean of Laspeyre's and Paasche's Index number?

Ans

1. Drobish–Bowley Index
2. Marshall–Edgeworth Index
3. Irving Fisher Index ✔
4. Walsch Index

Question ID : **6306801352869**
Option 1 ID : **6306805325638**
Option 2 ID : **6306805325639**
Option 3 ID : **6306805325640**
Option 4 ID : **6306805325641**
Status : **Answered**
Chosen Option : **3**

Q.49 **Which component of a time series represents short-term fluctuations due to seasonal factors?**

Ans

1. Seasonal component
2. Irregular component
3. Cyclical component
4. Trend

Question ID : **6306801352952**
Option 1 ID : **6306805325972**
Option 2 ID : **6306805325973**
Option 3 ID : **6306805325971**
Option 4 ID : **6306805325970**
Status : **Answered**
Chosen Option : **4**

Q.50 Type I error occurs when:

Ans

1. a false null hypothesis is rejected
2. ✔ a true null hypothesis is rejected
3. a true null hypothesis is accepted
4. a false null hypothesis is accepted

Question ID : **6306801352959**
Option 1 ID : **6306805326000**
Option 2 ID : **6306805325998**
Option 3 ID : **6306805325999**
Option 4 ID : **6306805326001**
Status : **Answered**
Chosen Option : **3**

Q.51 **Which of the following statements is FALSE?**

Ans

1. An alternative hypothesis is complementary to null hypothesis.
2. ✔ The hypothesis for testing mu < mu0 is two sided / two tailed.
3. The null hypothesis H0: mu = mu0 can be tested against the alternative H1: mu not equal to mu0.
4. The hypothesis for testing mu > mu0 is one sided / right tailed.

Question ID : **6306801308014**
Option 1 ID : **6306805146863**
Option 2 ID : **6306805146866**
Option 3 ID : **6306805146864**
Option 4 ID : **6306805146865**
Status : **Not Answered**
Chosen Option : **--**

Q.52

Ans

1.

2.

3. $\sigma/2$

✔ 4. μ

Question ID : **6306801352839**
Option 1 ID : **6306805325519**
Option 2 ID : **6306805325520**
Option 3 ID : **6306805325521**
Option 4 ID : **6306805325518**
Status : **Answered**
Chosen Option : **4**

Q.53 When two judges rank only two individuals, then value of Spearman's rank correlation coefficient is:

Ans

✔ 1. -1 or 1

2. between 0 and 1

3. -1 or 0

4. 0 or 1

Question ID : **6306801352939**
Option 1 ID : **6306805325920**
Option 2 ID : **6306805325921**
Option 3 ID : **6306805325918**
Option 4 ID : **6306805325919**
Status : **Answered**
Chosen Option : **1**

Q.54 The formula used for finding the simple aggregate index numbers is:

Ans

1. $\frac{\sum p_{oj}p_{ij}}{\sum p_{oj}} \times 100$

2. $\frac{\sum p_{ij}}{\sum p_{oj}p_{ij}} \times 100$

✔ 3. $\frac{\sum p_{ij}}{\sum p_{oj}} \times 100$

4. $\frac{\sum p_{oj}}{\sum p_{ij}} \times 100$

Question ID : **6306801352868**
Option 1 ID : **6306805325636**
Option 2 ID : **6306805325637**
Option 3 ID : **6306805325634**
Option 4 ID : **6306805325635**
Status : **Answered**
Chosen Option : **3**

Q.55 If S^2 is the sample variance of a sample of size n and s^2 is an unbiased estimator of population variance, then which of the following is true?

Ans

1.

2.

3. $(n+1)\,s^2 = n\,S^2$

4. $n\,s^2 = (n+1)\,S^2$

Question ID : **6306801300047**
Option 1 ID : **6306805115059**
Option 2 ID : **6306805115060**
Option 3 ID : **6306805115062**
Option 4 ID : **6306805115061**
Status : **Answered**
Chosen Option : **2**

Q.56 For three random variables X_1 , X_2 and X_3 , correlation coefficients between pairs of random variables are $r_{12} = sin^2\theta$, $r_{13} = cos\theta$ and $r_{23} = sin\theta$.

The partial correlation coefficient $r_{12.3}$ is given by:

Ans

✔ 1. $tan\theta - 1$

2. $sin\theta - 1$

3. $cot\,\theta - 1$

4. $cos\theta - 1$

Question ID : **6306801352938**
Option 1 ID : **6306805325916**
Option 2 ID : **6306805325914**
Option 3 ID : **6306805325917**
Option 4 ID : **6306805325915**
Status : **Answered**
Chosen Option : **1**

Q.57 **Which of the following statements is NOT true about a critical region w?**

Ans

1. Known as region of acceptance

✔ 2. Alternative hypothesis accepted if set points lie in w

3. Null hypothesis rejected if set points lie in w

4. Known as region of rejection

Question ID : **6306801307936**
Option 1 ID : **6306805146548**
Option 2 ID : **6306805146550**
Option 3 ID : **6306805146549**
Option 4 ID : **6306805146547**
Status : **Answered**
Chosen Option : **1**

Q.58

Ans

1.

2.

3.

4. 10.5

Question ID : **6306801352906**
Option 1 ID : **6306805325789**
Option 2 ID : **6306805325788**
Option 3 ID : **6306805325786**
Option 4 ID : **6306805325787**
Status : **Answered**
Chosen Option : **1**

Q.59 In a data set, let the first and third quartiles be 268.25 and 290.75, respectively. The quartile deviation is equal to:

Ans

1.

✔ 2. 11.25

3. 18.5

4.

Question ID : **6306801352899**
Option 1 ID : **6306805325758**
Option 2 ID : **6306805325760**
Option 3 ID : **6306805325759**
Option 4 ID : **6306805325761**
Status : **Answered**
Chosen Option : **2**

Q.60 It has been found that 2% of the tools produced by a certain machine are defective. What is the probability that in a shipment of 400 such tools, 3% or more will be defective? (Probability that the normal variate lies between 0 and 1.43 is 0.4236.)

Ans

✔ 1. 0.0764

2. 0.50

3. 0.4236

4. 1.43

Question ID : **6306801300075**
Option 1 ID : **6306805115174**
Option 2 ID : **6306805115171**
Option 3 ID : **6306805115172**
Option 4 ID : **6306805115173**
Status : **Answered**
Chosen Option : **1**

Q.61

Ans

1.
2.
3. 3/4
4. 25/4 ✔

Question ID : **6306801352819**
Option 1 ID : **6306805325440**
Option 2 ID : **6306805325441**
Option 3 ID : **6306805325438**
Option 4 ID : **6306805325439**
Status : **Answered**
Chosen Option : **4**

Q.62 Which of the following components of time series reflect the general tendency of the data to increase or decrease during a long period of time?

Ans

1. Trend ✔
2. Seasonal
3. Irregular
4. Cyclical

Question ID : **6306801352871**
Option 1 ID : **6306805325646**
Option 2 ID : **6306805325649**
Option 3 ID : **6306805325648**
Option 4 ID : **6306805325647**
Status : **Answered**
Chosen Option : **4**

Q.63 In a completely randomized design, with 4 treatments replicated 5 times, the following information is obtained.

SST=26234.95, SSE=11558.80, the F_{cal} is equal to:

Ans

1. 20
2. 12.11 ✔
3. 14.89
4. 15.6

Question ID : **6306801352858**
Option 1 ID : **6306805325597**
Option 2 ID : **6306805325594**
Option 3 ID : **6306805325595**
Option 4 ID : **6306805325596**
Status : **Answered**
Chosen Option : **3**

Q.64

Ans

1.

2.

3.

4. 1/12

Question ID : **6306801352927**
Option 1 ID : **6306805325870**
Option 2 ID : **6306805325873**
Option 3 ID : **6306805325871**
Option 4 ID : **6306805325872**
Status : **Answered**
Chosen Option : **2**

Q.65 The primary purpose of constructing index numbers is to:

Ans

✔ 1. compare relative changes in variables over time

2. assess purchasing power of money

3. calculate statistical variances

4. estimate population parameters

Question ID : **6306801352946**
Option 1 ID : **6306805325947**
Option 2 ID : **6306805325949**
Option 3 ID : **6306805325946**
Option 4 ID : **6306805325948**
Status : **Answered**
Chosen Option : **1**

Q.66 Half of the difference between the 75^{th} percentile and 25^{th} percentile is called:

Ans

1. coefficient of variation

2. coefficient of skewness

3. range

✔ 4. quartile deviation

Question ID : **6306801352821**
Option 1 ID : **6306805325448**
Option 2 ID : **6306805325449**
Option 3 ID : **6306805325446**
Option 4 ID : **6306805325447**
Status : **Answered**
Chosen Option : **4**

Q.67

Ans

1.

2.

✔ 3. tend to have heavy outliers

4. tend to have light outliers

Question ID : **6306801352837**
Option 1 ID : **6306805325512**
Option 2 ID : **6306805325513**
Option 3 ID : **6306805325510**
Option 4 ID : **6306805325511**
Status : **Answered**
Chosen Option : **3**

Q.68 Let a continuous random variable X have pdf

$$f(x) = \begin{cases} -0.75\,x^2 + 1.5x \text{ for } 0 < x < 2 \\ 0\text{ , otherwise} \end{cases}$$

The mode of X is:

Ans

1. 2
2. 1.8
3. 2.6
✔ 4. 1

Question ID : **6306801352895**
Option 1 ID : **6306805325744**
Option 2 ID : **6306805325743**
Option 3 ID : **6306805325745**
Option 4 ID : **6306805325742**
Status : **Answered**
Chosen Option : **2**

Q.69 At what value of $R_{1.23}$ are all regression residuals zero?

Ans

1. -1
✔ 2. 1
3. Both 1 and -1
4. 0

Question ID : **6306801352866**
Option 1 ID : **6306805325628**
Option 2 ID : **6306805325626**
Option 3 ID : **6306805325629**
Option 4 ID : **6306805325627**
Status : **Answered**
Chosen Option : **3**

Q.70

Ans

1.

2.

3. 100

4. 50

Question ID : **6306801352824**
Option 1 ID : **6306805325461**
Option 2 ID : **6306805325459**
Option 3 ID : **6306805325458**
Option 4 ID : **6306805325460**
Status : **Answered**
Chosen Option : **3**

Q.71 If for the given distribution, the arithmetic mean is 9.41, then which of the following values will replace the question mark (?) in the distribution?

X 5 8 9 ? 13
f 8 20 30 25 17

Ans

1. 9

✔ 2. 10

3. 11

4. 8

Question ID : **6306801292188**
Option 1 ID : **6306805112393**
Option 2 ID : **6306805112394**
Option 3 ID : **6306805112395**
Option 4 ID : **6306805112392**
Status : **Answered**
Chosen Option : **2**

Q.72 For a frequency polygon:

Ans

1. frequencies are plotted against class boundaries

2. frequencies are plotted against class limits

✔ 3. class intervals are of equal width

4. cumulative frequencies are plotted against class limits

Question ID : **6306801294086**
Option 1 ID : **6306805090498**
Option 2 ID : **6306805090496**
Option 3 ID : **6306805090495**
Option 4 ID : **6306805090497**
Status : **Answered**
Chosen Option : **2**

Q.73

Ans

1.
2.
3. 38
4. 32

Question ID : **6306801352833**
Option 1 ID : **6306805325496**
Option 2 ID : **6306805325495**
Option 3 ID : **6306805325497**
Option 4 ID : **6306805325494**
Status : **Not Answered**
Chosen Option : **--**

Q.74 Die I has 4 red and 2 white faces and die II has 2 red and 4 white faces. A coin is flipped once. If head appears, the game continues by flipping die I, and if tail appears, then die II is used. The probability of getting a red face at any throw is:

Ans

1. 1/4
2. 1/8
3.
✔ 4. 1/2

Question ID : **6306801352928**
Option 1 ID : **6306805325875**
Option 2 ID : **6306805325877**
Option 3 ID : **6306805325876**
Option 4 ID : **6306805325874**
Status : **Answered**
Chosen Option : **4**

Q.75 The mean and variance of a Binomial distribution are 8 and 4 respectively, then the value of n is:

Ans

1. 32
2. 64
3. 8
✔ 4. 16

Question ID : **6306801352806**
Option 1 ID : **6306805325386**
Option 2 ID : **6306805325388**
Option 3 ID : **6306805325389**
Option 4 ID : **6306805325387**
Status : **Answered**
Chosen Option : **4**

Q.76 Let X follows normal distribution with mean μ and median $\tilde{\mu}$, then $P(\mu < X < \tilde{\mu})$ is equal to:

Ans

1. 0.50
✔ 2. 0
3. 0.10
4. 0.25

Question ID : **6306801352812**
Option 1 ID : **6306805325410**
Option 2 ID : **6306805325413**
Option 3 ID : **6306805325412**
Option 4 ID : **6306805325411**
Status : **Answered**
Chosen Option : **1**

Q.77

Ans

1. $\sum_{j=1}^{k} (\bar{x}_j - \bar{x})$
2. $\sum_{j=1}^{k} n_j (\bar{x}_j - \bar{x})^2$
3. $\sum_{j=1}^{k} \sum_{i=1}^{n_j} (x_{ij} - \bar{x}_j)^2$ ✔
4. $\sum_{j=1}^{k} \sum_{i=1}^{n_j} (x_{ij} - \bar{x})^2$

Question ID : **6306801352935**
Option 1 ID : **6306805325902**
Option 2 ID : **6306805325903**
Option 3 ID : **6306805325905**
Option 4 ID : **6306805325904**
Status : **Answered**
Chosen Option : **4**

Q.78 If (X, Y) has a bivariate normal distribution, then X, Y are independent if and only if X, Y are:

Ans

1. $\rho(X, Y) \neq 0$
2. Uncorrelated ✔
3. Correlated
4. $\text{cov}(X, Y) \neq 0$

Question ID : **6306801324604**
Option 1 ID : **6306805212700**
Option 2 ID : **6306805212697**
Option 3 ID : **6306805212698**
Option 4 ID : **6306805212699**
Status : **Answered**
Chosen Option : **4**

Q.79

Ans

1.

2.

3. 4

✔ 4. $\frac{1}{8}$

Question ID : **6306801299443**
Option 1 ID : **6306805112620**
Option 2 ID : **6306805112618**
Option 3 ID : **6306805112621**
Option 4 ID : **6306805112619**
Status : **Answered**
Chosen Option : **4**

Q.80 **Let $X_1, X_2, \ldots, X_{10}$ be 10 independent and identically distributed (i.i.d) random variables taking the values 0, 1 with corresponding probabilities q, p. Then $X = X_1 + X_2 + \ldots + X_{10}$ is/has:**

Ans

✔ 1. a binomial variate

2. Poisson distribution

3. a normal variate

4. a geometric variate

Question ID : **6306801299862**
Option 1 ID : **6306805114282**
Option 2 ID : **6306805114280**
Option 3 ID : **6306805114279**
Option 4 ID : **6306805114281**
Status : **Answered**
Chosen Option : **2**

Q.81 In using one way analysis of variance for testing whether treatments are equally effective for a certain experimental data, if $F_{calculated} = 12.1$ and $F_{tabulated} = 3.06$, then:

Ans

✔ 1. null hypothesis is rejected

2. both null hypothesis and alternative hypothesis are accepted

3. both null hypothesis and alternative hypothesis are rejected

4. null hypothesis is accepted

Question ID : **6306801352855**
Option 1 ID : **6306805325582**
Option 2 ID : **6306805325584**
Option 3 ID : **6306805325585**
Option 4 ID : **6306805325583**
Status : **Answered**
Chosen Option : **1**

Q.82

Ans

1.

2. $\frac{7}{2^6}$

3. $\frac{1}{2^6}$

4. $\frac{7}{2^8}$

Question ID : **6306801352885**
Option 1 ID : **6306805325704**
Option 2 ID : **6306805325702**
Option 3 ID : **6306805325705**
Option 4 ID : **6306805325703**
Status : **Answered**
Chosen Option : **1**

Q.83 As the sample size increases, empirical probability:

Ans

1. becomes less accurate
2. becomes more subjective
3. decreases
4. approaches the true probability of an event ✔

Question ID : **6306801352925**
Option 1 ID : **6306805325862**
Option 2 ID : **6306805325863**
Option 3 ID : **6306805325865**
Option 4 ID : **6306805325864**
Status : **Answered**
Chosen Option : **4**

Q.84 Which of the following is NOT true about collecting data through structured interviews?

Ans

1. They involve the use of highly standardised techniques of recording.
2. The interviewer follows a rigid laid down procedure.
3. They involve the use of a set of predetermined questions.
4. The sequence of asked questions can be changed. ✔

Question ID : **6306801294132**
Option 1 ID : **6306805090694**
Option 2 ID : **6306805090695**
Option 3 ID : **6306805090693**
Option 4 ID : **6306805090696**
Status : **Answered**
Chosen Option : **2**

Q.85

Ans

1.
2.
3. Efficiency
4. ✔ Correlation

Question ID : **6306801352878**
Option 1 ID : **6306805325675**
Option 2 ID : **6306805325674**
Option 3 ID : **6306805325676**
Option 4 ID : **6306805325677**
Status : **Answered**
Chosen Option : **4**

Q.86 Suppose a sample of size 36 is drawn from a population with mean 2 and variance 25 using simple random sampling with replacement. The standard error of $\bar{x}$ is:

Ans

1. $\frac{3}{5}$
2. $\frac{5}{8}$
3. ✔ $\frac{5}{6}$
4. 1

Question ID : **6306801352955**
Option 1 ID : **6306805325984**
Option 2 ID : **6306805325982**
Option 3 ID : **6306805325983**
Option 4 ID : **6306805325985**
Status : **Answered**
Chosen Option : **3**

Q.87 'p' is the probability that a man aged x years will die in a ye

aged x, A_1 will die in a year and will be the first to die.

Ans

1. $\frac{1}{n}[(1-p)^n]$
2. ✔ $\frac{1}{n}[1-(1-p)^n]$
3. $\frac{1}{n}[(1-p)^{n-1}]$
4. $\frac{1}{n}[(1-p)]$

Question ID : **6306801292667**
Option 1 ID : **6306805084839**
Option 2 ID : **6306805084842**
Option 3 ID : **6306805084840**
Option 4 ID : **6306805084841**
Status : **Answered**
Chosen Option : **2**

Q.88 **In a one-way ANOVA, which of the following would indicate a violation of the normality assumption?**

Ans

1. Equal variances across groups
2. Residuals showing a skewed distribution
3. Residuals randomly distributed
4. Independent observations

Question ID : **6306801294764**
Option 1 ID : **6306805093391**
Option 2 ID : **6306805093390**
Option 3 ID : **6306805093389**
Option 4 ID : **6306805093392**
Status : **Answered**
Chosen Option : **1**

Q.89 **What is the main assumption of the ratio-to-moving-averages method?**

Ans

1. Seasonal effects are multiplicative.
2. Random components dominate the time series.
3. The trend is constant over time.
4. ✔ The seasonal component is additive.

Question ID : **6306801302293**
Option 1 ID : **6306805124079**
Option 2 ID : **6306805124080**
Option 3 ID : **6306805124078**
Option 4 ID : **6306805124077**
Status : **Answered**
Chosen Option : **4**

Q.90 For an experiment with sample space S, the events A_i, i = 1, 2, 3, …. are mutually exclusive and exhaustive if:

Ans

1. $\cup_i A_i = S$
2. $A_i \cap A_j = \emptyset$ for $i \neq j$
3. $\cup_i A_i = S$ and $A_i \cup A_j = \emptyset$ for $i \neq j$
4. ✔ $\cup_i A_i = S$ and $A_i \cap A_j = \emptyset$ for $i \neq j$

Question ID : **6306801352926**
Option 1 ID : **6306805325867**
Option 2 ID : **6306805325868**
Option 3 ID : **6306805325866**
Option 4 ID : **6306805325869**
Status : **Answered**
Chosen Option : **4**

Q.91

Ans

1.

2.

✔ 3. Autobiography

4. Newspaper

Question ID : **6306801352813**
Option 1 ID : **6306805325415**
Option 2 ID : **6306805325417**
Option 3 ID : **6306805325414**
Option 4 ID : **6306805325416**
Status : **Answered**
Chosen Option : **2**

Q.92 The points of inflection of a normal distribution N (5, 1) that exist at x is equal to:

Ans

1. 2, 8

2. 5, 1

3. 1, 9

✔ 4. 4, 6

Question ID : **6306801352804**
Option 1 ID : **6306805325379**
Option 2 ID : **6306805325381**
Option 3 ID : **6306805325380**
Option 4 ID : **6306805325378**
Status : **Answered**
Chosen Option : **4**

Q.93 From a population of a large number of workers with a standard deviation 5, a sample is drawn and the standard error is found to be 0.5. What is the sample size?

Ans

1. 50

2. 1000

3. 10

✔ 4. 100

Question ID : **6306801297901**
Option 1 ID : **6306805106220**
Option 2 ID : **6306805106223**
Option 3 ID : **6306805106221**
Option 4 ID : **6306805106222**
Status : **Answered**
Chosen Option : **2**

Q.94

Ans

1.

2.

3.

4.

Question ID : **6306801352818**
Option 1 ID : **6306805325436**
Option 2 ID : **6306805325437**
Option 3 ID : **6306805325435**
Option 4 ID : **6306805325434**
Status : **Answered**
Chosen Option : **2**

Q.95 If $\bar{x}$ is the mean of a sample from N(μ, 1), then the maximu

Ans

1. $n\,\bar{x}^2$
2. $\bar{x}^2 + \frac{1}{n}$
3. $\bar{x}^2 + 1$
4. ✔ $\bar{x}^2$

Question ID : **6306801300178**
Option 1 ID : **6306805115576**
Option 2 ID : **6306805115577**
Option 3 ID : **6306805115578**
Option 4 ID : **6306805115575**
Status : **Not Answered**
Chosen Option : **--**

Q.96 **Which of the following is NOT a good characteristic of a questionnaire?**

Ans

1. Questions should proceed in logical sequence from easy to more difficult.
2. Technical terms and vague expressions should be avoided.
3. ✔ Personal and intimate questions should be put in the beginning.
4. Questionnaire should be comparatively short and simple.

Question ID : **6306801294133**
Option 1 ID : **6306805090698**
Option 2 ID : **6306805090700**
Option 3 ID : **6306805090699**
Option 4 ID : **6306805090697**
Status : **Answered**
Chosen Option : **3**

Q.97 The coefficient of variation and standard deviation for a dataset are 23 and 11, then the mean is approximately equal to:

Ans

1. 23.876
2. 33.564
3. 45.825
4. ✔ 47.826

Question ID : **6306801352827**
Option 1 ID : **6306805325473**
Option 2 ID : **6306805325470**
Option 3 ID : **6306805325472**
Option 4 ID : **6306805325471**
Status : **Answered**
Chosen Option : **4**

Q.98 **Let N be the size of a population and n be the size of the sample. Then the efficiency of SRSWOR with respect to SRSWR is:**

Ans

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

Question ID : **6306801300169**
Option 1 ID : **6306805115540**
Option 2 ID : **6306805115539**
Option 3 ID : **6306805115541**
Option 4 ID : **6306805115542**
Status : **Answered**
Chosen Option : **2**

Q.99 Karl Pearson's correlation coefficient is also called:

Ans

1. ✔ Product moment correlation coefficient
2. Likelihood coefficient
3. Spearman's correlation coefficient
4. Simplex correlation coefficient

Question ID : **6306801352860**
Option 1 ID : **6306805325603**
Option 2 ID : **6306805325604**
Option 3 ID : **6306805325605**
Option 4 ID : **6306805325602**
Status : **Answered**
Chosen Option : **3**

Q.100 Usually the formula to determine the number of classes is given by:

Ans

1. $2 + 3.322 \times \log 100N$
2. $3 + 3.322 \times \log 1000\ N$
3. ✔ $1 + 3.322 \times \log 10\ N$
4. None of the above

Question ID : **6306801352841**
Option 1 ID : **6306805325527**
Option 2 ID : **6306805325528**
Option 3 ID : **6306805325526**
Option 4 ID : **6306805325529**
Status : **Answered**
Chosen Option : **2**