Banaras Hindu University

Question Paper Name:	201 23rd May 2019 Shift 2
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Share Answer Key With Delivery Engine:	Yes
Actual Answer Key:	Yes

MSc Statistics Common

Group Number :	1
Group Id :	65898816
Group Maximum Duration :	0
Group Minimum Duration :	120
Revisit allowed for view? :	No
Revisit allowed for edit? :	No
Break time:	0
Group Marks:	360

MSc Statistics Common

Section Id :	65898816
Section Number :	1
Section type :	Online
Mandatory or Optional:	Mandatory
Number of Questions:	120
Number of Questions to be attempted:	120
Section Marks:	360
Display Number Panel:	Yes
Group All Questions:	No

Sub-Section Number:	1
Sub-Section Id:	65898816
Question Shuffling Allowed :	Yes

Question Number : 1 Question Id : 6589881661 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical Allowed Progression : Yes Number of Replay : 999 Play On Load : No Control Enable : Yes

Correct Marks : 3 Wrong Marks : 1

Question Label : Multiple Choice Question

Which one is non-frequency data ?

Options :

1. Income distribution data of India

2. Age composition data of India

3. Annual production of steel from 2000-2015

4. Distribution of marks obtained by students in maths of a class

Question Number : 2 Question Id : 6589881662 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical Allowed Progression : Yes Number of Replay : 999 Play On Load : No Control Enable : Yes

Correct Marks : 3 Wrong Marks : 1

Question Label : Multiple Choice Question

From ogive one can find out :

Options :

1. Mean

2. Mode

3. Median

4. Geometric mean

Question Number : 3 Question Id : 6589881663 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical Allowed Progression : Yes Number of Replay : 999 Play On Load : No Control Enable : Yes

Correct Marks : 3 Wrong Marks : 1

Question Label : Multiple Choice Question

Average salary of male employee in a firm was Rs. 520 per month and that of female was Rs. 420. The mean salary of all employee was Rs. 500. Then male, female ratio is :

Options :

1. 2 : 1

2. 3 : 1

3. 4 : 1

4. 3 : 2

Question Number : 4 Question Id : 6589881664 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical Allowed Progression : Yes Number of Replay : 999 Play On Load : No Control Enable : Yes

Correct Marks : 3 Wrong Marks : 1

Question Label : Multiple Choice Question

For positively skewed distribution :

Options :

1. Mean > Median > Mode

2. Mean < Median < Mode

3. Mean > Mode > Median

4. Mean < Mode < Median

Question Number : 5 Question Id : 6589881665 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical Allowed Progression : Yes Number of Replay : 999 Play On Load : No Control Enable : Yes

Correct Marks : 3 Wrong Marks : 1

Question Label : Multiple Choice Question

The mean deviation about the mean $\overline{x}$ of the variable X, (The frequency of the ith observation x_i is f_i and total frequency is N) is given by :

Options :

1. $\frac{2}{N}\left(\overline{x}\sum_{x_i>\overline{x}} f_i - \sum_{x_i>\overline{x}} f_i x_i\right)$

2. $\frac{2}{N}\left(\sum_{x_i<\overline{x}} f_i - \sum_{x_i<\overline{x}} f_i x_i\right)$

3. $\frac{2}{N}\left(\overline{x}\sum_{x_i>\overline{x}} f_i - \sum_{x_i<\overline{x}} x_i\right)$

4. $\frac{2}{N}\left(\overline{x}\sum_{x_i<\overline{x}} f_i - \sum_{x_i<\overline{x}} f_i x_i\right)$

Question Number : 6 Question Id : 6589881666 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical Allowed Progression : Yes Number of Replay : 999 Play On Load : No Control Enable : Yes

Correct Marks : 3 Wrong Marks : 1

Question Label : Multiple Choice Question

In a factory, the total cost of daily output of q tons of sugar is Rs $\left(\frac{1}{15}q^3 - 2q^2 + 25q\right)$. Then the output for minimum average cost is :

Options :

1. 10

2. 15

3. 20

4. 50

Question Number : 7 Question Id : 6589881667 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical Allowed Progression : Yes Number of Replay : 999 Play On Load : No Control Enable : Yes

Correct Marks : 3 Wrong Marks : 1

Question Label : Multiple Choice Question

Angle between two regression lines can be expressed as :

Options :

1. $\theta = \tan^{-1}\left\{\frac{1-r^2}{|r|}\left(\frac{\sigma_x\sigma_y}{\sigma_x^2+\sigma_y^2}\right)\right\}$

2. $\theta = \tan^{-1}\left\{\frac{1-r^2}{|r|}\right\}$

3. $\theta = \cot^{-1}\left\{\frac{1-r^2}{|r|}\right\}$

4. None of the three

Question Number : 8 Question Id : 6589881668 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical Allowed Progression : Yes Number of Replay : 999 Play On Load : No Control Enable : Yes

Correct Marks : 3 Wrong Marks : 1

Question Label : Multiple Choice Question

Correlation coefficient between X and Y is r, then correlation coefficient between actual value of Y and estimated value of Y from regression equation of Y on X is :

Options :

1. None of the three

2. r

3. r^2

4. $-r$

Question Number : 9 Question Id : 6589881669 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical Allowed Progression : Yes Number of Replay : 999 Play On Load : No Control Enable : Yes

Correct Marks : 3 Wrong Marks : 1

Question Label : Multiple Choice Question

If $r_{12} = 0.7$, $r_{13} = r_{23} = .5$, then $R_{1.23}$ is equal to :

Options :

1. $\sqrt{0.22}$

2. $\sqrt{0.33}$

3. $\sqrt{0.42}$

4. $\sqrt{0.52}$

Question Number : 10 Question Id : 6589881670 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical Allowed Progression : Yes Number of Replay : 999 Play On Load : No Control Enable : Yes

Correct Marks : 3 Wrong Marks : 1

Question Label : Multiple Choice Question

If the two continuous random variables X and Y have the following joint probability density function $f(x,y)=\begin{cases} xe^{-x(y+1)} & ; \ x \geq 0, y \geq 0 \\ 0 & ; \ \text{elsewhere} \end{cases}$, then the regression curve of Y on X is :

Options :

1. $Y = X$

2. $Y = X^2$

3. $Y = \frac{1}{X^2}$

4. $Y = \frac{1}{X}$

Question Number : 11 Question Id : 6589881671 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical Allowed Progression : Yes Number of Replay : 999 Play On Load : No Control Enable : Yes

Correct Marks : 3 Wrong Marks : 1

Question Label : Multiple Choice Question

Two random variables X and Y are connected by the equation $aX + bY + c = 0$, then :

Options :

1. the correlation coefficient between them is +1 is signs of a and b are alike and −1 if the signs of a and b are different.

2. the correlation coefficient between them is −1 is signs of a and b are alike and +1 if the signs of a and b are different.

3. the correlation coefficient between them is +1 if $a, b > 0$ and $c < 0$.

4. the correlation coefficient between them is −1 if $a, c > 0$ and $b < 0$.

Question Number : 12 Question Id : 6589881672 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical Allowed Progression : Yes Number of Replay : 999 Play On Load : No Control Enable : Yes

Correct Marks : 3 Wrong Marks : 1

Question Label : Multiple Choice Question

If all the pairwise correlation coefficient in three variate data is ρ, every partial correlation coefficient is :

Options :

1. $\frac{\rho}{1+\rho}$

2. $\frac{\rho^2}{1+\rho^2}$

3. $\frac{1-\rho}{\rho}$

4. ρ

Question Number : 13 Question Id : 6589881673 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical Allowed Progression : Yes Number of Replay : 999 Play On Load : No Control Enable : Yes

Correct Marks : 3 Wrong Marks : 1

Question Label : Multiple Choice Question

In usual notation, it is given that $(AB) = 256$, $(\alpha B) = 768$, $(A\beta) = 48$ and $(\alpha\beta) = 144$. Then which one of the following is true ?

Options :

1. A and B are dependent

2. A and B are independent

3. Such type of data is not possible

4. None of the three

Question Number : 14 Question Id : 6589881674 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical Allowed Progression : Yes Number of Replay : 999 Play On Load : No Control Enable : Yes

Correct Marks : 3 Wrong Marks : 1

Question Label : Multiple Choice Question

In dichotomous classification of n attributes, the total number class frequencies is :

Options :

1. $2n$

2. 2^n

3. 3^n

4. 4^n

Question Number : 15 Question Id : 6589881675 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical Allowed Progression : Yes Number of Replay : 999 Play On Load : No Control Enable : Yes

Correct Marks : 3 Wrong Marks : 1

Question Label : Multiple Choice Question

In a university examination 65% passed in English, 90% passed in Hindi and 60% passed in optional subject. Find how many at least should have passed in all the examinations :

Options :

15%

1.

20%

2.

30%

3.

10%

4.

Question Number : 16 Question Id : 6589881676 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical Allowed Progression : Yes Number of Replay : 999 Play On Load : No Control Enable : Yes

Correct Marks : 3 Wrong Marks : 1

Question Label : Multiple Choice Question

The probability that the birthdays of 6 people will fall in exactly two different calendar months is :

Options :

1. $\binom{12}{2}/12^6$

2. $\binom{12}{2}2^6/12^6$

3. $\binom{12}{2}(2^6-2)/12^6$

4. $\binom{12}{2}(2^6-6)/12^6$

Question Number : 17 Question Id : 6589881677 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical Allowed Progression : Yes Number of Replay : 999 Play On Load : No Control Enable : Yes

Correct Marks : 3 Wrong Marks : 1

Question Label : Multiple Choice Question

If it is given that $P(A \cup B) = 2/3$ and $P(A^c / B^c) = \frac{1}{2}$. Then $P(B)$ is :

Options :

1. 2/3

2. 1/2

3. 1/3

4. 3/4

Question Number : 18 Question Id : 6589881678 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical Allowed Progression : Yes Number of Replay : 999 Play On Load : No Control Enable : Yes

Correct Marks : 3 Wrong Marks : 1

Question Label : Multiple Choice Question

A four face (1, 2, 3, 4) die is tossed once. The probability of a 2 or 3 turning up is :

Options :

1. 1/2

2. 1/3

3. 1/4

4. 2/3

Question Number : 19 Question Id : 6589881679 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical Allowed Progression : Yes Number of Replay : 999 Play On Load : No Control Enable : Yes

Correct Marks : 3 Wrong Marks : 1

Question Label : Multiple Choice Question

Two cards are drawn from a well shuffled ordinary deck of 52 cards. The probability that both are kings, if the first card is not replaced, is :

Options :

1. 1/13

2. 3/51

3. 1/221

4. 1/663

Question Number : 20 Question Id : 6589881680 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical Allowed Progression : Yes Number of Replay : 999 Play On Load : No Control Enable : Yes

Correct Marks : 3 Wrong Marks : 1

Question Label : Multiple Choice Question

If A and B are two mutually exclusive events and $P(A \cup B) \neq 0$, then $P(A \mid A \cup B)$ is equal to :

Options :

1. $\frac{P(A)}{P(A \cap B)}$

2. $\frac{P(B)}{P(A \cup B)}$

3. $\frac{P(A)}{P(A)+P(B)}$

4. $\frac{P(B)}{P(A)+P(B)}$

Question Number : 21 Question Id : 6589881681 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical Allowed Progression : Yes Number of Replay : 999 Play On Load : No Control Enable : Yes

Correct Marks : 3 Wrong Marks : 1

Question Label : Multiple Choice Question

If $B_1, B_2, ..., B_k$ are mutually exclusive events such that $P(B_j) \neq 0$, $j = 1, 2, ..., k$ are known and they form a partition of the sample space. Let A be an event contained in $\bigcup_{j=1}^{k} B_j$ with $P(A) > 0$ and $P(B_j \mid A)$ is given for all j, the probability of event B_1 given A is :

Options :

1. $\frac{P(B_1)P(A \mid B_1)}{\sum_{j=1}^{k} P(B_j)P(A \mid B_j)}$

2. $\frac{P(A)P(B_1 \mid A)}{\sum_{j=1}^{k} P(B_j)P(A \mid B_j)}$

3. $\dfrac{P(A \mid B_1)}{\sum_{j=1}^{k} P(B_j)P(A \mid B_j)}$

4. $\dfrac{P(A \mid B_1)}{\sum_{j=1}^{k} P(A)P(A \mid B_j)}$

Question Number : 22 Question Id : 6589881682 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical Allowed Progression : Yes Number of Replay : 999 Play On Load : No Control Enable : Yes

Correct Marks : 3 Wrong Marks : 1

Question Label : Multiple Choice Question

A random variable X has the density function $f(x) = c/(x^2 + 1);\ -\infty < x < \infty$. The probability that X^2 lies between $1/3$ and 1 is :

Options :

1. $1/2$

2. $1/3$

3. $1/4$

4. $1/6$

Question Number : 23 Question Id : 6589881683 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical Allowed Progression : Yes Number of Replay : 999 Play On Load : No Control Enable : Yes

Correct Marks : 3 Wrong Marks : 1

Question Label : Multiple Choice Question

The probability density function of a random variable x is given by $f(x) = \begin{cases} x^2/81 & ; \ -3 < x < 6 \\ 0 & ; \ \text{otherwise} \end{cases}$. If $U = \dfrac{1}{3}(12 - x)$, then the $P(2 < U < 5)$ is :

Options :

1. $1/2$

2. $1/3$

3. 1/4

4. 1

Question Number : 24 Question Id : 6589881684 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical Allowed Progression : Yes Number of Replay : 999 Play On Load : No Control Enable : Yes

Correct Marks : 3 Wrong Marks : 1

Question Label : Multiple Choice Question

The mean distance of two points taken at random on the circumference of a circle with radius 'r' is :

Options :

1. r/π

2. $2\,r/\pi$

3. $3\,r/\pi$

4. $4\,r/\pi$

Question Number : 25 Question Id : 6589881685 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical Allowed Progression : Yes Number of Replay : 999 Play On Load : No Control Enable : Yes

Correct Marks : 3 Wrong Marks : 1

Question Label : Multiple Choice Question

Let X and Y have the joint density function :

$$f(x,y)=\begin{cases}8xye^{-(x^2+2y^2)} & ; \text{ if } x>0,\ y\geq 0\\ 0 & ; \text{ otherwise}\end{cases}$$

Then the value of $P(X^2 > Y^2)$ is :

Options :

1. 3/4

2. 2/3

3. 1/3

4. 1/2

Question Number : 26 Question Id : 6589881686 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical Allowed Progression : Yes Number of Replay : 999 Play On Load : No Control Enable : Yes

Correct Marks : 3 Wrong Marks : 1

Question Label : Multiple Choice Question

Let (X, Y) be jointly distributed with density :

$$f(x,y)=\begin{cases} e^{-y} & ; \quad 0<x<y<\infty \\ 0 & ; \quad \text{otherwise} \end{cases}$$

Consider the following :

(a) $E(Y)=2$

(b) $E(X \mid Y)=\frac{y}{2} \quad 0<y<\infty$

Which of the above is/are ***correct*** ?

Options :

1. (a) only

2. (b) only

3. Both (a) and (b)

4. Neither (a) nor (b)

Question Number : 27 Question Id : 6589881687 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical Allowed Progression : Yes Number of Replay : 999 Play On Load : No Control Enable : Yes

Correct Marks : 3 Wrong Marks : 1

Question Label : Multiple Choice Question

Let X and Y be two random variables, which one of the following is ***correct*** ?

Options :

1. $\text{Var}(X) = E[\text{Var}(X \mid Y)] + \text{Var}\,[E(X \mid Y)]$

2. $\text{Var}(X) = E[\text{Var}(Y \mid X)] + \text{Var}\,[E(Y \mid X)]$

3. $\text{Var}(X) = E[\text{Var}(X \mid Y)] - \text{Var}\,[E(X \mid Y)]$

4. $\text{Var}(X) = E[\text{Var}(X \mid Y)]$

Question Number : 28 Question Id : 6589881688 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical Allowed Progression : Yes Number of Replay : 999 Play On Load : No Control Enable : Yes

Correct Marks : 3 Wrong Marks : 1

Question Label : Multiple Choice Question

A random variable X has the probability density function $f(x)=\alpha x e^{-\beta^2 x^2};\ x>0$, $\alpha>0, \beta>0$. If $E(X)=\sqrt{\pi}/2$, then α and β, respectively are :

Options :

1. 1 and 2

2. 2 and 1

3. 1 and π

4. π and 1

Question Number : 29 Question Id : 6589881689 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical Allowed Progression : Yes Number of Replay : 999 Play On Load : No Control Enable : Yes

Correct Marks : 3 Wrong Marks : 1

Question Label : Multiple Choice Question

Let $X_1, X_2, ..., X_{100}$ be i.i.d. U(–0.5, 0.5) random variables and let $T = X_1 + X_2 + ... + X_{100}$. Then $P(T^2 \geq 25)$ is :

Options :

1. 1/2

2. 1/3

3. 1/4

4. 2/3

Question Number : 30 Question Id : 6589881690 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical Allowed Progression : Yes Number of Replay : 999 Play On Load : No Control Enable : Yes

Correct Marks : 3 Wrong Marks : 1

Question Label : Multiple Choice Question

Let X and Y be i.i.d. U(0, 1) random variables. Then the value of $P\left(\frac{1}{4} \leq X^2 + Y^2 \leq 1\right)$ is :

Options :

1. $3\pi/16$

2. $5\pi/16$

3. $7\pi/16$

4. $9\pi/16$

Question Number : 31 Question Id : 6589881691 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical Allowed Progression : Yes Number of Replay : 999 Play On Load : No Control Enable : Yes

Correct Marks : 3 Wrong Marks : 1

Question Label : Multiple Choice Question

If two independent variate x_1 and x_2 have Poisson distribution with means m_1 and m_2 respectively then the moment generating function of $x_1 + x_2$ is :

Options :

1. $e^{m_1 m_2 (e^t - 1)}$

2. $e^{\frac{m_1}{m_2}(e^t - 1)}$

3. $e^{(m_1 + m_2)(e^t - 1)}$

4. $e^{(m_1 - m_2)(e^t - 1)}$

Question Number : 32 Question Id : 6589881692 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical Allowed Progression : Yes Number of Replay : 999 Play On Load : No Control Enable : Yes

Correct Marks : 3 Wrong Marks : 1

Question Label : Multiple Choice Question

If t is a positive and real, then mean of the given probability mass function $P(x) = e^{-t}(1 - e^{-t})^{x-1}; x = 1,2,3,.....$ is :

Options :

1. e^t

2. e^{-t}

3. $1 - e^t$

4. $1-e^{-t}$

Question Number : 33 Question Id : 6589881693 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical Allowed Progression : Yes Number of Replay : 999 Play On Load : No Control Enable : Yes

Correct Marks : 3 Wrong Marks : 1

Question Label : Multiple Choice Question

Which one of the following statements is *correct* ?

Options :

1. The sum of two independent Bernoulli random variables is Bernoulli random variable.

2. The sum of any two independent binomial random variables is always binomial random variable.

3. The sum of two independent and identical Bernoulli random variables is binomial random variable.

4. The sum of two independent binomial random variables is negative binomial random variable.

Question Number : 34 Question Id : 6589881694 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical Allowed Progression : Yes Number of Replay : 999 Play On Load : No Control Enable : Yes

Correct Marks : 3 Wrong Marks : 1

Question Label : Multiple Choice Question

If X follows normal distribution with mean 2 and variance 25, then the distribution of $Y=\frac{1}{2}\left(\frac{X-2}{5}\right)^2$ is :

Options :

1. Exponential with mean 4

2. Chi-square with 2 degrees of freedom

3. Gamma distribution with parameter $\frac{1}{2}$

4. Normal Distribution

Question Number : 35 Question Id : 6589881695 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical Allowed Progression : Yes Number of Replay : 999 Play On Load : No Control Enable : Yes

Correct Marks : 3 Wrong Marks : 1

Question Label : Multiple Choice Question

For a random variable X, $P[X = 0\ ] = 1 - \frac{1}{k^2}$ and $P[X = +1] = P[X = -1] = \frac{1}{2k^2}$ where k is a constant greater than 1 and σ^2 is $E(x^2)$. Then which of the following is *correct* ?

Options :

1. $P[|X| \geq k\,\sigma] < \frac{1}{k^2}$

2. $P[|X| \geq k\,\sigma] > 1 + \frac{1}{k^2}$

3. $P[|X| \geq k\,\sigma] = \frac{1}{k^2}$

4. $P[|X - 1| \geq k\,\sigma] = \frac{1}{k^2}$

Question Number : 36 Question Id : 6589881696 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical Allowed Progression : Yes Number of Replay : 999 Play On Load : No Control Enable : Yes

Correct Marks : 3 Wrong Marks : 1

Question Label : Multiple Choice Question

If s^2 is the sampling variance in random sample drawn from a normal population with mean μ and variance σ^2, then the distribution of $\frac{1}{2}ns^2/\sigma^2$ is gamma variate with parameter :

Options :

1. $2n$

2. $n/2$

3. $2(n-1)$

4. $(n-1)/2$

Question Number : 37 Question Id : 6589881697 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical Allowed Progression : Yes Number of Replay : 999 Play On Load : No Control Enable : Yes

Correct Marks : 3 Wrong Marks : 1

Question Label : Multiple Choice Question

μ_r and m_r denote the rth central moment for the population and sample. If n is the size of the sample, then $E(m_2)$ is :

Options :

1. μ_2

2. μ_2 / n

3. $\left(1-\frac{1}{n}\right)\mu_2$

4. $\left(1+\frac{1}{n}\right)\mu_2$

Question Number : 38 Question Id : 6589881698 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical Allowed Progression : Yes Number of Replay : 999 Play On Load : No Control Enable : Yes

Correct Marks : 3 Wrong Marks : 1

Question Label : Multiple Choice Question

The coefficient of Kurtosis for the t-distribution with 7 degree of freedom is :

Options :

1. 0

2. 1/2

3. 1

4. 2

Question Number : 39 Question Id : 6589881699 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical Allowed Progression : Yes Number of Replay : 999 Play On Load : No Control Enable : Yes

Correct Marks : 3 Wrong Marks : 1

Question Label : Multiple Choice Question

Let $X_1, X_2, ...X_n$ be a random sample from Normal Distribution with mean μ and variance σ^2. Define $\overline{X} = \frac{1}{n}\sum_{i=1}^{n} X_i, S^2 = \frac{1}{n-1}\sum_{i=1}^{n}(X_i - \overline{X})^2$. Consider the following statements :

(a) $\overline{X}$ and S^2 are independent (b) S^2 is a biased estimator of σ^2

Which one of the following is true ?

Options :

1. (a) only

2. (b) only

3. Both (a) and (b)

4. Neither (a) nor (b)

Question Number : 40 Question Id : 6589881700 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical Allowed Progression : Yes Number of Replay : 999 Play On Load : No Control Enable : Yes

Correct Marks : 3 Wrong Marks : 1

Question Label : Multiple Choice Question

Suppose $X_1, X_2, ..., X_n$ are independent standard normal random variables and $S_n = \sum_{i=1}^{n} X_i^2$. Which one of the following is *correct* ?

Options :

1. The distribution of S_n is F.

2. The distribution of S_n is χ_n^2.

3. The distribution of S_n is $N(0, n)$.

4. The distribution of S_n is t_{n-1}.

Question Number : 41 Question Id : 6589881701 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical Allowed Progression : Yes Number of Replay : 999 Play On Load : No Control Enable : Yes

Correct Marks : 3 Wrong Marks : 1

Question Label : Multiple Choice Question

In testing of null hypothesis H_0 against alternative hypothesis H_A on the basis of the critical region W, which of the following is defined as power of the test ?

Options :

1. Probability of the sample point lying in the critical region when H_0 is true.

2. Probability of the sample point not lying in the critical region when H_0 is true.

3. Probability of the sample point lying in the critical region when H_A is true.

4. Probability of the sample point not lying in the critical region when H_A is true.

Question Number : 42 Question Id : 6589881702 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical Allowed Progression : Yes Number of Replay : 999 Play On Load : No Control Enable : Yes

Correct Marks : 3 Wrong Marks : 1

Question Label : Multiple Choice Question

A coin is tossed 4 times and 'p' is the probability of getting head in a single trial. Let S be the number of heads obtained. It is decided to test $H_0 : p = \frac{1}{2}$ against $H_1 : p \neq \frac{1}{2}$, using the decision rule : Reject H_0 is S is 0 or 4. The probabilities of Type I error (α) and Type II error (β) when p = 3/4, are :

Options :

1. $\alpha = \frac{1}{4}, \beta = \frac{87}{128}$

2. $\alpha = \frac{1}{8}, \beta = \frac{87}{128}$

3. $\alpha = \frac{1}{8}, \beta = \frac{41}{256}$

4. $\alpha = \frac{1}{4}, \beta = \frac{41}{256}$

Question Number : 43 Question Id : 6589881703 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical Allowed Progression : Yes Number of Replay : 999 Play On Load : No Control Enable : Yes

Correct Marks : 3 Wrong Marks : 1

Question Label : Multiple Choice Question

Let $X_1, X_2, \ldots X_n$ be a random sample from an exponential distribution with mean $1/\lambda$. The maximum likelihood estimator of the median of the distribution is :

Options :

1. $\frac{\overline{X}}{(\ln 2)}$

2. $\overline{X}(\ln 2)$

3. $\frac{(\ln 2)}{\overline{X}}$

4. $\ln(2\overline{X})$

Question Number : 44 Question Id : 6589881704 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical Allowed Progression : Yes Number of Replay : 999 Play On Load : No Control Enable : Yes

Correct Marks : 3 Wrong Marks : 1

Question Label : Multiple Choice Question

Let X be single observation from probability density function $f(x/\theta) = (\theta+1)x^{\theta}$; $0 < x < 1$ where $\theta \in \{1, 2\}$ is unknown. The power of most powerful test of size $\alpha = \frac{13}{49}$ for testing $H_0 : \theta = 1$ against $H_1 : \theta = 2$:

Options :

1. $\frac{36}{49}$

2. $\frac{216}{343}$

3. $\frac{133}{343}$

4. $\frac{13}{49}$

Question Number : 45 Question Id : 6589881705 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical Allowed Progression : Yes Number of Replay : 999 Play On Load : No Control Enable : Yes

Correct Marks : 3 Wrong Marks : 1

Question Label : Multiple Choice Question

If $X \sim$ Bernoulli $(1, \theta)$ and $T = X_1 + X_2 + ... + X_n$, then an unbiased estimator of θ^2 is :

Options :

1. $\frac{T(T+1)}{n(n+1)}$

2. $\frac{T(T+1)}{n(n-1)}$

3. $\frac{T(T-1)}{n(n+1)}$

4. $\frac{T(T-1)}{n(n-1)}$

Question Number : 46 Question Id : 6589881706 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical Allowed Progression : Yes Number of Replay : 999 Play On Load : No Control Enable : Yes

Correct Marks : 3 Wrong Marks : 1

Question Label : Multiple Choice Question

Let X be random variable with probability density function :

$$f(x) = \begin{cases} 2\theta x + 1 - \theta & , \text{ if } 0 < x < 1, -1 \le \theta \le 1 \\ 0 & , \text{ otherwise} \end{cases}$$

Based on sample of size one, the most powerful critical region (rejection region) for testing $H_0 : \theta = 0$ against $H_1 : \theta = 1$ at level $\alpha = 0.2$ is given by :

Options :

1. $X < 4/5$

2. $X \le 2/5$

3. $X > 8/5$

4. $X > 4/5$

Question Number : 47 Question Id : 6589881707 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical Allowed Progression : Yes Number of Replay : 999 Play On Load : No Control Enable : Yes

Correct Marks : 3 Wrong Marks : 1

Question Label : Multiple Choice Question

Consider the testing problem for $N(\sigma, 1)$:

$P_1 : H_0 : \sigma = \sigma_0$ vs. $H_1 : \sigma > \sigma_0$ $\quad\quad$ $P_2 : H_0 : \sigma = \sigma_0$ vs. $H_1 : \sigma \neq \sigma_0$

The UMP level α test exists :

Options :

1. For P_2 but not for P_1

2. For P_1 but not for P_2

3. For both P_1 and P_2

4. Neither for P_1 not for P_2

Question Number : 48 Question Id : 6589881708 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical Allowed Progression : Yes Number of Replay : 999 Play On Load : No Control Enable : Yes

Correct Marks : 3 Wrong Marks : 1

Question Label : Multiple Choice Question

Let X_1, X_2, X_3 be i. i. d. $N(0, \theta^2)$ random variable $\theta > 0$. Then the value of K for which the estimate $\left(K\sum_1^3 | X_i |\right)$ is an unbiased estimator of θ is :

Options :

1. $\sqrt{\frac{\pi}{18}}$

2. $\frac{1}{3\pi}$

3. $\sqrt{\frac{2}{9\pi}}$

4. $\frac{2}{3\pi}$

Question Number : 49 Question Id : 6589881709 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical Allowed Progression : Yes Number of Replay : 999 Play On Load : No Control Enable : Yes

Correct Marks : 3 Wrong Marks : 1

Question Label : Multiple Choice Question

Based on a single observation X drawn from Bernoulli population with parameter 'p' :

Options :

1. no unbiased estimator of p^2 exist

2. $X(X-1)$ is unbiased estimator of p^2

3. X^2 is unbiased estimator of p^2

4. $X(X-1)$ is unbiased estimator of $p\,(p-1)$

Question Number : 50 Question Id : 6589881710 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical Allowed Progression : Yes Number of Replay : 999 Play On Load : No Control Enable : Yes

Correct Marks : 3 Wrong Marks : 1

Question Label : Multiple Choice Question

In testing the following hypothesis, in which case we **cannot** use F-test, even when we assume that the data is drawn from the normal population(s) (notations carry their usual meaning).

Options :

1. $H_0 : \sigma_1^2 = \sigma_1^2$ against $H_1 : \sigma^2 \neq \sigma_1^2$

2. $H_0 : \sigma_1^2 = 25$ against $H_1 : \sigma_1^2 \neq 25$

3. H_0: $\rho = 0$ against H_1: $\rho > 0$

4. $H_0 : \mu_1 = \mu_2 = ... = \mu_k$ against $H_1 : \mu_i \neq \mu_j$ forsome $i \neq j$

Question Number : 51 Question Id : 6589881711 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical Allowed Progression : Yes Number of Replay : 999 Play On Load : No Control Enable : Yes

Correct Marks : 3 Wrong Marks : 1

Question Label : Multiple Choice Question

$X_1, X_2, \ldots\ldots, X_n$ is a random sample from a normal distribution N(μ ,1). An unbiased estimator of μ^2 is :

Options :

1. $\frac{1}{n}\sum_{i=1}^{n} X_i^2$

2. $\frac{1}{n}\sum_{i=1}^{n} (X_i + 1)^2$

3. $\frac{1}{n}\sum_{i=1}^{n} (X_i - 1)^2$

4. $\frac{1}{n}\sum_{i=1}^{n} (X_i + 1)(X_i - 1)$

Question Number : 52 Question Id : 6589881712 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical Allowed Progression : Yes Number of Replay : 999 Play On Load : No Control Enable : Yes

Correct Marks : 3 Wrong Marks : 1

Question Label : Multiple Choice Question

The minimum variance bound unbiased estimator (MVBUE) of the parameter θ^2 based on a random sample of size 'n' from N(0, θ^2) is :

Options :

1. $\frac{n}{\sum_{i=1}^{n} x_i^2}$

2. $\frac{\sum_{i=1}^{n} x_i^2}{n}$

3. $\frac{\left(\sum_{i=1}^{n} x_i\right)^2}{n}$

4. $\frac{\sum_{i=1}^{n} x_i^2}{n^2}$

Question Number : 53 Question Id : 6589881713 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical Allowed Progression : Yes Number of Replay : 999 Play On Load : No Control Enable : Yes

Correct Marks : 3 Wrong Marks : 1

Question Label : Multiple Choice Question

Efficiency of sample mean as compared to median as an estimate of the mean of a normal population is :

Options :

1. 64%

2. 157%

3. 317%

4. 31.5%

Question Number : 54 Question Id : 6589881714 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical Allowed Progression : Yes Number of Replay : 999 Play On Load : No Control Enable : Yes

Correct Marks : 3 Wrong Marks : 1

Question Label : Multiple Choice Question

Let the random variable $X \sim U(5, 5 + \mu)$. Based on a random sample of size 1, say X_1, the unbiased estimator of μ^2 is :

Options :

1. $3(X_1 - 5)^2$

2. $\frac{X_1^2 - 5}{12}$

3. $3(X_1 + 5)^2$

4. $\frac{X_1^2+5}{12}$

Question Number : 55 Question Id : 6589881715 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical Allowed Progression : Yes Number of Replay : 999 Play On Load : No Control Enable : Yes

Correct Marks : 3 Wrong Marks : 1

Question Label : Multiple Choice Question

Let X_1, X_2, X_3 be independent random variables with X_k (k = 1, 2, 3) having the probability density function $f_k(x)=\begin{cases} k\theta e^{-k\theta x}, & \text{if } x>0 \\ 0 & \text{otherwise} \end{cases}$, where $\theta > 0$. Then a sufficient statistic for θ is :

Options :

1. $X_1+X_2+X_3$

2. $3X_1+2X_2+X_3$

3. $X_1+X_2+3X_3$

4. $X_1+2X_2+3X_3$

Question Number : 56 Question Id : 6589881716 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical Allowed Progression : Yes Number of Replay : 999 Play On Load : No Control Enable : Yes

Correct Marks : 3 Wrong Marks : 1

Question Label : Multiple Choice Question

A sample of size one is taken from a density $f(x;\theta)=\frac{2(\theta-x)}{\theta^2}; 0<x<\theta$ and $\theta > 0$ and it is desired to test $H_0:\theta=\theta_0$ against $H_1:\theta\neq\theta_0$. The Likelihood ratio test statistics $\lambda(x)$ is given by :

Options :

1. $\frac{4x(\theta_0-x)}{\theta_0^2}$

2. $\frac{4(\theta_0 - x)}{\theta_0^2}$

3. $\frac{x(\theta_0 - x)}{\theta_0^2}$

4. $\frac{4x(\theta_0 - x)}{\theta_0}$

Question Number : 57 Question Id : 6589881717 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical Allowed Progression : Yes Number of Replay : 999 Play On Load : No Control Enable : Yes

Correct Marks : 3 Wrong Marks : 1

Question Label : Multiple Choice Question

For the testing $\mu = \mu_0$ against $\mu \neq \mu_0$ in sampling from $N(\mu, \sigma^2)$ distribution, where both μ and σ^2 are unknown. The likelihood ratio test is equivalent to :

Options :

1. Uniformly most powerful test

2. Uniformly most powerful similar test

3. Uniformly most powerful invariant test

4. Uniformly most powerful unbiased test

Question Number : 58 Question Id : 6589881718 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical Allowed Progression : Yes Number of Replay : 999 Play On Load : No Control Enable : Yes

Correct Marks : 3 Wrong Marks : 1

Question Label : Multiple Choice Question

Consider $X_1, X_2, \ldots, X_n$ random sample of size 'n' from N(μ, 16) population. If a 95% confidence interval for 'μ' is $[\bar{x} - 0.98, \bar{x} + 0.98]$, then the value of '$n$' is :

Options :

1. 4

2. 16

3. 32

4. 64

Question Number : 59 Question Id : 6589881719 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical Allowed Progression : Yes Number of Replay : 999 Play On Load : No Control Enable : Yes

Correct Marks : 3 Wrong Marks : 1

Question Label : Multiple Choice Question

You conduct a hypothesis test and obtain a value for the sample mean and sample standard deviation when $n = 25$ that do not lead to the rejection of H_0 because p-value is 0.0667. What will happen to the p-value if you observe the same sample mean and standard deviation for a sample of size greater than 25 ?

Options :

1. Increase

2. Decrease

3. remains same

4. May either increase or decrease

Question Number : 60 Question Id : 6589881720 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical Allowed Progression : Yes Number of Replay : 999 Play On Load : No Control Enable : Yes

Correct Marks : 3 Wrong Marks : 1

Question Label : Multiple Choice Question

$X_1, X_2, \ldots\ldots, X_n$ is a random sample from Bernoulli population with parameter θ and $\overline{X}$ is sample mean. Which of the following is *incorrect* ?

Options :

1. $\overline{X}(1-\overline{X})$ is consistent estimator of $p(1-p)$

2. $\overline{X}(1-\overline{X})$ is unbiased estimator of $p(1-p)$

3. $\overline{X}$ is consistent estimator of p

4. $\overline{X}$ is unbiased estimator of p

Question Number : 61 Question Id : 6589881721 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical Allowed Progression : Yes Number of Replay : 999 Play On Load : No Control Enable : Yes

Correct Marks : 3 Wrong Marks : 1

Question Label : Multiple Choice Question

Which one of the following relationship represents the Neyman's allocation ?

Options :

1. $n_i \alpha N_i$

2. $n_i \alpha N_i S_i$

3. $n_i \alpha \frac{N_i S_i}{\sqrt{c_i}}$

4. None of the three

Question Number : 62 Question Id : 6589881722 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical Allowed Progression : Yes Number of Replay : 999 Play On Load : No Control Enable : Yes

Correct Marks : 3 Wrong Marks : 1

Question Label : Multiple Choice Question

Which of the following is true for simple random sampling without replacement ?

Options :

1. Sample mean is an unbiased estimator of population mean

2. $\frac{1}{n-1}\sum(y_i - \overline{y})^2$ is an unbiased estimator of $\frac{1}{N-1}\sum(Y_i - \overline{Y})^2$

3. Possible number of samples is $\binom{N}{n}$

4. All of the three

Question Number : 63 Question Id : 6589881723 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical Allowed Progression : Yes Number of Replay : 999 Play On Load : No Control Enable : Yes

Correct Marks : 3 Wrong Marks : 1

Question Label : Multiple Choice Question

In case of skewed population, appropriate sampling strategy is :

Options :

1. simple random sampling

2. cluster sampling

3. Quota sampling

4. stratified random sampling

Question Number : 64 Question Id : 6589881724 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical Allowed Progression : Yes Number of Replay : 999 Play On Load : No Control Enable : Yes

Correct Marks : 3 Wrong Marks : 1

Question Label : Multiple Choice Question

The ratio estimator is best linear unbiased estimator of $\overline{y}$ when :

Options :

1. $y_i = \beta x_i + e_i$

2. $y_i = \alpha + \beta x_i + e_i$

3. $y_i = \alpha + \beta x_i + \gamma x_i^2 + e_i$

4. $y_i = \sqrt{\beta} x_i + e_i$

Question Number : 65 Question Id : 6589881725 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical Allowed Progression : Yes Number of Replay : 999 Play On Load : No Control Enable : Yes

Correct Marks : 3 Wrong Marks : 1

Question Label : Multiple Choice Question

The data collected by complete enumeration method are free from :

Options :

1. sampling error

2. non-sampling error

3. response error

4. measurement error

Question Number : 66 Question Id : 6589881726 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical Allowed Progression : Yes Number of Replay : 999 Play On Load : No Control Enable : Yes

Correct Marks : 3 Wrong Marks : 1

Question Label : Multiple Choice Question

The formula of standard error of sample mean based on sample size n drawn from population of size N using simple random sampling without replacement is :

Options :

1. $\sqrt{\left(\frac{1}{n}-\frac{1}{N}\right)}\,s^2$ where s^2 is sample mean square

2. $\sqrt{\left(\frac{1}{n}-\frac{1}{N}\right)}\,\sigma$ where σ^2 is population variance

3. $\sqrt{\left(\frac{1}{n}-\frac{1}{N}\right)}\,S$ where S^2 is population mean square

4. None of the three

Question Number : 67 Question Id : 6589881727 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical Allowed Progression : Yes Number of Replay : 999 Play On Load : No Control Enable : Yes

Correct Marks : 3 Wrong Marks : 1

Question Label : Multiple Choice Question

In sampling nM units from the population of NM units using simple random sampling without replacement, the variance of the sample mean, $\text{var}(\bar{y}_{SRS})$ is :

where $S^2=\frac{1}{(NM-1)}\sum_{i=j}^{N}\sum_{j=i}^{M}\left(Y_{ij}-\bar{Y}\right)^2$ and $\bar{Y}$ is population mean

Options :

1. $\left(\frac{1}{nM}-\frac{1}{NM}\right)S^2$

2. $\left(\frac{1}{nM}+\frac{1}{NM}\right)S^2$

3. $\frac{1}{nM}S^2$

4. $\frac{S^2}{NM}$

Question Number : 68 Question Id : 6589881728 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical Allowed Progression : Yes Number of Replay : 999 Play On Load : No Control Enable : Yes

Correct Marks : 3 Wrong Marks : 1

Question Label : Multiple Choice Question

Let y be the variable of interest and x be an axillary variable, then the ratio estimator $\overline{y}_R$ will be superior than the ordinary estimator (SRS estimator) $\overline{y}$ where P is the correlation coefficient between y and x in the population, if :

Options :

1. $2P > RS_x/S_y$

2. $2P < -RS_x/S_y$

3. $2P \geq -RS_x/S_y$

4. $2P \leq RS_x/S_y$

Question Number : 69 Question Id : 6589881729 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical Allowed Progression : Yes Number of Replay : 999 Play On Load : No Control Enable : Yes

Correct Marks : 3 Wrong Marks : 1

Question Label : Multiple Choice Question

In the usual notation, which of the following holds

Options :

1. $\text{Var}_{SRS} \geq \text{Var}_{PROP} \geq \text{Var}_{OPT}$

2. $\text{Var}_{OPT} \geq \text{Var}_{PROP} \geq \text{Var}_{SRS}$

3. $\text{Var}_{SRS} \geq \text{Var}_{OPT} \geq \text{Var}_{PROP}$

4. $Var_{PROP} \geq Var_{SRS} \geq Var_{OPT}$

Question Number : 70 Question Id : 6589881730 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical Allowed Progression : Yes Number of Replay : 999 Play On Load : No Control Enable : Yes

Correct Marks : 3 Wrong Marks : 1

Question Label : Multiple Choice Question

Which factor is responsible for large size of sample ?

Options :

1. Heterogeneity of sampling units

2. High precision of the estimate

3. Both Heterogeneity of sampling units and High precision of the estimate

4. Neither Heterogeneity of sampling units nor High precision of the estimate

Question Number : 71 Question Id : 6589881731 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical Allowed Progression : Yes Number of Replay : 999 Play On Load : No Control Enable : Yes

Correct Marks : 3 Wrong Marks : 1

Question Label : Multiple Choice Question

Suppose an experiment is replicated r times then precision can be given by :

Options :

1. r/σ^2

2. r/σ

3. σ^2/r

4. σ/r

Question Number : 72 Question Id : 6589881732 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical Allowed Progression : Yes Number of Replay : 999 Play On Load : No Control Enable : Yes

Correct Marks : 3 Wrong Marks : 1

Question Label : Multiple Choice Question

For 2×2, 3×3 and 4×4 L. S. D. the numbers of standard latin squares are :

Options :

1. 1, 2 and 3 respectively

2. 2, 2 and 4 respectively

3. 2, 3 and 4 respectively

4. 1, 1 and 4 respectively

Question Number : 73 Question Id : 6589881733 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical Allowed Progression : Yes Number of Replay : 999 Play On Load : No Control Enable : Yes

Correct Marks : 3 Wrong Marks : 1

Question Label : Multiple Choice Question

The test statistic used in ANOVA is :

Options :

1. t

2. F

3. χ^2 (chi-square)

4. Z

Question Number : 74 Question Id : 6589881734 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical Allowed Progression : Yes Number of Replay : 999 Play On Load : No Control Enable : Yes

Correct Marks : 3 Wrong Marks : 1

Question Label : Multiple Choice Question

The term $\sum_i \sum_j (y_{ij} - \bar{y}_{i\cdot})^2$ in one-way ANOVA is called :

(where symbols have their usual meaning)

Options :

1. Variance

2. Total sum of squares

Sum of squares due to treatments

3.

Error sum of squares

4.

Question Number : 75 Question Id : 6589881735 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical Allowed Progression : Yes Number of Replay : 999 Play On Load : No Control Enable : Yes

Correct Marks : 3 Wrong Marks : 1

Question Label : Multiple Choice Question

In two-way classification (one observation per cell), the assumption for the linear model $y_{ij} = \mu + \alpha_i + \beta_j + \gamma_{ij} + \epsilon_{ij}$ where α_i is the effect due to ith factor, β_j is the effect due to jth factor, and γ_{ij} is the interaction effect, is :

Options :

1. $\alpha_i = 0$

2. $\beta_j = 0$

3. $\gamma_{ij} = 0$

4. $\gamma_{ij} = 1$

Question Number : 76 Question Id : 6589881736 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical Allowed Progression : Yes Number of Replay : 999 Play On Load : No Control Enable : Yes

Correct Marks : 3 Wrong Marks : 1

Question Label : Multiple Choice Question

The degrees of freedom associated with error sum of squares in two-way classification (with one observation per cell) is :

Options :

1. $n-1$

2. $k-1$

3. $(n-1)(k-1)$

4. $nk-1$

Question Number : 77 Question Id : 6589881737 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical Allowed Progression : Yes Number of Replay : 999 Play On Load : No Control Enable : Yes

Correct Marks : 3 Wrong Marks : 1

Question Label : Multiple Choice Question

The process of reducing the experimental error by dividing the relatively heterogeneous experimental area into homogeneous blocks is known as :

Options :

1. Error

2. Replication

3. Randomization

4. Local control

Question Number : 78 Question Id : 6589881738 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical Allowed Progression : Yes Number of Replay : 999 Play On Load : No Control Enable : Yes

Correct Marks : 3 Wrong Marks : 1

Question Label : Multiple Choice Question

The standard error of the difference between any two treatment means of an RBD with 5 treatments and 3 blocks is :

(where symbols have their usual meaning)

Options :

1. $\left(3s_e^2/5\right)^{\frac{1}{2}}$

2. $\left(3s_e^2/2\right)^{\frac{1}{2}}$

3. $\left(5s_e^2/3\right)^{\frac{1}{2}}$

4. $\left(2s_e^2/3\right)^{\frac{1}{2}}$

Question Number : 79 Question Id : 6589881739 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical Allowed Progression : Yes Number of Replay : 999 Play On Load : No Control Enable : Yes

Correct Marks : 3 Wrong Marks : 1

Question Label : Multiple Choice Question

For constants $c_1, c_2, ..., c_k$ and treatment effects $t_1, t_2, ..., t_k$ the treatment combination $c_1t_1 + c_2t_2 + ... + c_kt_k$ is said to be contrast, if :

Options :

1. $\sum_{i=1}^{k} t_i = 0$

2. $\sum_{i=1}^{k} c_i = 0$

3. $\sum_{i=1}^{k} c_i \, . \, t_i = 0$

4. Either $\sum_{i=1}^{k} t_i = 0$ or $\sum_{i=1}^{k} c_i = 0$

Question Number : 80 Question Id : 6589881740 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical Allowed Progression : Yes Number of Replay : 999 Play On Load : No Control Enable : Yes

Correct Marks : 3 Wrong Marks : 1

Question Label : Multiple Choice Question

The total number of factorial effects in a 2^3 factorial experiment is :

Options :

1. 8

2. 4

3. 7

4. 9

Question Number : 81 Question Id : 6589881741 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical Allowed Progression : Yes Number of Replay : 999 Play On Load : No Control Enable : Yes

Correct Marks : 3 Wrong Marks : 1

Question Label : Multiple Choice Question

Which of the following is the national level system that provide national as well as state level reliable estimate of fertility and mortality ?

Options :

1. Civil registration system

2. Census

3. Ad-hoc survey

4. Sample registration system

Question Number : 82 Question Id : 6589881742 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical Allowed Progression : Yes Number of Replay : 999 Play On Load : No Control Enable : Yes

Correct Marks : 3 Wrong Marks : 1

Question Label : Multiple Choice Question

Which of the following is used by demographers as an indicator of the quality of a population's healthcare and standard of living ?

Options :

1. Age specific death rate

2. Age specific birth rate

3. Crude death rate

4. Infant mortality rate

Question Number : 83 Question Id : 6589881743 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical Allowed Progression : Yes Number of Replay : 999 Play On Load : No Control Enable : Yes

Correct Marks : 3 Wrong Marks : 1

Question Label : Multiple Choice Question

Which of the following is ***not*** a method of construction of abridged life table ?

Options :

1. Reed Merrel Method

2. King's Method

3. Graville's Method

4. Gompertz Method

Question Number : 84 Question Id : 6589881744 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical Allowed Progression : Yes Number of Replay : 999 Play On Load : No Control Enable : Yes

Correct Marks : 3 Wrong Marks : 1

Question Label : Multiple Choice Question

The probability of dying of a person between the age x and $x + n$ can be estimated by : (where symbols have their usual meaning)

Options :

1. $l_{x_n} q_n$

2. T_x / l_x

3. $\frac{l_{x+1}}{l_x}$

4. $1 - \frac{l_{x+n}}{l_x}$

Question Number : 85 Question Id : 6589881745 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical Allowed Progression : Yes Number of Replay : 999 Play On Load : No Control Enable : Yes

Correct Marks : 3 Wrong Marks : 1

Question Label : Multiple Choice Question

The relationship between central mortality rate (m_x) and force of mortality (μ_x) is :

Options :

1. $m_x = \mu_x + \frac{1}{2}$

2. $m_x = \frac{\mu_x}{1 - \mu_x}$

3. $\mu_x = \frac{2 - m_x}{m_x}$

4. $m_x = \frac{2\mu_x}{2 + \mu_x}$

Question Number : 86 Question Id : 6589881746 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical Allowed Progression : Yes Number of Replay : 999 Play On Load : No Control Enable : Yes

Correct Marks : 3 Wrong Marks : 1

Question Label : Multiple Choice Question

The first census in India was held in :

Options :

1. 1827

2. 1872

3. 1892

4. 1897

Question Number : 87 Question Id : 6589881747 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical Allowed Progression : Yes Number of Replay : 999 Play On Load : No Control Enable : Yes

Correct Marks : 3 Wrong Marks : 1

Question Label : Multiple Choice Question

Which one of the following index is used to measure the extent of preference for the age ending with digits 0 and 5 ?

Options :

1. Myer's index

2. Whipple's index

3. UN age sex accuracy index

4. Pearl's index

Question Number : 88 Question Id : 6589881748 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical Allowed Progression : Yes Number of Replay : 999 Play On Load : No Control Enable : Yes

Correct Marks : 3 Wrong Marks : 1

Question Label : Multiple Choice Question

R-charts are preferable over σ-charts because :

Options :

1. R can be easily calculated

2. R charts are economical

3. R and Standard Deviation fluctuate together in case of small sample

4. All of the three

Question Number : 89 Question Id : 6589881749 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical Allowed Progression : Yes Number of Replay : 999 Play On Load : No Control Enable : Yes

Correct Marks : 3 Wrong Marks : 1

Question Label : Multiple Choice Question

If the sampling fraction n/N is negligible, then average outgoing quality limit (A.O.Q.L.) in terms of probability of accepting a lot (Pa) and average quality level (p) is :

Options :

1. $\text{A.O.Q.L.} = \text{pPa}$

2. $\text{A.O.Q.L.} = \text{p}/\text{Pa}$

3. $\text{A.O.Q.L.} = \frac{p}{Pa} - 1$

4. $\text{A.O.Q.L.} = \text{pPa} - 1$

Question Number : 90 Question Id : 6589881750 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical Allowed Progression : Yes Number of Replay : 999 Play On Load : No Control Enable : Yes

Correct Marks : 3 Wrong Marks : 1

Question Label : Multiple Choice Question

A curve showing the proportion of submitted lots that will be accepted on the basis of sampling plan for each percentage of defective items in the lots under consideration is known as :

Options :

1. Power curve

2. ASN curve

3. OC curve

4. Gompertz curve

Question Number : 91 Question Id : 6589881751 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical Allowed Progression : Yes Number of Replay : 999 Play On Load : No Control Enable : Yes

Correct Marks : 3 Wrong Marks : 1

Question Label : Multiple Choice Question

The probability of accepting a lot of unsatisfactory quality is known as :

Options :

1. Producer's risk

2. Consumer's risk

3. AOQ risk

4. None of the three

Question Number : 92 Question Id : 6589881752 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical Allowed Progression : Yes Number of Replay : 999 Play On Load : No Control Enable : Yes

Correct Marks : 3 Wrong Marks : 1

Question Label : Multiple Choice Question

When there are many items to be inspected and the inspection error rate is sufficiently high, which one of the following is used ?

Options :

1. Acceptance sampling

2. 0% inspection

3. 50% inspection

4. 100% inspection

Question Number : 93 Question Id : 6589881753 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical Allowed Progression : Yes Number of Replay : 999 Play On Load : No Control Enable : Yes

Correct Marks : 3 Wrong Marks : 1

Question Label : Multiple Choice Question

The equation $y_t = ab^{c^t}$ stands for :

Options :

1. Exponential curve

2. Gompertz curve

3. Hyperbola

4. Logarithmic curve

Question Number : 94 Question Id : 6589881754 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical Allowed Progression : Yes Number of Replay : 999 Play On Load : No Control Enable : Yes

Correct Marks : 3 Wrong Marks : 1

Question Label : Multiple Choice Question

If the value of a time series at any time t is a function of its value at some previous time, such a time series is known as :

Options :

1. Autoregressive series

2. Fourier series

3. Harmonic series

4. ARMA series

Question Number : 95 Question Id : 6589881755 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical Allowed Progression : Yes Number of Replay : 999 Play On Load : No Control Enable : Yes

Correct Marks : 3 Wrong Marks : 1

Question Label : Multiple Choice Question

The equation of the parabolic trend is $Y = 46.6 + 2.4X + 1.3X^2$. If the origin is shifted backward by three years the equation of parabolic trend will be :

Options :

1. $Y = 27.7 - 5.4X - 1.3X^2$

2. $Y = 51.1 - 5.4X - 1.3X^2$

3. $Y = 27.7 + 10.2X - 1.3X^2$

4. There will be no change

Question Number : 96 Question Id : 6589881756 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical Allowed Progression : Yes Number of Replay : 999 Play On Load : No Control Enable : Yes

Correct Marks : 3 Wrong Marks : 1

Question Label : Multiple Choice Question

The number of mistakes committed by a mechanic in 20 samples of assembled radios are 25. The lower control limit for the appropriate chart in this situation will be :

Options :

1. 0.10

2. 0.05

3. zero

4. 0.13

Question Number : 97 Question Id : 6589881757 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical Allowed Progression : Yes Number of Replay : 999 Play On Load : No Control Enable : Yes

Correct Marks : 3 Wrong Marks : 1

Question Label : Multiple Choice Question

The arithmetic mean of Laspeyre's and Paasche's index number is :

Options :

1. Drolish-Bowley Index

Fisher Ideal Index
2.

Walsh Index
3.

Bowley Index
4.

Question Number : 98 Question Id : 6589881758 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical Allowed Progression : Yes Number of Replay : 999 Play On Load : No Control Enable : Yes

Correct Marks : 3 Wrong Marks : 1

Question Label : Multiple Choice Question

The homogeneity error (R) in reference to index number lies between :

Options :

0 to ∞
1.

0 to 1
2.

−1 to 1
3.

−1 to 0
4.

Question Number : 99 Question Id : 6589881759 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical Allowed Progression : Yes Number of Replay : 999 Play On Load : No Control Enable : Yes

Correct Marks : 3 Wrong Marks : 1

Question Label : Multiple Choice Question

Connecting two index number series having different base periods into one series with common base period is known as :

Options :

Base shifting
1.

Splicing
2.

Deflating
3.

Link relatives

4.

Question Number : 100 Question Id : 6589881760 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical Allowed Progression : Yes Number of Replay : 999 Play On Load : No Control Enable : Yes

Correct Marks : 3 Wrong Marks : 1

Question Label : Multiple Choice Question

The error caused by the consideration of only the binary items omitting the unique items present in the base and current period is known as :

Options :

Homogeneity error

1.

Sampling error

2.

Formula error

3.

Error in collected data

4.

Question Number : 101 Question Id : 6589881761 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical Allowed Progression : Yes Number of Replay : 999 Play On Load : No Control Enable : Yes

Correct Marks : 3 Wrong Marks : 1

Question Label : Multiple Choice Question

Choose the *correct* options given below :

(a) We introduce slack and surplus variables in case of $\leq$ and $\geq$ sign of inequalities respectively.

(b) Intersection point of incoming vector column and outgoing row is known as key element.

(c) Incoming vector assign corresponding to lowest net evaluation i.e. Δ_j for all j.

(d) Outgoing vector assigns corresponding to max. ratio of X_B / Y_j.

Select your answer from the following codes :

Options :

a, b, c, d

1.

a, b, d

2.

3. a, b

4. a, c, d

Question Number : 102 Question Id : 6589881762 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical Allowed Progression : Yes Number of Replay : 999 Play On Load : No Control Enable : Yes

Correct Marks : 3 Wrong Marks : 1

Question Label : Multiple Choice Question

Identify the *correct* statements from the following :

(a) Hungarian method is used to solve assignment problem as well as travelling salesman problem.

(b) Travelling salesman problem is one in which cost is a largest number along the principal diagonal.

Select your answer from the following codes :

Options :

1. Both (a) and (b) are true

2. Only (a) is true

3. Only (b) is true

4. Both (a) and (b) are false

Question Number : 103 Question Id : 6589881763 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical Allowed Progression : Yes Number of Replay : 999 Play On Load : No Control Enable : Yes

Correct Marks : 3 Wrong Marks : 1

Question Label : Multiple Choice Question

Among the following methods which one is used to solve a transportation problem :

(a) North-West Corner Method

(b) Matrix Minima Method

(c) Unit Cost Penality Method

Select your answer from the following codes :

Options :

1. All are correct

2. Only (a) and (b)

3. Only (b) and (c)

4. None of the three

Question Number : 104 Question Id : 6589881764 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical Allowed Progression : Yes Number of Replay : 999 Play On Load : No Control Enable : Yes

Correct Marks : 3 Wrong Marks : 1

Question Label : Multiple Choice Question

For (M|M|1) queuing model, choose the *correct* option among the following :

(a) The expression for the probability distribution of queue length is

$$P_x = \left(1-\frac{\lambda}{\mu}\right)\left(\frac{\lambda}{\mu}\right)^n$$

(b) Average number of customers in the system is given by $L_s = \left(\frac{\rho}{1-\rho}\right); \rho = \left(\frac{\lambda}{\mu}\right)$

Select your answer from the following codes :

Options :

1. Both (a) and (b) are incorrect

2. Only (a) is correct

3. Only (b) is correct

4. Both (a) and (b) are correct

Question Number : 105 Question Id : 6589881765 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical Allowed Progression : Yes Number of Replay : 999 Play On Load : No Control Enable : Yes

Correct Marks : 3 Wrong Marks : 1

Question Label : Multiple Choice Question

Games which involved more than two players are called as :

Options :

1. Conflicting game

2. Negotiable game

3. N-person game

4. All of the three

Question Number : 106 Question Id : 6589881766 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical Allowed Progression : Yes Number of Replay : 999 Play On Load : No Control Enable : Yes

Correct Marks : 3 Wrong Marks : 1

Question Label : Multiple Choice Question

In a Markov chain, if a state 'i' is aperiodic, non-null and recurrent, then state 'i' is said to be :

Options :

1. Reducible

2. Ergodic

3. Both Reducible and Ergodic

4. None of the three

Question Number : 107 Question Id : 6589881767 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical Allowed Progression : Yes Number of Replay : 999 Play On Load : No Control Enable : Yes

Correct Marks : 3 Wrong Marks : 1

Question Label : Multiple Choice Question

Let λ and μ respectively denote mean arrival rate and mean survice rate in a queuing model $(M|M|1) : (\infty|FCFS)$. Then average number of customers in the queue is :

Options :

1. $\frac{\lambda^2}{\mu(\mu-\lambda)}$

2. $\frac{\lambda}{\mu-\lambda}$

3. $\frac{\lambda}{\mu(\mu-\lambda)}$

4. $\frac{\lambda^2}{\mu-\lambda}$

Question Number : 108 Question Id : 6589881768 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical Allowed Progression : Yes Number of Replay : 999 Play On Load : No Control Enable : Yes

Correct Marks : 3 Wrong Marks : 1

Question Label : Multiple Choice Question

In a queuing model $(M|M|S) : (\infty|FCFS)$, let μ denote survice rate which is same for all channels. Let number of customers (n) is less than S, then rate of survice μ_n will be :

Options :

1. $\mu_n = S\mu$

2. $\mu_n = n\mu$

3. $\mu_n = (n-S)\mu$

4. $\mu_n = (S-n)\mu$

Question Number : 109 Question Id : 6589881769 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical Allowed Progression : Yes Number of Replay : 999 Play On Load : No Control Enable : Yes

Correct Marks : 3 Wrong Marks : 1

Question Label : Multiple Choice Question

The optimum solution of the problem of a decorative item dealer who wish to maximize the objective function $z = 3x + 4y$, subject to $x + 2y \leq 10$, $x + y \leq 8$, $x, y \geq 0$ is :

Options :

1. 20

2. 24

3. 28

4. 26

Question Number : 110 Question Id : 6589881770 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical Allowed Progression : Yes Number of Replay : 999 Play On Load : No Control Enable : Yes

Correct Marks : 3 Wrong Marks : 1

Question Label : Multiple Choice Question

In linear programming problem if the primal have unbounded solution, then dual's solution will be :

Options :

1. unbounded

2. infeasible

3. optimal

4. feasible

Question Number : 111 Question Id : 6589881771 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical Allowed Progression : Yes Number of Replay : 999 Play On Load : No Control Enable : Yes

Correct Marks : 3 Wrong Marks : 1

Question Label : Multiple Choice Question

Identifying among the following statements which is *incorrect* in case of unequal interval :

Options :

1. The divided differences are symmetrical in all the arguments

2. The value of any divided difference is independent of the order of the arguments

3. Newton-Gregory Forward Interpolation Formula is a particular case of Newton's Divided Difference Formula

4. Divided differences do not exist when two or more arguments are same or coincide

Question Number : 112 Question Id : 6589881772 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical Allowed Progression : Yes Number of Replay : 999 Play On Load : No Control Enable : Yes

Correct Marks : 3 Wrong Marks : 1

Question Label : Multiple Choice Question

Choose the *incorrect* statement given below :
(where symbols have their usual meaning)

Options :

1. $D=\frac{1}{h}\left(\Delta-\frac{1}{2}\Delta^2+\frac{1}{3}\Delta^3-.....\right)$

2. $D^2=\frac{1}{h^2}\left(\Delta^2-\Delta^3+\frac{11}{12}\Delta^4-\frac{5}{6}\Delta^5+.....\right)$

3. $S=2\sin h\left(\frac{hD}{2}\right)$

4. $\mu=2\cos h\left(\frac{hD}{2}\right)$

Question Number : 113 Question Id : 6589881773 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical Allowed Progression : Yes Number of Replay : 999 Play On Load : No Control Enable : Yes

Correct Marks : 3 Wrong Marks : 1

Question Label : Multiple Choice Question

The value of integral $\int_0^4 e^x\,dx$, by Simpson's $\frac{1}{3}$rd rule using the data e = 2.72, $e^2=7.39$, $e^3=20.09$ and $e^4=54.60$ is :

Options :

1. 58.873

2. 50

3. 51.24

4. 53.87

Question Number : 114 Question Id : 6589881774 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical Allowed Progression : Yes Number of Replay : 999 Play On Load : No Control Enable : Yes

Correct Marks : 3 Wrong Marks : 1

Question Label : Multiple Choice Question

Identify the *correct* statements among the following :

Options :

1. No. of subinterval will be multiple of 2 in Simpson's $\frac{1}{3}$rd rule.

2. No. of subinterval will be multiple of 6 in Simpson's $\frac{3}{8}$rd rule.

3. No. of subinterval will be multiple of 6 in Weddle's rule.

4. The value of $\int_{-3}^{3} x^4\,dx$ by Simpson's $\frac{1}{3}$rd rule is equal to 98.

Question Number : 115 Question Id : 6589881775 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical Allowed Progression : Yes Number of Replay : 999 Play On Load : No Control Enable : Yes

Correct Marks : 3 Wrong Marks : 1

Question Label : Multiple Choice Question

The solution of difference equation $y_{n+2} - 2y_{n+1} + 2y_n = 0$ is :

Options :

1. $y_n = 2^{n/2}\left(A\cos\frac{n\pi}{4} + B\sin\frac{n\pi}{4}\right)$

2. $y_n = 2^{n/2}\left(A\cos\frac{n\pi}{2} + B\sin\frac{n\pi}{2}\right)$

3. $y_n = \sqrt{2}\left(A\cos\frac{n\pi}{4} + B\sin\frac{n\pi}{4}\right)$

4. $y_n = \sqrt{2}\left(A\cos\frac{n\pi}{2} + B\sin\frac{n\pi}{2}\right)$

Question Number : 116 Question Id : 6589881776 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical Allowed Progression : Yes Number of Replay : 999 Play On Load : No Control Enable : Yes

Correct Marks : 3 Wrong Marks : 1

Question Label : Multiple Choice Question

The value of E^2x^2 and $E^2(x+1)^2$ when the values of x vary by a constant increment of 3 are respectively :

Options :

1. $(x^2+12x+36)$ and $(x^2+14x+49)$

2. $(x^2+14x+49)$ and $(x^2+12x+36)$

3. $(x^2+12x+36)$ and $(x^2+14x+50)$

4. $(x^2+10x+36)$ and $(x^2+14x+49)$

Question Number : 117 Question Id : 6589881777 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical Allowed Progression : Yes Number of Replay : 999 Play On Load : No Control Enable : Yes

Correct Marks : 3 Wrong Marks : 1

Question Label : Multiple Choice Question

The relation between shifting operator E and backward difference operator ∇ of finite difference is :

Options :

1. $\nabla = 1 - E$

2. $\nabla = 1 - E^{-1}$

3. $\nabla = 1 + E$

4. $\nabla = 1 + E^{-1}$

Question Number : 118 Question Id : 6589881778 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical Allowed Progression : Yes Number of Replay : 999 Play On Load : No Control Enable : Yes

Correct Marks : 3 Wrong Marks : 1

Question Label : Multiple Choice Question

A drawback of Newton-Raphson method for solving transcendental equations is :

Options :

1. It is very slow

2. It cannot be used for solving of algebraic equations

3. It is very sensitive to the choice of initial root

All of the three

4.

Question Number : 119 Question Id : 6589881779 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical Allowed Progression : Yes Number of Replay : 999 Play On Load : No Control Enable : Yes

Correct Marks : 3 Wrong Marks : 1

Question Label : Multiple Choice Question

Let n be a positive integer and $x^{(-n)}$ represents a factorial notation. The value of $\Delta x^{(-n)}$, when interval of differencing is unity, is :

Options :

1. $nx^{(-n-1)}$

2. $nx^{(-n+1)}$

3. $-nx^{(-n+1)}$

4. $-nx^{(-n-1)}$

Question Number : 120 Question Id : 6589881780 Question Type : MCQ Option Shuffling : Yes Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical Allowed Progression : Yes Number of Replay : 999 Play On Load : No Control Enable : Yes

Correct Marks : 3 Wrong Marks : 1

Question Label : Multiple Choice Question

Which of the following interpolation formula can be obtained by taking arithmetic mean of Gauss forward and Gauss backward central difference formulae ?

Options :

1. Everett's formula

2. Bessel's formula

3. Stirling's formula

4. Gregory-Newton forward formula