



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



✗ 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), $1 - R_{1,23}^2$ 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



☐ 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

- Ans ☒ 1. 0.5
☒ 2. 5
☒ 3. 10
☒ 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

Ans

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

✗ 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



- ✓ 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

- Ans
- ☐ 1. $\frac{1}{8}$
 - ☒ 2. $\frac{1}{4}$
 - ☐ 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 modal class with 25 as its frequency. Also if the frequency of the class preceding and succeeding the modal class is 10 and 15, respectively, then the value of mode is:

- Ans
- ☐ 1. 12
 - ☒ 2. 13
 - ☐ 3. 10
 - ☐ 4. 15

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

- Ans ☒ 1. Variance
☒ 2. Mean
☒ 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



- ☒ 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

- ☒ 1. mode
- ☒ 2. median
- ☒ 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

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

- 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 : --

- ✓ 1. $\frac{6}{7}$
✗ 2. $\frac{3}{7}$
✗ 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



- ☒ 2. $1 - \text{Probability of Type I Error}$
- ☒ 3. $1 - \text{Probability of Type II Error}$
- ☒ 4. $\text{Probability of Type II Error}$

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

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

- 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

Ans  1. 3.58
 2. 4.88
 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. $\frac{3}{25}$
 2. $\frac{2}{25}$
 3. $\frac{1}{25}$
 4. $\frac{5}{25}$

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

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. $(p_1 - p_2) \pm 1.96 \sqrt{\frac{p_1 q_1}{n_1} + \frac{p_2 q_2}{n_2}}$
☐ 2. $(p_1 + p_2) \pm 1.96 \sqrt{\frac{p_1 q_1}{n_1} + \frac{p_2 q_2}{n_2}}$
☐ 3. $(p_1 + p_2) \pm 1.96 \sqrt{\frac{p_1 q_1}{n_1} - \frac{p_2 q_2}{n_2}}$
☐ 4. $(p_1 - p_2) \pm 1.96 \sqrt{\frac{p_1 q_1}{n_1} - \frac{p_2 q_2}{n_2}}$

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

- ☐ 1. mutually exclusive
- ☐ 2. exhaustive
- ☐ 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

Ans

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

✗ 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

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 $\mu < \mu_0$ is two sided / two tailed.

☐ 3. The null hypothesis $H_0: \mu = \mu_0$ can be tested against the alternative $H_1: \mu$ not equal to μ_0 .

☐ 4. The hypothesis for testing $\mu > \mu_0$ 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 : --

- Ans ☒ 1. σ
☒ 2. $\mu/2$
☒ 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. $\frac{\sum p_{0j}p_{ij}}{\sum p_{0j}} \times 100$
☒ 2. $\frac{\sum p_{ij}}{\sum p_{0j}p_{ij}} \times 100$
☒ 3. $\frac{\sum p_{ij}}{\sum p_{0j}} \times 100$
☒ 4. $\frac{\sum p_{0j}}{\sum p_{ij}} \times 100$

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

- Ans ☐ 1. $n s^2 = (n - 1) S^2$
☒ 2. $(n - 1) s^2 = n S^2$
☐ 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

✓ 1. 13.2

✗ 2. 12.6

✗ 3. 15

✗ 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. 12

✓ 2. 11.25

✗ 3. 18.5

✗ 4. 15

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

- Ans ☒ 1. 6/4
☒ 2. 7/3
☒ 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

- ✗ 1. 1/3
✓ 2. 1/36
✗ 3. 1/6
✗ 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 75th percentile and 25th 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

- Ans ☒ 1. have no outliers
☒ 2. will have their distributions symmetric
☒ 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

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

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

- Ans ☒ 1. 10
☐ 2. 80
☐ 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

- Ans ☒ 1. 26
☐ 2. 34
☐ 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. 1/3
☒ 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

x_{ij} = i^{th} observation corresponding to j^{th} treatment,

$i = 1, 2, \dots, n_j, \quad j = 1, 2, \dots, k$

T = total of all observations,

$\bar{x}_j$ = mean of j^{th} treatment,

$\bar{x} = \frac{T}{N}$ where $N = \sum_{j=1}^k n_j$.

The formula for finding the sum of squares due to error (SSE) is:

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. 16
 - ☐ 2. 8
 - ☐ 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 $X_1, X_2, \dots, X_{10}$ be 10 independent and identically distributed (i.i.d) random variables taking the values 0, 1 with corresponding probabilities q, p . Then $X = X_1 + X_2 + \dots + X_{10}$ 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 $F_{\text{calculated}} = 12.1$ and $F_{\text{tabulated}} = 3.06$, 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

✗ 1. $\frac{1}{2^8}$

✓ 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. Consistency
 - ☐ 2. Unbiasedness
 - ☐ 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 year;

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

- 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 , $i = 1, 2, 3, \dots$ are mutually exclusive and exhaustive if:

- Ans ☒ 1. $\bigcup_i A_i = S$
☒ 2. $A_i \cap A_j = \emptyset$ for $i \neq j$
☒ 3. $\bigcup_i A_i = S$ and $A_i \cap A_j = \emptyset$ for $i \neq j$
☒ 4. $\bigcup_i A_i = S$ 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

- Ans ☐ 1. Biography
☐ 2. Research Journals
☒ 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

- ☒ 1. 15
- ☒ 2. 9
- ☒ 3. 12
- ☒ 4. 10

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 $N(\mu, 1)$, then the maximum

- 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

Ans

- ☒ 1. $\frac{N-1}{N(n-1)}$
- ☒ 2. $\frac{N-n}{N-1}$
- ☒ 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. $2 + 3.322 \times \log_{10} N$
- ☒ 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