Muhammad Moaaz Siddiq – MCS(4th)
Moaaz.pk@gmail.com
Campus:- Institute of E-Learning & Moderen Studies
(IEMS) Samundari

Question No: 1 (Marks: 1) - Please choose one
The value of χ^2 can never be :

- ► Zero–
- ► Less than 1
- ► Greater than 1
- ► **Negative (Page 307)**

ایماندار کو غصہ دیر سے آتا ہے اور جلدی دور ہو جاتا ہے

Muhammad Moaaz Siddiq – MCS(4th)
Moaaz.pk@gmail.com
Campus:- Institute of E-Learning & Moderen Studies
(IEMS) Samundari

Muhammad Moaaz Siddiq – MCS(4th)
Moaaz.pk@gmail.com
Campus:- Institute of E-Learning & Moderen Studies
(IEMS) Samundari

Question No: 2 (Marks: 1) - Please choose one
The mean of the F-distribution is:

- $\frac{v_1}{v_1 - 2} \quad for v_1 \rangle 2$
- $\frac{v_2}{v_2 - 2} \quad for v_2 \rangle 2$ **(Page 312)**
- $\frac{v_1}{v_1 - 2} \quad for v_1 \geq 2$
- $\frac{v_2}{v_2 - 2} \quad for v_1 \leq 2$

Question No: 3 (Marks: 1) - Please choose one
The F-distribution always ranges from:

- 0 to 1
- 0 to -∞
- -∞ to +∞
- **0 to +∞ (Page 312) rep**

Question No: 4 (Marks: 1) - Please choose one
The total number of samples when sampling is done with replacement :

- N^n **(Page 237)**
- C_n^N
- $\frac{N-n}{N-1}$
- 1

زندگی میں کامیابی کا یہی راز ہے کہ پریشانیوں سے پریشان مت بنو

Muhammad Moaaz Siddiq – MCS(4th)
Moaaz.pk@gmail.com
Campus:- Institute of E-Learning & Moderen Studies
(IEMS) Samundari

Muhammad Moaaz Siddiq – MCS(4th)
Moaaz.pk@gmail.com
Campus:- Institute of E-Learning & Moderen Studies
(IEMS) Samundari

Question No: 5 (Marks: 1) - Please choose one
ANOVA was introduced by :

- Helmert
- Pearson
- **R.A Fisher (Page 320)**
- Francis

Question No: 6 (Marks: 1) - Please choose one
The test statistic used in analysis of variance procedure follow the ..... distribution.:

- χ^2
- T
- Z
- **F (Page 326)**

Question No: 7 (Marks: 1) - Please choose one
For testing of hypothesis about population proportion , we use:

- **Z-test (Page 292)**
- t-Test
- Both Z & T-test
- F test

Question No: 8 (Marks: 1) - Please choose one
If X and Y are random variables, then $E(X-Y)$ is equal to:

- $E(X)+E(Y)$
- $E(X)-E(Y)$ **(Page 202) rep**
- $X-E(Y)$
- $E(X)-Y$

Question No: 9 (Marks: 1) - Please choose one
A die is rolled. What is the probability that the number rolled is greater than 2 and even:

- 1/2
- 1/3
- **2/3 4/6 = 2/3**
- 5/6

Muhammad Moaaz Siddiq – MCS(4th)
Moaaz.pk@gmail.com
Campus:- Institute of E-Learning & Moderen Studies
(IEMS) Samundari

Muhammad Moaaz Siddiq – MCS(4th)
Moaaz.pk@gmail.com
Campus:- Institute of E-Learning & Moderen Studies
(IEMS) Samundari

Question No: 10 (Marks: 1) - Please choose one

The probability of drawing a king of spade from a pack of 52 cards is:

- ► 1/4
- ► 1/13
- ► 1/26
- ► **1/52**

Question No: 11 (Marks: 1) - Please choose one

An estimator T is said to be unbiased estimator of θ if

- ► **E (T) = θ (Page 258)**
- ► E (T) =T
- ► E (T) =0
- ► E (T) =1

Question No: 12 (Marks: 1) - Please choose one

From point estimation, we always get:

- ► **Single value (Page 257)**
- ► Two values
- ► Range of values
- ► Zero

Question No: 13 (Marks: 1) - Please choose one

The best unbiased estimator for population variance σ^2 is:

- ► Sample mean
- ► Sample median
- ► Sample proportion
- ► **Sample variance (Page 260)**

Question No: 14 (Marks: 1) - Please choose one

When c is a constant, then E(c) is:

- ► 0
- ► 1
- ► **c (Page 180)**
- ► -c

دنیا کی سب سے بڑی فتح نفس پر قابو رکھنا ہے

Muhammad Moaaz Siddiq – MCS(4th)
Moaaz.pk@gmail.com
Campus:- Institute of E-Learning & Moderen Studies
(IEMS) Samundari

Muhammad Moaaz Siddiq – MCS(4th)
Moaaz.pk@gmail.com
Campus:- Institute of E-Learning & Moderen Studies
(IEMS) Samundari

Question No: 15 (Marks: 1) - Please choose one
Var(4X + 5) =_____

- ► 16 Var (X)
- ► 16 Var (X) + 5
- ► **4 Var (X) + 5**
- ► 12 Var (X)

Question No: 16 (Marks: 1) - Please choose one
When f(x) is continuous probability function, then P(X = 1) is:

- ► 1
- ► ∞
- ► −∞
- ► **0 (Page 188)**

Question No: 17 (Marks: 1) - Please choose one
The hyper geometric random variable is a(an):

- ► Continuous variable
- ► **Discrete variable** Click here for detail
- ► Undefined
- ► Independent variable

Question No: 18 (Marks: 1) - Please choose one
From a sample of 200 people were asked whether they like a particular product. Fifty said 'yes' and remain said 'no', assuming 'yes' means a success, which of the following is correct?

- ► Sample proportion p=0.33
- ► **Sample proportion p=0.25 (Page 245)**
- ► Population proportion p= 0.33
- ► Population proportion p=0.25

Question No: 19 (Marks: 1) - Please choose one
In any data set, what percent of values fall in the interval $Median \pm Q.D$?

- ► **50 per cent (Page 84)**
- ► 68.5 per cent
- ► 95.4 per cent
- ► 99 per cent

جھوٹ انسان اور ایمان دونوں کا دشمن ہے

Muhammad Moaaz Siddiq – MCS(4th)
Moaaz.pk@gmail.com
Campus:- Institute of E-Learning & Moderen Studies
(IEMS) Samundari

Muhammad Moaaz Siddiq – MCS(4th)
Moaaz.pk@gmail.com
Campus:- Institute of E-Learning & Moderen Studies
(IEMS) Samundari

Question No: 20 (Marks: 1) - Please choose one

$$\sum_{i=1}^{5}(X_i - 20) = 0, then\ \bar{X} = ...$$

If

- ► **0 (Page 258)**
- ► 20
- ► 5
- ► 25

Question No: 21 (Marks: 1) - Please choose one

The height of a student is 60 inches. This is an example of .....?

- ► Continuous data
- ► Qualitative data
- ► Categorical data
- ► **Discrete data**

Question No: 22 (Marks: 1) - Please choose one

In Statistics, we have MSE which is abbreviation of……

- ► **Mean square error (Page 330)**
- ► Measured square error
- ► Medical screening exam
- ► Major sampling error

Question No: 23 (Marks: 1) - Please choose one

Which one is the formula of mid range:

- ► $x_m - x_0$
- ► $x_0 - x_m$
- ► $\frac{x_0 - x_m}{2}$
- ► $\frac{x_0 + x_m}{2}$ **(Page 80)**

عقل مند کہتا ہے میں کچھ نہیں جانتا جبکہ بے وقوف کہتا ہے کہ میں سب کچھ جانتا ہوں

Muhammad Moaaz Siddiq – MCS(4th)
Moaaz.pk@gmail.com
Campus:- Institute of E-Learning & Moderen Studies
(IEMS) Samundari

Muhammad Moaaz Siddiq – MCS(4th)
Moaaz.pk@gmail.com
Campus:- Institute of E-Learning & Moderen Studies
(IEMS) Samundari

Question No: 24 (Marks: 1) - Please choose one
The deviation of a distribution from symmetry is called:

- ► Kurtosis
- ► **Skewness**
- ► Dispersion
- ► Flatness

Question No: 25 (Marks: 1) - Please choose one
If E is an impossible event, then P(E) is:

- ► 1
- ► 2
- ► **0 (Page 146)**
- ► 0.5

Question No: 26 (Marks: 1) - Please choose one
If a data set has the even number of observations, the median :

- ► Is the average value of the two middle items
- ► Can not be determined
- ► must be equal to the mean
- ► **Is the average value of the two middle items when all items are arranged in ascending order**

Click here for detail

Question No: 27 (Marks: 1) - Please choose one
For the Poisson distribution $P(X=1)=\frac{e^{-0.135}0.135^{1}}{1!}$ the mean value is :

- ► 2
- ► 5
- ►10
- ► **0.135 (Page 222)**

Question No: 28 (Marks: 1) - Please choose one
In testing of hypothesis, we always begin it with assuming that:

- ► **Null hypothesis is true (Page 277)**
- ► Alternative hypothesis is true
- ► Sample size is large
- ► Population is normal

خود کو تمھیں سے بڑھ کر کوئی اچھا مشورہ نہیں دے سکتا

Muhammad Moaaz Siddiq – MCS(4th)
Moaaz.pk@gmail.com
Campus:- Institute of E-Learning & Moderen Studies
(IEMS) Samundari

Muhammad Moaaz Siddiq – MCS(4th)
Moaaz.pk@gmail.com
Campus:- Institute of E-Learning & Moderen Studies
(IEMS) Samundari

Question No: 29 (Marks: 1) - Please choose one

Variance of the t-distribution is given by the formula:

$$\sigma^2 = \sqrt{\frac{\nu}{\nu - 2}}$$

▶

$$\sigma^2 = \frac{\nu^2}{\nu - 2}$$

▶

$$\sigma^2 = \frac{\nu}{\nu - 1}$$

▶

$$\sigma^2 = \frac{\nu}{\nu - 2}$$ **(Page 293)**

▶

Question No: 30 (Marks: 1) - Please choose one

If a continuous probability distribution has $\beta_2 = 2.14$ then what will be peakedness of the distribution?

▶ **Platykurtic (Page 119)**
▶ Mesokurtic
▶ Leptokutic
▶ Moderately skewed

FINAL TERM EXAMINATION
Spring 2010
STA301- Statistics and Probability (Session - 4)

Question No: 1 (Marks: 1) - Please choose one

When each outcome of a sample space has equal chance to occur as any other, the outcomes are called:

▶ Mutually exclusive
▶ **Equally likely (Page 117)**
▶ Not mutually exclusive
▶ Exhaustive

جو شخص ناکامیوں سے ڈر کر بھاگتا ہے کامیابی اُس سے ڈر کر بھاگتی ہے

Muhammad Moaaz Siddiq – MCS(4th)
Moaaz.pk@gmail.com
Campus:- Institute of E-Learning & Moderen Studies
(IEMS) Samundari

Muhammad Moaaz Siddiq – MCS(4th)
Moaaz.pk@gmail.com
Campus:- Institute of E-Learning & Moderen Studies
(IEMS) Samundari

Question No: 2 (Marks: 1) - Please choose one
The mean of the F-distribution is:

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- $\frac{v_2}{v_2 - 2} \quad for v_2 \rangle 2$ **(Page 312)**
- $\frac{v_1}{v_1 - 2} \quad for v_1 \geq 2$
- $\frac{v_2}{v_2 - 2} \quad for v_1 \leq 2$

Question No: 3 (Marks: 1) - Please choose one
The LSD test is applied only if the null hypothesis is:

- **Rejected (Page 331)**
- Accepted
- No conclusion
- Acknowledged

Question No: 4 (Marks: 1) - Please choose one
Analysis of variance is a procedure that enables us to test the equality of several:

- Variances
- **Means (Page 320)**
- Proportions
- Groups

Question No: 5 (Marks: 1) - Please choose one
ANOVA was introduced by :

- Helmert
- Pearson
- **R.A Fisher (Page 320) rep**
- Francis

Muhammad Moaaz Siddiq – MCS(4th)
Moaaz.pk@gmail.com
Campus:- Institute of E-Learning & Moderen Studies
(IEMS) Samundari

Muhammad Moaaz Siddiq – MCS(4th)
Moaaz.pk@gmail.com
Campus:- Institute of E-Learning & Moderen Studies
(IEMS) Samundari

Question No: 6 (Marks: 1) - Please choose one
For testing of hypothesis about population proportion , we use:

- **Z-test (Page 292) rep**
- t-Test
- Both Z & T-test
- F test

Question No: 7 (Marks: 1) - Please choose one
If a random variable X denotes the number of heads when three distinct coins are tossed, the X assumed the values:

- **0,1,2,3**
- 1,3,3,1
- 1, 2, 3
- 3, 2

Question No: 8 (Marks: 1) - Please choose one
If X and Y are independent variables, then E (XY) is:

- E(XX)
- **E(X).E(Y) (Page 202)**
- X.E(Y)
- Y.E(X)

Question No: 9 (Marks: 1) - Please choose one
The parameters of the binomial distribution b(x; n, p) are:

- x & n
- **x & p (Page 212) rep**
- n & p
- x, n & p

Question No: 10 (Marks: 1) - Please choose one
If P (E) is the probability that an event will occur, which of the following must be false:

- **P(E)= - 1**
- P(E)=1
- P(E)=1/2
- P(E)=1/3

جو لوگوں کے سامنے فخر کرتا ہے وہ لوگوں کی نظروں سے گر جاتا ہے

Muhammad Moaaz Siddiq – MCS(4th)
Moaaz.pk@gmail.com
Campus:- Institute of E-Learning & Moderen Studies
(IEMS) Samundari

Muhammad Moaaz Siddiq – MCS(4th)
Moaaz.pk@gmail.com
Campus:- Institute of E-Learning & Moderen Studies
(IEMS) Samundari

Question No: 11 (Marks: 1) - Please choose one

An estimator T is said to be unbiased estimator of θ if

- **E (T) = θ (Page 258) rep**
- E (T) =T
- E (T) =0
- E (T) =1

Question No: 12 (Marks: 1) - Please choose one

The best unbiased estimator for population variance σ^2 is:

- **Sample mean (Page 260) rep**
- Sample median
- Sample proportion
- Sample variance

Question No: 13 (Marks: 1) - Please choose one

$$S^2 = \frac{\sum(x-\bar{x})^2}{n}$$

The sample variance is:

- Unbiased estimator of σ^2
- **Biased estimator of σ^2 (Page 260)**
- Unbiased estimator of μ
- None of these

Question No: 14 (Marks: 1) - Please choose one

When c is a constant, then E(c) is:

- 0
- 1
- **c (Page 180) rep**
- -c

عقل مند اپنے عیب خود دیکھتا ہے اور بیوقوفوں کے عیب دنیا دیکھتی ہے

Muhammad Moaaz Siddiq – MCS(4th)
Moaaz.pk@gmail.com
Campus:- Institute of E-Learning & Moderen Studies
(IEMS) Samundari

Muhammad Moaaz Siddiq – MCS(4th)
Moaaz.pk@gmail.com
Campus:- Institute of E-Learning & Moderen Studies (IEMS) Samundari

Question No: 15 (Marks: 1) - Please choose one
If f (x, y) is bivariate probability density function of continuous r.v.'s X and Y then

$g(x)$ is:

- $\int_{-\infty}^{\infty} f(x,y)\,dx$
- $\int_{-\infty}^{\infty} f(x,y)\,dy$
- $\int_{-\infty}^{\infty}\int_{-\infty}^{\infty} f(x,y)\,dx\,dy$ **(Page 199)**
- $\int_{a}^{b}\int_{c}^{d} f(x,y)\,dy\,dx$
-

Question No: 16 (Marks: 1) - Please choose one
The analysis of variance technique is a method for :

- Comparing F distributions
- **Comparing three or more means (Page 320)**
- Measuring sampling error
- Comparing variances

Question No: 17 (Marks: 1) - Please choose one
The continuity correction factor is used when:

- The sample size is at least 5
- Both *nP* and *n (1-P)* are at least 30
- **A continuous distribution is used to approximate a discrete distribution** Click here for detail
- The standard normal distribution is applied

Question No: 18 (Marks: 1) - Please choose one
Stem and leaf is more informative when data is :

- Equal to 100
- Greater Than 100
- **Less than 100** click here for detail
- In all situations

Muhammad Moaaz Siddiq – MCS(4th)
Moaaz.pk@gmail.com
Campus:- Institute of E-Learning & Moderen Studies (IEMS) Samundari

Muhammad Moaaz Siddiq – MCS(4th)
Moaaz.pk@gmail.com
Campus:- Institute of E-Learning & Moderen Studies
(IEMS) Samundari

Question No: 19 (Marks: 1) - Please choose one
The branch of Statistics that is concerned with the procedures and methodology for obtaining valid conclusions is called:

- Descriptive Statistics
- Advance Statistics
- **Inferential Statistics (Page 237)**
- Sampled Statistics

Question No: 20 (Marks: 1) - Please choose one
Which of the following is a systematic arrangement of data into rows and columns?

- Classification
- **Tabulation**
- Bar chart
- Component bar chart

Question No: 21 (Marks: 1) - Please choose one
In normal distribution Q.D =

- 0.5σ
- 0.75σ
- 0.7979σ
- 0.6745σ Click here for detail

Question No: 22 (Marks: 1) - Please choose one
$\beta_2 =$
In normal distribution

- 1
- 2
- **3 (Page 119)**
- 0

Question No: 23 (Marks: 1) - Please choose one
If you connect the mid-points of rectangles in a histogram by a series of lines that also touches the x-axis from both ends, what will you get?

- Ogive
- Frequency polygon
- **Frequency curve (Page 38)**
- Historigram

Muhammad Moaaz Siddiq – MCS(4th)
Moaaz.pk@gmail.com
Campus:- Institute of E-Learning & Moderen Studies
(IEMS) Samundari

Muhammad Moaaz Siddiq – MCS(4th)
Moaaz.pk@gmail.com
Campus:- Institute of E-Learning & Moderen Studies
(IEMS) Samundari

Question No: 24 (Marks: 1) - Please choose one
Which one of the following statements is true regarding a population?

- **It must be a large number of values (Page 12)**
- It must refer to people
- It is a collection of individuals, objects, or measurements
- It is small part of whole

Question No: 25 (Marks: 1) - Please choose one
When $Q_1 = 2$ *and* $Q_3 = 4$,what is the value of Median, if the distribution is symmetrical:

- 1
- **2**
- 3
- 4

Question No: 26 (Marks: 1) - Please choose one
In a simple linear regression model, if it is assumed that the intercept parameter is equal to zero, then:

- The regression line will pass through the origin
- The regression line will pass through the point (0,10).
- The regression line will pass through the point (0,-10).
- **The slope of the line will also be equal to 0.**

Question No: 27 (Marks: 1) - Please choose one
The degrees of freedom for a t-test with sample size 10 is:

- 5
- 8
- **9 (Page 298) rep**
- 10

Question No: 28 (Marks: 1) - Please choose one
In testing of hypothesis, we always begin it with assuming that:

- **Null hypothesis is true (Page 277) rep**
- Alternative hypothesis is true
- Sample size is large
- Population is normal

بد صورت چہرہ بد صورت دماغ سے بہتر ہے

Muhammad Moaaz Siddiq – MCS(4th)
Moaaz.pk@gmail.com
Campus:- Institute of E-Learning & Moderen Studies
(IEMS) Samundari

Muhammad Moaaz Siddiq – MCS(4th)
Moaaz.pk@gmail.com
Campus:- Institute of E-Learning & Moderen Studies
(IEMS) Samundari

Question No: 29 (Marks: 1) - Please choose one
A failing student is passed by an examiner is an example of:

- Type I error
- **Type II error**
- Correct decision
- No information regarding student exams

Question No: 30 (Marks: 1) - Please choose one
How to find $P(X+Y \le 1)$?

- f(0, 0) + f(0, 1) + f(1, 2)
- f(2, 0) + f(0, 1) + f(1, 0)
- f(0, 0) + f(1, 1) + f(1, 0)
- f(0, 0) + f(0, 1) + f(1, 0)

Question No: 1 (Marks: 1) - Please choose one
The total number of samples when sampling is done with replacement :

- N^n **(Page 237) rep**
- C_n^N
- $\frac{N-n}{N-1}$
-
- 1

عقل مند آدمی اس وقت تک نہیں بولتا جب تک خاموشی نہیں ہو جاتی

Muhammad Moaaz Siddiq – MCS(4th)
Moaaz.pk@gmail.com
Campus:- Institute of E-Learning & Moderen Studies
(IEMS) Samundari

Muhammad Moaaz Siddiq – MCS(4th)
Moaaz.pk@gmail.com
Campus:- Institute of E-Learning & Moderen Studies
(IEMS) Samundari

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- **E(X).E(Y) (Page 202) rep**
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The sample variance is:

- Unbiased estimator of σ^2
- **Biased estimator of σ^2 (Page 260) rep**
- Unbiased estimator of μ
- None of these

انسان دکھ نہیں دیتے بلکہ انسانوں سے وابستہ امیدیں دکھ دیتی ہیں

Muhammad Moaaz Siddiq – MCS(4th)
Moaaz.pk@gmail.com
Campus:- Institute of E-Learning & Moderen Studies
(IEMS) Samundari

Muhammad Moaaz Siddiq – MCS(4th)
Moaaz.pk@gmail.com
Campus:- Institute of E-Learning & Moderen Studies
(IEMS) Samundari

Question No: 6 (Marks: 1) - Please choose one
When c is a constant, then E(c) is:

- ► 0
- ► 1
- ► **c (Page 180) rep**
- ► -c

Question No: 7 (Marks: 1) - Please choose one
When the random variable X and Y are independent, its co-variance is:

- ► One
- ► Negative
- ► **Zero (Page 207)**
- ► Positive

Question No: 8 (Marks: 1) - Please choose one
When f (x, y) is bivariate probability density function of continuous r.v.'s X and Y, then

$$\int_{-\infty}^{\infty}\int_{-\infty}^{\infty} f(x,y)\,dx\,dy$$

is equal to:

- ► **1 (Page 199)**
- ► 0
- ► -1
- ► ∞

Question No: 9 (Marks: 1) - Please choose one
Which dispersion is calculated from all the observations?

- ► **Standard deviation**
- ► Quartile deviation
- ► Rang
- ► Coefficient of Rang

Question No: 10 (Marks: 1) - Please choose one
Standard deviation of the data 7, 7, 7, 7, 7, 7, 7 is

- ► 49
- ► Sqrt (7)
- ► **0 Standard deviation will always be zero if all the values in data are same**
- ► 7

Muhammad Moaaz Siddiq – MCS(4th)
Moaaz.pk@gmail.com
Campus:- Institute of E-Learning & Moderen Studies
(IEMS) Samundari

Muhammad Moaaz Siddiq – MCS(4th)
Moaaz.pk@gmail.com
Campus:- Institute of E-Learning & Moderen Studies
(IEMS) Samundari

Question No: 11 (Marks: 1) - Please choose one
Which one is the poor measure of dispersion in open-end distribution?

- **Range**
- Standard deviation
- Mean deviation
- Variance

Question No: 12 (Marks: 1) - Please choose one
Men tend to marry women who are slightly younger than themselves. Suppose that every man married a woman who was exactly 5 years younger than themselves. Which of the following is correct:

- The correlation is −5
- The correlation is 5
- **The correlation is 1** Click here for detail
- The correlation is 0

Question No: 13 (Marks: 1) - Please choose one
Sum of absolute deviations of the values is least when deviations are taken from:

- **Mean**
- Median
- Mode
- Geometric mean

Question No: 14 (Marks: 1) - Please choose one
Which of the following measures of central location is affected most by extreme values:

- Geometric Mean
- Median
- **Mean** Click here for detail
- Mode

Question No: 15 (Marks: 1) - Please choose one
Which of the following is a critical value of Z when $1-\alpha=95\%$ for one tailed test:

- 2.58
- 1.645
- 1.25
- **1.96**

بہترین تجربہ وہ ہے جس سے نصیحت حاصل ہو

Muhammad Moaaz Siddiq – MCS(4th)
Moaaz.pk@gmail.com
Campus:- Institute of E-Learning & Moderen Studies
(IEMS) Samundari

Muhammad Moaaz Siddiq – MCS(4th)
Moaaz.pk@gmail.com
Campus:- Institute of E-Learning & Moderen Studies
(IEMS) Samundari

Question No: 16 (Marks: 1) - Please choose one
In normal distribution Q.D =

- 0.5σ
- 0.75σ
- 0.7979σ
- 0.6745σ Click here for detail rep

Question No: 17 (Marks: 1) - Please choose one
The difference between expected value of statistic and parameter is called:

- Non-sampling error
- Sampling error
- Standard error
- **Bias** Click here for detail

Question No: 18 (Marks: 1) - Please choose one
In Statistics, we have MSE which is abbreviation of……

- **Mean square error (Page 330) rep**
- Measured square error
- Medical screening exam
- Major sampling error

Question No: 19 (Marks: 1) - Please choose one
The following data shows the number of hours worked by 200 statistics students.

Number of Hours	Frequency
0 - 9	40
10 - 19	50
20 - 29	70
30 - 39	40

What is its class interval?

- 9
- **10**
- 11
- Varies from class to class

خوبصورتی علم وادب سے ہوتی ہے لباس و حسن سے نہیں

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Question No: 20 (Marks: 1) - Please choose one
Which one is the formula of range:

- $x_m - x_0$
- $x_0 - x_m$
- $\frac{x_0 - x_m}{2}$
- $\frac{x_0 + x_m}{2}$ **(Page 80)**

Question No: 21 (Marks: 1) - Please choose one
Which one is the formula of Geometric mean for group data:

- $anti\log\left[\frac{\sum f \log X}{n}\right]$
- $anti\log\left[\frac{\sum \log X}{n}\right]$ **(Page 75)**
- $anti\log\left[\frac{\sum \log f X}{n}\right]$
- $anti\log\left[\frac{\sum \log f X}{\sum_{i=1}^{n} f}\right]$

Question No: 22 (Marks: 1) - Please choose one
The F-distribution has …… parameter.

- One
- No
- **Two (Page 312)**
- Three

تم اچھا کرو زمانہ تم کو برا سمجھے یہ اس سے بہتر ہے کہ تم برا کرو اور زمانہ تم کو اچھا سمجھے

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Question No: 23 (Marks: 1) - Please choose one

$$\bar{X} = \frac{\Sigma X}{n}$$

The sample mean is an unbiased estimator of population mean (μ), because:

- $E(\bar{X}) = 0$
- $E(\bar{X}) = \mu$ **(Page 259)**
- $E(\bar{X}) > \mu$
- $E(\bar{X}) < \mu$

Question No: 24 (Marks: 1) - Please choose one

For a particular hypothesis test, $\alpha = 0.05$ and $\beta = 0.10$. The power of test equals to:

- 0.95
- 0.25
- **0.90**
- 0.14

Question No: 25 (Marks: 1) - Please choose one

The degrees of freedom for a t-test with sample size 10 is:

- 5
- 8
- **9 (Page 298) rep**
- 10

Question No: 26 (Marks: 1) - Please choose one

The degrees of freedom for a t-test with sample size 14 is:

- 14
- **13 (Page 341) rep**
- 7
- 0

Question No: 27 (Marks: 1) - Please choose one

The degrees of freedom for a t-test with sample size 6 is:

- 1
- 3
- **5 (Page 341)**
- 7

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انسان کے لئے بری صحبت سے بڑھ کر بری کوئی چیز نہیں

Question No: 28 (Marks: 1) - Please choose one
In testing of hypothesis, we always begin it with assuming that:

- **Null hypothesis is true (Page 277) rep**
- Alternative hypothesis is true
- Sample size is large
- Population is normal

Question No: 29 (Marks: 1) - Please choose one
If a continuous probability distribution has $\beta_2 = 2.14$ then what will be peakedness of the distribution?

- **Platykurtic (Page 119) rep**
- Mesokurtic
- Leptokutic
- Moderately skewed

Question No: 30 (Marks: 1) - Please choose one
The difference between statistic and parameter is called:

- **Bias** Click here for detail **rep**
- Standard error
- Sampling error
- None of above

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