

FINAL TERM EXAMINATION
Spring 2012
STA301- Statistics and Probability

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

For a particular data the value of Pearson's coefficient of skewness is greater than zero. What will be the shape of distribution?

- ▶ Negatively skewed
- ▶ J-shaped
- ▶ Symmetrical
- ▶ **Positively skewed (Page 109)**

Question No: 2 (Marks: 1) - Please choose one

In measures of relative dispersion unit of measurement is:

- ▶ Changed
- ▶ **Vanish**
- ▶ Does not changed
- ▶ Dependent

Question No: 3 (Marks: 1) - Please choose one

The F-distribution always ranges from:

- ▶ 0 to 1
- ▶ 0 to $-\infty$
- ▶ $-\infty$ to $+\infty$
- ▶ **0 to $+\infty$ (Page 312)**

دنیا میں سب سے مشکل کام اپنی اصلاح اور سب سے آسان کام دوسروں پر نکتہ چینی کرنا ہے

Question No: 4 (Marks: 1) - Please choose one

In chi-square test of independence the degrees of freedom are:

- ▶ **n - p**
- ▶ n - p-1
- ▶ n - p- 2
- ▶ n - 2

Question No: 5 (Marks: 1) - Please choose one

The Chi- Square distribution is continuous distribution ranging from:

- ▶ $-\infty \leq \chi^2 \leq \infty$
- ▶ $-\infty \leq \chi^2 \leq 1$
- ▶ $-\infty \leq \chi^2 \leq 0$
- ▶ **$0 \leq \chi^2 \leq \infty$ (Page 307)**

Question No: 6 (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)**
- ▶ $X - E(Y)$
- ▶ $E(X) - Y$

Question No: 7 (Marks: 1) - Please choose one

If $\hat{y}$ is the predicted value for a given x-value and b is the y-intercept then the equation of a regression line for an independent variable x and a dependent variable y is:

- ▶ **$\hat{y} = mx + b$, where m = slope (Page 121)**
- ▶ $x = \hat{y} + mb$, where m = slope
- ▶ $\hat{y} = x/m + b$, where m = slope
- ▶ $\hat{y} = x + mb$, where m = slope

Question No: 8 (Marks: 1) - Please choose one

The location of the critical region depends upon:

- ▶ Null hypothesis
- ▶ **Alternative hypothesis (Page 281)**
- ▶ Value of alpha
- ▶ Value of test-statistic

FINAL TERM EXAMINATION
Spring 2012
STA301- Statistics and Probability

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

The t-Distribution is..... Spread out then the standard normal Distribution.

- ▶ Less
- ▶ **More (Page 293)**
- ▶ Equally
- ▶ Not

Question No: 2 (Marks: 1) - Please choose one

To find the confidence interval for the ratio of two variances we use:

- ▶ **F-Distribution (Page 311)**
- ▶ Z-Distribution
- ▶ Chi-Square Distribution
- ▶ T-Distribution

Question No: 3 (Marks: 1) - Please choose one

How many percent of values are less than 4th deciles in a symmetric distribution.

- ▶ 14
- ▶ 24
- ▶ 4
- ▶ **40 (Page 70)**

Question No: 4 (Marks: 1) - Please choose one

The combined distribution of more than two random variables is:

- ▶ Bivariate Distribution
- ▶ Marginal Distribution
- ▶ **Joint Distribution (Page 194)**
- ▶ Univariate Distribution

Question No: 5 (Marks: 1) - Please choose one

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

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

بری صحبت سے تنہائی بہتر ہے اور تنہائی سے نیک صحبت بہتر ہے

Question No: 6 (Marks: 1) - Please choose one

Which of the following is true for the binomial distribution $b(x; n, p)$:

▶ **Mean > Variance** (Page 214)

▶ Mean < Variance

▶ Mean = Variance

▶ Mean = Standard Deviation

Question No: 7 (Marks: 1) - Please choose one

What is mf in the formula of mode?

▶ first frequency

▶ last frequency

▶ middle frequency

▶ **highest frequency** (Page 54)

FINAL TERM EXAMINATION
Fall 2011
STA301- Statistics and Probability

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

The parameters of the binomial distribution $b(x; n, p)$ are:

▶ x & n

▶ x & p

▶ **n & p** (Page 212)

▶ x, n & p

Question No: 2 (Marks: 1) - Please choose one

Which of the following is true for the Poisson distribution:

▶ mean > variance

▶ mean < variance

▶ **mean = variance** (Page 223)

▶ mean = standard deviation

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Question No: 3 (Marks: 1) - Please choose one

If a significance level of 1% is used rather than 5%, the null hypothesis is:

- ▶ More likely to be rejected
- ▶ **Less likely to be rejected**
- ▶ Just as likely to be rejected
- ▶ None of the above

Question No: 4 (Marks: 1) - Please choose one

The variance of the chi-square distribution is:

- ▶ $2v$ (Page 307)
- ▶ $v - 1$
- ▶ $v - 2$
- ▶ v

Question No: 5 (Marks: 1) - Please choose one

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

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

FINAL TERM EXAMINATION

Spring 2010

STA301- Statistics and Probability (Session - 4)

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

Question No: 2 (Marks: 1) - Please choose one

The mean of the F-distribution is:

▶ $\frac{v_1}{v_1 - 2} \text{ for } v_1 > 2$

▶ $\frac{v_2}{v_2 - 2} \text{ for } v_2 > 2$

(Page 312)

▶ $\frac{v_1}{v_1 - 2} \text{ for } v_1 \geq 2$

▶ $\frac{v_2}{v_2 - 2} \text{ for } v_1 \leq 2$

Question No: 3 (Marks: 1) - Please choose one

The F-distribution always ranges from:

▶ 0 to 1

▶ 0 to $-\infty$

▶ $-\infty$ to $+\infty$

▶ 0 to $+\infty$ (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

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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

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

- ▶ $E(T) = \theta$ (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

Question No: 15 (Marks: 1) - Please choose one

Var(4X + 5) = _____

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- ▶ 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
- ▶ ∞
- ▶ $-\infty$
- ▶ **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

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

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

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)

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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 تمہیں سے بڑھ کر کوئی اچھا مشورہ نہیں دے سکتا

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

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

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



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



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



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

(Page 293)



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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

▶ Leptokurtic

▶ 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 اس سے ڈر کر بھاگتی ہے

Question No: 2 (Marks: 1) - Please choose one

The mean of the F-distribution is:

▶ $\frac{v_1}{v_1 - 2} \text{ for } v_1 > 2$



$\frac{v_2}{v_2 - 2} \text{ for } v_2 > 2$

(Page 312)



$\frac{v_1}{v_1 - 2} \text{ for } v_1 \geq 2$



$\frac{v_2}{v_2 - 2} \text{ for } v_1 \leq 2$



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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

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:

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

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

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

- ▶ **$E(T) = \theta$ (Page 258) rep**
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- ▶ $E(T) = 0$
- ▶ $E(T) = 1$

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

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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

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

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

In normal distribution $\beta_2 =$

- ▶ 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)**
- ▶ Histogram

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

$$Q_1 = 2 \text{ and } Q_3 = 4$$

When _____, 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**
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Question No: 29 (Marks: 1) - Please choose one

A failing student is passed by an examiner is an example of:

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

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

How to find $P(X+Y \leq 1)$?

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

FINAL TERM EXAMINATION

Spring 2010

STA301- Statistics and Probability (Session - 3)

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

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Question No: 2 (Marks: 1) - Please choose one

The test statistic used in analysis of variance procedure follow the distribution.:

- ▶ χ^2
- ▶ T
- ▶ Z
- ▶ F (Page 326) rep

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- ▶ 0,1,2,3 rep
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Question No: 4 (Marks: 1) - Please choose one

If X and Y are independent variables, then E (XY) is:

- ▶ E(XX)
- ▶ E(X).E(Y) (Page 202) rep
- ▶ X.E(Y)
- ▶ Y.E(X)

Question No: 5 (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) rep
- ▶ Unbiased estimator of μ
- ▶ None of these

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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

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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

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**
- ▶ 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

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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**
- ▶ 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

Question No: 16 (Marks: 1) - Please choose one

In normal distribution Q.D =

- ▶ 0.5σ
- ▶ 0.75σ
- ▶ 0.7979σ
- ▶ 0.6745σ 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**

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.

<u>Number of Hours</u>	<u>Frequency</u>
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 و ادب سے ہوتی ہے لباس و حسن سے نہیں

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

Which one is the formula of range:

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▶ $x_m - x_0$

▶ $x_0 - x_m$

▶ $\frac{x_0 - x_m}{2}$

▶ $\frac{x_0 + x_m}{2}$

(Page 80)

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

Which one is the formula of Geometric mean for group data:

▶ $\text{anti log} \left[\frac{\sum f \log X}{n} \right]$

▶ $\text{anti log} \left[\frac{\sum \log X}{n} \right]$

(Page 75)

▶ $\text{anti log} \left[\frac{\sum \log f X}{n} \right]$

▶ $\text{anti log} \left[\frac{\sum \log f X}{\sum_{i=1}^n f} \right]$

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

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

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

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

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

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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

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
- ▶ Leptokurtic
- ▶ Moderately skewed

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

The difference between statistic and parameter is called:

- ▶ **Bias** **rep**
- ▶ Standard error
- ▶ Sampling error
- ▶ None of above

FINAL TERM EXAMINATION

Fall 2009

STA301- Statistics and Probability (Session - 4)

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

Mean deviation is always:

- ▶ Less than S.D
- ▶ Greater than S.D
- ▶ Greater or equal to S.D
- ▶ **Less or equal to S.D**

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

Question No: 2 (Marks: 1) - Please choose one

The value of χ^2 can never be :

- ▶ Zero
- ▶ Less than 1
- ▶ Greater than 1
- ▶ **Negative (Page 307) rep**

Question No: 3 (Marks: 1) - Please choose one

The mean of the F-distribution is:

- ▶ $\frac{v_1}{v_1 - 2} \text{ for } v_1 > 2$
- ▶ $\frac{v_2}{v_2 - 2} \text{ for } v_2 > 2$ **(Page 312) rep**
- ▶ $\frac{v_1}{v_1 - 2} \text{ for } v_1 \geq 2$
- ▶ $\frac{v_2}{v_2 - 2} \text{ for } v_1 \leq 2$
- ▶

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Question No: 4 (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**
- ▶ $X - E(Y)$
- ▶ $E(X) - Y$
- ▶

خاموشی غصے کا بہترین علاج ہے

Question No: 5 (Marks: 1) - Please choose one

Evaluate: $(9-4)!$

▶ 362880

▶ **120**

▶ 24

▶ 6

Question No: 6 (Marks: 1) - Please choose one

Which formula represents the probability of the complement of event A:

▶ $1 + P(A)$

▶ **$1 - P(A)$ (Page 156)**

▶ $P(A)$

▶ $P(A) - 1$

Question No: 7 (Marks: 1) - Please choose one

Ideally the width of confidence interval should be:

▶ **0 (Page 270)**

▶ 1

▶ 99

▶ 100

Question No: 8 (Marks: 1) - Please choose one

If the sampling distribution of $\bar{X}$ is normal, the interval $\mu_{\bar{x}} \pm 3\sigma_{\bar{x}}$ includes:

▶ 99% of the sample means

▶ **99.73% of the sample means (Page 228)**

▶ 98% of the sample means

▶ 95% of the sample means

Question No: 9 (Marks: 1) - Please choose one

The probability distribution of a statistic is called the:

▶ Population distribution

▶ Frequency distribution

▶ **Sampling distribution**

▶ Sample distribution

جھوٹ رزق کو کھا جاتا ہے

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

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

- ▶ **$E(T) = \theta$ (Page 258) rep**
- ▶ $E(T) = T$
- ▶ $E(T) = 0$
- ▶ $E(T) = 1$

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

If the following is a probability distribution, then what is the value of 'a':

X	1	2	3
P(X)	0.1	a	0.1

- ▶ 0.6
- ▶ **0.8**
- ▶ 0.2
- ▶ 0.4

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

A discrete probability function $f(x)$ is always:

- ▶ Non-negative
- ▶ Negative
- ▶ **One (Page 168)**
- ▶ Zero

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

An expected value of a random variable is equal to:

- ▶ Variance
- ▶ **Mean (Page 191)**
- ▶ Standard deviation
- ▶ Covariance

افضل انسان وہ ہے جو اپنی اصلاح کی کوشش کرتا ہے

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

$f(x|1) =$
The _____ :

- ▶ $f(1,1)$
- ▶ $f(x,1)$
- ▶ $\frac{f(x,1)}{h(1)}$ (Page 198)
- ▶ $\frac{f(x,1)}{h(x)}$
- ▶

Question No: 15 (Marks: 1) - Please choose one

The area under a normal curve between 0 and -1.75 is

- ▶ .0401
- ▶ .5500
- ▶ **.4599** (Page 230)
- ▶ .9599

Question No: 16 (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**
- ▶ The standard normal distribution is applied

Question No: 17 (Marks: 1) - Please choose one

Which of the following is impossible in sampling:

- ▶ Destructive tests
- ▶ **Heterogeneous**
- ▶ To make voters list
- ▶ None of these

اطمینان قلب چاہتے ہو تو حسد سے دور رہو

Question No: 18 (Marks: 1) - Please choose one

Which of the following is a systematic arrangement of data into rows and columns?

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

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Question No: 19 (Marks: 1) - Please choose one

Which one of the following statements is true regarding a sample?

- ▶ **It is a part of population (Page 13)**
- ▶ It must contain at least five observations
- ▶ It refers to descriptive statistics
- ▶ It produces True value

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

The data for an ogive is found in which distribution?

- ▶ A relative frequency distribution
- ▶ A frequency distribution
- ▶ A joint frequency distribution
- ▶ **A cumulative frequency distribution (Page 43)**

FINAL TERM EXAMINATION
Fall 2009
STA301- Statistics and Probability

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

$10! = \dots\dots\dots$

- ▶ 362880
- ▶ **3628800**
- ▶ 362280
- ▶ 362800

اس سے پہلے کہ تمہیں شہوت فتنے میں ڈالے نکاح کرو
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Question No: 2 (Marks: 1) - Please choose one

When E is an impossible event, then $P(E)$ is:

- ▶ 2
- ▶ **0 (Page 146) rep**
- ▶ 0.5
- ▶ 1

Question No: 3 (Marks: 1) - Please choose one

The value of χ^2 can never be :

- ▶ Zero
- ▶ Less than 1
- ▶ Greater than 1
- ▶ **Negative (Page 307) rep**

Question No: 4 (Marks: 1) - Please choose one

The curve of the F- distribution depends upon:

- ▶ **Degrees of freedom (Page 312)**
- ▶ Sample size
- ▶ Mean
- ▶ Variance

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Question No: 5 (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: 6 (Marks: 1) - Please choose one

In testing 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: 7 (Marks: 1) - Please choose one

$$\frac{e^{-0.135} 0.135^1}{1!}$$

For the Poisson distribution $P(x) =$ the mean value is :

- ▶ 2
- ▶ 5
- ▶ 10
- ▶ **0.135 (Page 222) rep**

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Question No: 8 (Marks: 1) - Please choose one

When two coins are tossed simultaneously, P (one head) is:

- ▶ $\frac{1}{4}$
- ▶ $\frac{1}{2}$
- ▶ $\frac{3}{4}$
- ▶ 1

Question No: 9 (Marks: 1) - Please choose one

From point estimation, we always get:

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

Question No: 10 (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) rep**
- ▶ Unbiased estimator of μ
- ▶ None of these

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

Var(4X + 5) = _____

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- ▶ 16 Var (X)
- ▶ 16 Var (X) + 5
- ▶ **4 Var (X) + 5 rep**
- ▶ 12 Var (X)

Question No: 12 (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 rep**
- ▶ 0
- ▶ -1
- ▶ ∞

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

The area under a normal curve between 0 and -1.75 is

- ▶ .0401
- ▶ .5500
- ▶ **.4599 (Page 230) rep**
- ▶ .9599

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

When a fair die is rolled, the sample space consists of:

- ▶ 2 outcomes
- ▶ 6 outcomes
- ▶ **36 outcomes (Page 145)**
- ▶ 16 outcomes

Question No: 15 (Marks: 1) - Please choose one

When testing for independence in a contingency table with 3 rows and 4 columns, there are _____ degrees of freedom.

- ▶ 5
- ▶ **6 (Page 341)**
- ▶ 7
- ▶ 12

Question No: 16 (Marks: 1) - Please choose one

The F- test statistic in one-way ANOVA is:

- ▶ SSW / SSE
- ▶ MSW / MSE
- ▶ SSE / SSW
- ▶ **MSE / MSW (Not sure)**

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** rep
- ▶ The standard normal distribution is applied

Question No: 18 (Marks: 1) - Please choose one

A uniform distribution is defined by:

- ▶ **Its largest and smallest value**
- ▶ Smallest value
- ▶ Largest value
- ▶ Mid value

Question No: 19 (Marks: 1) - Please choose one

Which graph is made by plotting the mid point and frequencies?

- ▶ **Frequency polygon (Page 34)**
- ▶ Ogive
- ▶ Histogram
- ▶ Frequency curve

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

In a set of 20 values all the values are 10, what is the value of median?

- ▶ 2
- ▶ 5
- ▶ **10**
- ▶ 20

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ہر چیز کی ایک پہچان ہوتی ہے اور عقلمند کی پہچان غور و فکر کرنا ہے اور غور و فکر کی پہچان خاموشی ہے

FINAL TERM EXAMINATION
Fall 2009
STA301- Statistics and Probability

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

For a particular data the value of Pearson's coefficient of skewness is greater than zero. What will be the shape of distribution?

- ▶ **Negatively skewed**
- ▶ J-shaped
- ▶ Symmetrical
- ▶ **Positively skewed (Page 110)**

Question No: 2 (Marks: 1) - Please choose one

In measures of relative dispersion unit of measurement is:

- ▶ **Changed**
- ▶ **Vanish Rep**
- ▶ Does not changed
- ▶ Dependent

Question No: 3 (Marks: 1) - Please choose one

The F-distribution always ranges from:

- ▶ 0 to 1
- ▶ 0 to $-\infty$
- ▶ $-\infty$ to $+\infty$
- ▶ **0 to $+\infty$ (Page 312) rep**

Question No: 4 (Marks: 1) - Please choose one

In chi-square test of independence the degrees of freedom are:

- ▶ **$n - p$**
- ▶ $n - p - 1$
- ▶ $n - p - 2$
- ▶ $n - 2$

اپنی مرضی اور اللہ کی مرضی میں فرق کا نام غم ہے

Question No: 5 (Marks: 1) - Please choose one

The Chi- Square distribution is continuous distribution ranging from:

- ▶ $-\infty \leq \chi^2 \leq \infty$
- ▶ $-\infty \leq \chi^2 \leq 1$
- ▶ $-\infty \leq \chi^2 \leq 0$
- ▶ $0 \leq \chi^2 \leq \infty$ (Page 307) rep

Question No: 6 (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: 7 (Marks: 1) - Please choose one

If $\hat{y}$ is the predicted value for a given x-value and b is the y-intercept then the equation of a regression line for an independent variable x and a dependent variable y is:

- ▶ $\hat{y} = mx + b$, where m = slope (Page 121) rep
- ▶ $x = \hat{y} + mb$, where m = slope
- ▶ $\hat{y} = x/m + b$, where m = slope
- ▶ $\hat{y} = x + mb$, where m = slope

Question No: 8 (Marks: 1) - Please choose one

The location of the critical region depends upon:

- ▶ Null hypothesis
- ▶ Alternative hypothesis (Page 281) rep
- ▶ Value of alpha
- ▶ Value of test-statistic

وہ لوگ مبارک ہیں جو الفاظ سے نصیحت نہیں کرتے بلکہ عمل سے کرتے ہیں

Question No: 9 (Marks: 1) - Please choose one

The variance of the t-distribution is give by the formula:

▶ $\sigma^2 = \sqrt{\frac{v}{v-2}}$

▶ $\sigma^2 = \frac{v^2}{v-2}$

▶ $\sigma^2 = \frac{v}{v-1}$

▶ $\sigma^2 = \frac{v}{v-2}$ (Page 293)

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

Which one is the correct formula for finding desired sample size?

▶ $n = \left(\frac{Z_{\alpha/2} \cdot \sigma}{e} \right)^2$ (Page 276)

▶ $n = \left(\frac{Z_{\alpha/2} \cdot \sqrt{\sigma}}{e} \right)^2$

▶ $n = \left(\frac{Z_{\alpha/2} \cdot \bar{X}}{e} \right)^2$

▶ $n = \frac{Z_{\alpha/2} \cdot \sigma}{e}$

▶  vulmshelp.com

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

A discrete probability function $f(x)$ is always:

- ▶ Non-negative
- ▶ Negative
- ▶ **One (Page 168) rep**
- ▶ Zero

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

$E(4X + 5) =$ _____

- ▶ $12 E(X)$
- ▶ **$4 E(X) + 5$**
- ▶ $16 E(X) + 5$
- ▶ $16 E(X)$

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

How $P(X + Y < 1)$ can be find:

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

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

$f(x|1) =$

The _____ :

▶ $f(1,1)$

▶ $f(x,1)$

▶ $\frac{f(x,1)}{h(1)}$

(Page 198) rep

▶ $\frac{f(x,1)}{h(x)}$

▶

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ہر کسی کی روٹی نہ کھا بلکہ ہر شخص کو اپنی روٹی کھلا

Question No: 15 (Marks: 1) - Please choose one

The area under a normal curve between 0 and -1.75 is

- ▶ .0401
- ▶ .5500
- ▶ **.4599 (Page 230) rep**
- ▶ .9599

Question No: 16 (Marks: 1) - Please choose one

In normal distribution M.D. =

- ▶ 0.5σ
- ▶ 0.75σ
- ▶ 0.7979σ rep
- ▶ 0.6445σ

Question No: 17 (Marks: 1) - Please choose one

In an ANOVA test there are 5 observations in each of three treatments. The degrees of freedom in the numerator and denominator respectively are.....

- ▶ 2, 4
- ▶ 3, 15
- ▶ 3, 12
- ▶ **2, 12**

Question No: 18 (Marks: 1) - Please choose one

A set that contains all possible outcomes of a system is known as

- ▶ Finite Set
- ▶ Infinite Set
- ▶ **Universal Set (Page 134)**
- ▶ No of these

Question No: 19 (Marks: 1) - Please choose one

Stem and leaf is more informative when data is :

- ▶ Equal to 100
- ▶ Greater Than 100
- ▶ **Less than 100** rep
- ▶ In all situations

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فرقہ بندی ہی ہماری قوم کا زوال کا باعث ہے

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

A population that can be defined as the aggregate of all the conceivable ways in which a specified event can happen is known as:

- ▶ Infinite population
- ▶ Finite population
- ▶ Concrete population
- ▶ **Hypothetical population (Page 12)**

STA 301 – Quizzes

Question # 1 of 10 (Total Marks: 1) Select correct option:

The number of telephone calls that pass through a switchboard has a Poisson distribution with mean equal to 2 per minute. The probability that no telephone calls pass through the switchboard in two consecutive minutes is:

- 0.2707
- 0.0517
- 0.0183**
- 0.0366

Question # 2 of 10 (Total Marks: 1) Select correct option:

The range of the binomial distribution is:

0, 1, 2, ... , 100

0, 1, 2, ... , n

0, 1, 2, ... , x

1, 2, ... , n

Question # 3 of 10 (Total Marks: 1) Select correct option:

Which of the following is NOT CORRECT about a standard normal distribution?

$P(0 \leq Z \leq 1.50) = .4332$

$P(Z \geq 2.0) = .0228$

$P(Z \geq -2.5) = .4938$ (Page 230)

$P(Z \leq -1.0) = .1587$

دنیا حقیر نظر آتی ہے، جب غم یا خوشی کی انتہاء ہو جائے

Question # 4 of 10 (Total Marks: 1) Select correct option:

The distribution function (df) is also known as cumulative distribution function (cdf).

Yes (Page 173)

No

Question # 5 of 10 (Total Marks: 1) Select correct option:

Which of the following pairs of events are mutually exclusive?

A:the numbers above 100; B: the numbers less than -200

A:the odd numbers; B:the number 5

A:the even numbers; B:the numbers greater than 10

A:the numbers less than 5; B:all the negative numbers

Question # 6 of 10 (Total Marks: 1) Select correct option:

Two events A & B are said to be independent if...

$P(A) + P(B)$

$P(B/A) = P(B)$

$P(A) * P(B)$ (Page 162)

$P(A/B) = P(A)$

Question # 7 of 10 (Total Marks: 1) Select correct option:

The collection of all outcomes for an experiment is called:

A sample space

Joint probability simple event

The intersection of events

Random experiment

Question # 8 of 10 (Total Marks: 1) Select correct option:

Symbolically, a conditional probability is:

$P(AB)$

$P(A/B)$ (Page 159)

$P(A)$

$P(A \cup B)$

Question # 9 of 10 (Total Marks: 1) Select correct option:

Which of the following statements is INCORRECT about the sampling distribution of the sample mean?

The standard error of the sample mean will decrease as the sample size increases

The standard error of the sample mean is measure of the variability of the sample mean among repeated samples

The sample mean is unbiased for the true (unknown) population mean

The sampling distribution shows how the sample was distributed around the sample mean

Question # 10 of 10 (Total Marks: 1) Select correct option:

If one event is unaffected by the outcome of another event the two events are said to be:

1. Dependent
2. Not Mutually Exclusive
3. Mutually Exclusive

Independent

Question # 1 of 10 (Total Marks: 1) Select correct option:

Let X be a random variable with binomial distribution, that is ($X=0,1,\dots, n$). The expected value $E[X]$ is

p

np (Page 214)

$np(1-p)$

Xnp

Question # 2 of 10 (Total Marks: 1) Select correct option:

The sample mean is an unbiased estimator for the population mean. This means:

The sample mean has a normal distribution

The average sample mean, over all possible samples, equals the population mean (Page 259)

The sample mean is always very close to the population mean

The sample mean will only vary a little from the population mean

Question # 4 of 10 (Total Marks: 1) Select correct option:

Probability of an impossible event is always:

Less than one

Greater than one

Between one and zero

Zero (Page 146)

Question # 5 of 10 (Total Marks: 1) Select correct option:

The function abbreviated to d.f. is also called the.....

Probability density function

Probability distribution function

Commutative distribution function (Page 173)

Discrete function

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Question # 6 of 10 (Total Marks: 1) Select correct option:

The total area under the normal curve is:

0

1 (Page 186)

0.5

0.75

Question # 7 of 10 (Total Marks: 1) Select correct option:

Two events A & B are said to be independent if...

$P(A) + P(B)$

$P(B|A) = P(B)$

$P(A) * P(B)$ (Page 162) rep

$P(A|B) = P(A)$

Question # 8 of 10 (Total Marks: 1) Select correct option:

When two coins are tossed the probability of at most one head is:

1/4

2/4

3/4 rep

1

Question # 9 of 10 (Total Marks: 1) Select correct option:

For exhaustive events, the $P(A \cup B \cup C)$ is equal to:

$P(A)$

$P(S)$ (Page 147)

$P(A) * P(B) * P(C)$

$P(B)$

Question # 10 of 10 (Total Marks: 1) Select correct option:

One card is drawn from a standard 52 card deck. In describing the occurrence of two possible events, an Ace and a King, these two events are said to be:

Select correct option:

independent

randomly independent

random variables

mutually exclusive

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STA 301 – Quizzes

Question # 1 of 10 (Total Marks: 1) Select correct option:

The number of parameters in hypergeometric distribution is (are):

1

2

3 (Page 219)

4

Question # 2 of 10 (Total Marks: 1) Select correct option:

If $Y=bX$, then variance of Y is

$b^2 \text{ var}(x)$

$\text{var}(x)$

$b \text{ var}(x)$

$b \text{ square root var}(x)$

Question # 3 of 10 (Total Marks: 1) Select correct option:

If $f(x)$ is a continuous probability function, then $P(X = 2)$ is:

1

0 (Page 186)

$1/2$

2

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Question # 4 of 10 (Total Marks: 1) Select correct option:

In regression line $Y=a+bX$, Y is called:

Dependent variable (Page 121)

Independent variable

Explanatory variable

Regressor

پہلے وقتوں میں تعلیم کم تھی اور علم زیادہ، آج کل علم کم ہے اور تعلیم زیادہ

Question # 5 of 10 (Total Marks: 1) Select correct option:

If A and B are mutually exclusive events with $P(A) = 0.25$ and $P(B) = 0.50$, Then $P(A \text{ or } B) = \dots\dots\dots$

0.25

0.75 (Page 154)

0.50

1

Question # 6 of 10 (Total Marks: 1) Select correct option:

In a 52 well shuffled pack of 52 playing cards, the probability of drawing any one diamond card is

1/52

4/52

13/52

52/52

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Question # 7 of 10 (Total Marks: 1) Select correct option:

Probability of a sure event is

8

1 (Page 154)

0

0.5

Question # 8 of 10 (Total Marks: 1) Select correct option:

If $Y = 3X + 5$, then S.D of Y is equal to

9 s.d(x)

3 s.d(x)

s.d(x)+5

3s.d(x)+5

Question # 9 of 10 (Total Marks: 1) Select correct option:

The probability of drawing a red queen card from well-shuffled pack of 52 playing cards is

4/52

2/52

13/52

26/52

Question # 10 of 10 (Total Marks: 1) Select correct option:

If $P(B|A) = 0.25$ and $P(A \text{ and } B) = 0.20$, then $P(A)$ is

0.05

0.80 (Page 159)

0.95

0.75

Question # 1 of 10 (Total Marks: 1) Select correct option:

A student solved 25 questions from first 50 questions of a book to be solved. The probability that he will solve the remaining all questions is:

0.25

0.5

1

0

Question # 1 of 10 (Total Marks: 1) Select correct option:

The classical definition of probability assumes:

Exhaustive events

Mutually exclusive events

Equally likely events (Page 151)

Independent events

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Question # 2 of 10 (Total Marks: 1) Select correct option:

In scatter diagram, the variable plotted along Y-axis is:

Independent variable

Dependent variable

Continuous variable

Discrete variable

Question # 3 of 10 (Total Marks: 1) Select correct option:

Which of the following measures of dispersion are based on deviations from the mean?

Variance

Standard deviation

Mean deviation

All of the these

Question # 4 of 10 (Total Marks: 1) Select correct option:

What does it mean when a data set has a standard deviation equal to zero?

All values of the data appear with the same frequency.

The mean of the data is also zero.

All of the data have the same value.

There are no data to begin with.

Question # 5 of 10 (Total Marks: 1) Select correct option:

A set of possible values that a random variable can assume and their associated probabilities of occurrence are referred to as _____.

Probability distribution

The expected return

The standard deviation

Coefficient of variation

Question # 6 of 10 (Total Marks: 1) Select correct option:

Which of the following can never be probability of an event?

0

1

0.5

-0.5

Question # 7 of 10 (Total Marks: 1) Select correct option:

The standard deviation of -1, -1, -1, -1 will be

1

-1

0

Does not exist

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Question # 8 of 10 (Total Marks: 1) Select correct option:

The Special Rule of Addition is used to combine:

Independent Events

Mutually Exclusive Events

Events that total more than 1.00

Events based on subjective probabilities

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Question # 9 of 10 (Total Marks: 1) Select correct option:
set which is the sub-set of every set is

Empty Set (Page 134)

Power Set

Universal Set

Super Set

Question # 10 of 10 (Total Marks: 1) Select correct option:
When two dice are rolled the number of possible sample points is :

6

12

24

36 (Page 145)

Question # 1 of 10 (Total Marks: 1) Select correct option:
If two events A and B are not mutually exclusive then

$P(A \text{ or } B) = P(A) + P(B) - P(A \text{ and } B)$ (Page 157)

$P(A \text{ or } B) = P(A) + P(B)$

$P(A \text{ or } B) = P(A) \times P(B)$

$P(A \text{ or } B) = P(A) + P(B)$

Question # 2 of 10 (Total Marks: 1) Select correct option:
Evaluate $(10-4)!$

1000

720

480

32

Question # 3 of 10 (Total Marks: 1) Select correct option:
When we toss a coin , we get only:

1 outcome

2 outcome

3 outcome

4 outcome

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Question # 4 of 10 (Total Marks: 1) Select correct option:

If we roll a die then probability of getting a '6' will be

2/6

1/6

4/6

1

Question # 5 of 10 (Total Marks: 1) Select correct option:

If $P(A) = 0.45$, $P(B) = 0.35$, and $P(A \text{ and } B) = 0.25$, then $P(A | B)$ is:

1.4

1.8

0.714 $0.25/0.35 = 0.714$ (Page 159)

0.556

Question # 6 of 10 (Total Marks: 1) Select correct option:

Which of the following is not a measure of central tendency?

Percentile

Quartile

Standard deviation

Mode

Question # 7 of 10 (Total Marks: 1) Select correct option:

Random experiment can be repeated any no. of times under the..... conditions.

Different

Similar (Page 144)

Question # 9 of 10 (Total Marks: 1) Select correct option:

The simultaneous occurrence of two events is called:

Joint probability (Page 194)

Subjective probability

Prior probability

Conditional probability

Question # 10 of 10 (Total Marks: 1) Select correct option:

In regression analysis, the variable that is being predicted is the

Dependent variable

Independent variable

Intervening variable

None of these

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Question # 1 of 10 (Total Marks: 1) Select correct option:

The probability of continuous random variable x on any particular point is always zero..

Yes (Page 186)

No

Question # 2 of 10 (Total Marks: 1) Select correct option:

$P(\text{an event}) = \text{no of favorable outcome} / \text{total no. of outcomes}$ is the definition of

Subjective approach (Page 149)

Objective approach

Question # 3 of 10 (Total Marks: 1) Select correct option:

If C is a constant, then $E(c) =$

0

1

C (Page 180) rep

$-c$

Question # 4 of 10 (Total Marks: 1) Select correct option:

When we toss a fair coin 4 times, the sample space consists of...points.

4

8

12

16

Question # 5 of 10 (Total Marks: 1) Select correct option:

If we roll three fair dices then the total number of outcomes is:

6

36

216 $6*6*6=216$

1296

Question # 6 of 10 (Total Marks: 1) Select correct option:

The probability of an event is always:

greater than 0

less than 1

between 0 and 1

greater than 1

Question # 7 of 10 (Total Marks: 1) Select correct option:

In a multiplication theorem $P(A \text{ and } B)$ equals:

$P(A)$

$P(B) P(A) + P(B)$

$P(A) * P(B|A)$ (Page 159)

$P(B \setminus A) * P(B)$

Question # 8 of 10 (Total Marks: 1) Select correct option:

If a die is rolled, what is the probability of getting an even number greater than 2?

1/2

1/3 2/6 = 1/3

2/3

5/6

Question # 9 of 10 (Total Marks: 1) Select correct option:

In a Discrete probability distribution, $P(x > 23)$ is read as:

P (there are more than 23 successes)

P (there are less than 23 successes)

P (there are at least 23 successes)

P (there are at most 23 successes)

Question # 10 of 10 (Total Marks: 1) Select correct option:

A dormitory on campus houses 200 students. 120 are male, 50 are upper division students, and 40 are upper division male students. A student is selected at random. The probability of selecting a lower division student, given the student is a female, is:

7/8

7/20

7/15

1/4

Question # 1 of 10 (Total Marks: 1) Select correct option:

The function $F(x)$ gives the probability of the event that X takes a value

Less than x

Greater or equal to x

Less or equal x (Page 173)

Equal to x

Question # 2 of 10 (Total Marks: 1) Select correct option:

In a simple regression line model, it is assumed that the intercept parameter is equal to zero,

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 zero.

Question # 3 of 10 (Total Marks: 1) Select correct option:

If $p(A \cap B) = p(A/B) \cdot p(B)$, then A and B are

Independent

Dependant

Equally likely

Mutually exclusively

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Question # 4 of 10 (Total Marks: 1) Select correct option:

A fair coin is tossed three times, the probability that at least one head appears,

1/8

7/8 (HHH,HHT,HTH, HTT, THH THT TTH TTT)

3/8

5/8

Question # 5 of 10 (Total Marks: 1) Select correct option:

In probability distribution, the sum of probabilities is equals to

0

0.1

0.5

1

Question # 6 of 10 (Total Marks: 1) Select correct option:

When a coin is tossed 3 times, the probability of getting 3 tails is

1/8 (HHH,HHT,HTH, HTT, THH THT TTH TTT)

3/8

3/6

2/8

Question # 7 of 10 (Total Marks: 1) Select correct option:

In how many ways can a team of 11 players be chosen from a total of 16 players?

4368

2426

5400

2680

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Question # 8 of 10 (Total Marks: 1) Select correct option:

The standard deviation of c (constant) is

c

c square

0

does not exist

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Question # 9 of 10 (Total Marks: 1) Select correct option:

Let E and F be events associated with the same experiment. Suppose the E and F are independent and that $P(E) = 1/4$ and $P(F) = 1/2$ Then $P(E \cup F)$ is:

1/8

3/4 (Page 157)

7/8

5/8

STA 301 – Quizzes

Question # 1 of 10 (Total Marks: 1) Select correct option:

In which of the following situations binomial distributions is approximate to normal distribution?

$n = 50, p = 0.01$

$n = 500, p = 0.001$

$n = 100, p = 0.05$

$n = 50, p = 0.02$

Question # 2 of 10 (Total Marks: 1) Select correct option:

The location and shape of the normal curve is (are) determined by:

Mean

Variance

Mean & variance

Mean & standard deviation

Question # 3 of 10 (Total Marks: 1) Select correct option:

A random experiment has five outcomes in its sample space $\{s_1, s_2, s_3, s_4, s_5\}$. If $P(s_1)=0.2, P(s_2)=0.3, P(s_3)=0.1$ and $P(s_4)=0.2$ then $P(s_5)=?$

1

0.2

0.8

0.5

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Question # 4 of 10 (Total Marks: 1) Select correct option:

The joint density function $f(x,y)$ will be a pdf if

Both of integrals $\int f(x,y) dx dy = 1$ (Page 200)

Both of integrals $\int f(x,y) dx dy > 1$

Both of integrals $\int f(x,y) dx dy < 1$

Both of integrals $\int f(x,y) dx dy = 0$

Question # 5 of 10 (Total Marks: 1) Select correct option:

Which of the following is correct property for joint probability distribution of X and Y:

$\sum f(X,Y) = 1$ (Page 194)

$\sum f(Y,X) = 1$

Both of above

None of above

Question # 6 of 10 (Total Marks: 1) Select correct option:

A random variable that can assume every possible value in an interval $[a, b]$:

Discrete variable

Continuous variable (Page 9)

Qualitative variable

Categorical variable

Question # 7 of 10 (Total Marks: 1) Select correct option:

Normal approximation to the binomial distribution is used when:

$np > 5$

$nq > 5$

Both of the above (Page 235)

None of the above

Question # 8 of 10 (Total Marks: 1) Select correct option:

The Maximum Likelihood Estimators (MLE) are and but not necessarily

Unbiased, consistent, efficient

Consistent, unbiased, efficient

Unbiased, efficient, consistent

Consistent, efficient, unbiased (Page 264)

کتنا شریف ہے وہ غمزدہ دل جو سب کو خوش کرنے کی کوشش کرتا ہے

Question # 9 of 10 (Total Marks: 1) Select correct option:

A probability density function 'f(x)' has the following property:

$f(x) \leq 0$

$f(x) < 0$

$f(x) > 0$ (Page 186)

$f(x) \geq 0$

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Question # 10 of 10 (Total Marks: 1) Select correct option:

For a continuous random variable X, $P(X = x)$ is:

Select correct option:

0 (Page 186)

0.5

1

undefined

Question # 1 of 10 (Total Marks: 1) Select correct option:

An urn contains 4 red balls and 6 green balls. A sample of 4 balls is selected from the urn without replacement. It is the example of:

Binomial distribution

Hypergeometric distribution (Page 219)

Poisson distribution

Exponential distribution

Question # 2 of 10 (Total Marks: 1) Select correct option:

The probability distribution of the proportion of successes in all possible samples is called the:

Sampling distribution (Page 237)

Sampling probability distribution

Sampling distribution of sample proportions

Sampling distribution of Population proportions

Question # 3 of 10 (Total Marks: 1) Select correct option:

For good approximation of Poisson distribution to the binomial distribution, which of the following condition (s) is/are required:

The population size is large relative to the sample size

The probability, p, is close to .5 and the population size is large

The probability, p, is small and the sample size is large (Page 222)

The probability, p, is close to .5 and the sample size is large

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Question # 4 of 10 (Total Marks: 1) Select correct option:

If an estimator is more efficient than the other estimator, its shape of the sampling distribution will be

Flattered

Normal

Highly peaked (Page 261)

Skewed to right

Question # 6 of 10 (Total Marks: 1) Select correct option:

Match the binomial probability $P(x < 23)$ with the correct statement.

$P(\text{there are at most 23 successes})$

$P(\text{there are fewer than 23 successes})$

$P(\text{there are more than 23 successes})$

$P(\text{there are at least 23 successes})$

Question # 7 of 10 (Total Marks: 1) Select correct option:

In statistics, the term 'expected value' implies the ____ value.

Independent

Normal

Standard

Mean (Page 191)

Question # 8 of 10 (Total Marks: 1) Select correct option:

A quantity obtained by applying certain rule or formula is known as

Estimate (Page 264)

Estimator

Parameter

Proportion

Question # 9 of 10 (Total Marks: 1) Select correct option:

Total no. of possible samples of size 2 (without replacement) from the population of size 6, will be:

20

15

10

18

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Question # 10 of 10 (Total Marks: 1) Select correct option:

When a coin is tossed 3 times, the probability of getting 3 or less tails is

1/2 (not sure)

0

1

3/5

Question # 1 of 10 (Total Marks: 1) Select correct option:

Total no. of possible samples of size 3 (with replacement) from the population of size 6, will be:

256

196

216 **6^3**

325

Question # 2 of 10 (Total Marks: 1) Select correct option:

Using the normal approximation to the binomial distribution with $n = 3$ and $p = 0.0571$ the value of mean is:

0.1713 **(Page 235)**

0.2132

0.5133

0.1923

Question # 3 of 10 (Total Marks: 1) Select correct option:

Suppose 60% of a herd of cattle is infected with a particular disease. Let Y = the number of non-diseased cattle in a sample of size 5. the distribution of Y is:

Binomial with $n = 5$ and $p = 0.6$

Binomial with $n = 5$ and $p = 0.4$

Binomial with $n = 5$ and $p = 0.5$

Poisson with $u = .6$

Question # 4 of 10 (Total Marks: 1) Select correct option:

The probability of success changes from trial to trial, is the property of:

Binomial experiment (Page 211)

Hypergeometric experiment

Both binomial & hypergeometric experiment

Poisson experiment

Question # 5 of 10 (Total Marks: 1) Select correct option:

If a statistic used as an estimator, has its expected value equal to the true value of the population parameter being estimated then it is called.....

Consistent

Unbiased (Page 258)

Efficient

Sufficient

Question # 6 of 10 (Total Marks: 1) Select correct option:

In moments method, how many equations are needed to find the 2 unknown parameters?

2 (Page 263)

3

n/2

Question # 7 of 10 (Total Marks: 1) Select correct option:

Which of the following is desirable for a good point estimator?

Consistency

Unbiasedness

Efficiency

All of these (Page 258)

Question # 8 of 10 (Total Marks: 1) Select correct option:

The distribution function (df) is also known as

Probability distribution

Probability mass function

Probability density function

Cumulative distribution function (Page 173)

Question # 9 of 10 (Total Marks: 1) Select correct option:

If X and Y are two discrete r.v's with joint probability function $f(x,y)$, then the conditional probability function Y given X, $f(y|x)$ is given by

$f(y_j | x_i) = f(x_i, y_j) / g(x_i)$ (Page 195)

$f(y_j | x_i) = f(x_i, y_j) / h(y_j)$

$f(y_j | x_i) = f(x_i, y_j) / \text{Sum of } g(x_i)$

$f(y_j | x_i) = f(x_i, y_j) / \text{sum of } h(y_j)$

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Question # 1 of 10 (Total Marks: 1) Select correct option:

Which of the probability distributions has three parameters?

Binomial distribution

Normal distribution

Hypergeometric distribution (Page 219)

Poisson distribution

Question # 2 of 10 (Total Marks: 1) Select correct option:

A standard deviation obtained from sampling distribution of sample statistics is known as

Sampling error

Standard error (Page 240)

Minimum error

Universal error

Question # 3 of 10 (Total Marks: 1) Select correct option:

A parameter is a quantity.

Constant

Variable

Sample

Random

Question # 4 of 10 (Total Marks: 1) Select correct option:

How can you define statistical inference?

A decision, estimate, prediction or generalization about the population based on information contained in a sample

A statement made about a sample based on the measurements in that sample

A set of data selected from a larger set of data

A decision, estimate, prediction or generalization about sample based on information contained in a population

Question # 5 of 10 (Total Marks: 1) Select correct option:

Which of the following is most important and most widely used method in point estimation?

The method of moments

The method of fractional moments

The method of least square (Page 263)

The method of maximum likelihood

Question # 6 of 10 (Total Marks: 1) Select correct option:

Binomial distribution is skewed to the right if:

$p=q$

$p < q$ (Page 215)

$p > q$

$p=n$

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Question # 7 of 10 (Total Marks: 1) Select correct option:

In a discrete distribution function, $F(23)$ can be stated as:

P (there are at most 23 successes)

P (there are at least 23 successes)

P (there are less than 23 successes)

P (there are more than 23 successes)

Question # 8 of 10 (Total Marks: 1) Select correct option:

The Probabilities of the various values of the sample statistic can be computed using the..... definition of probability.

Subjective

Objective

Classical (Page 149)

None of the above

Question # 9 of 10 (Total Marks: 1) Select correct option:

$E(10X + 3) =$ _____

$10 E(X)$

$E(X)+3$

$10 E(X)+3$

$100E(X)$

Question # 10 of 10 (Total Marks: 1) Select correct option:

If p is very small and n is considerably large then we shall apply the:

Binomial distribution

Hypergeometric distribution

Poisson distribution (Page 222)

Exponential distribution

Question # 1 of 10 (Total Marks: 1) Select correct option:

Which of the following is NOT applicable to a Poisson distribution?

IF $P = 0.5$ & $n = 19$

IF $P = 0.01$ & $n = 200$

IF $P = 0.02$ & $n = 300$

IF $P = 0.03$ & $n = 500$

Question # 2 of 10 (Total Marks: 1) Select correct option:

The normal distribution has points of infection which are equidistance from the:

Median

Mean (Page 229)

Mode

Mean, Median & Mode

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Question # 3 of 10 (Total Marks: 1) Select correct option:

If a random variable X denotes the number of heads when we toss a fair coin 5 times, the X assumed the values:

0,1,2,3

1, 2,3,4,5

0, 1, 2,3,4,5

1, 5, 5

Question # 4 of 10 (Total Marks: 1) Select correct option:

As a rule of thumb, when $n \geq 30$, then we can assume that.....is normally distributed:

Probability distribution

Sampling distribution (Page 243)

Binomial distribution

Sampling distribution of sample mean

Question # 5 of 10 (Total Marks: 1) Select correct option:

If $b(x, 7, 0.30)$, the variance of this distribution is:

1.77

1.74

1.44

1.47 (Page 333)

Question # 6 of 10 (Total Marks: 1) Select correct option:

Which of the following is a characteristic of a binomial probability experiment?

Each trial has more than two possible outcomes

$P(\text{success}) = P(\text{failure})$

Probability of success changes for each trail

The result of one trial does not affect the probability of success on any other trial (Page 211)

Question # 7 of 10 (Total Marks: 1) Select correct option:

The number of parameters in uniform distribution is (are):

1

2 (Page 225)

3

4

Question # 8 of 10 (Total Marks: 1) Select correct option:

The probability can never be:

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1

1/2

1

-1/2

Question # 9 of 10 (Total Marks: 1) Select correct option:

The conditional probability $P(A|B)$ is:

$P(A \cap B)/P(B)$ (Page 159)

$P(A \cap B)/P(A)$

$P(A \cup B)/P(B)$

$P(A \cup B)/P(A)$

Question # 10 of 10 (Total Marks: 1) Select correct option:

A random sample of $n=25$ values gives sample mean 83. Can this sample be regarded as drawn from a normal population with $\mu=80$ and $s=7$? In this question the alternative hypothesis will be:

$H_1: \mu = 80$

$H_1: \mu \neq 80$

$H_1: \mu > 80$

$H_1: \mu < 80$

Question # 1 of 10 (Total Marks: 1) Select correct option:

The binomial distribution is negatively skewed when:

$p > q$ (Page 215)

$p < q$

$p = q$

$p = q = 1/2$

Question # 2 of 10 (Total Marks: 1) Select correct option:

When we draw the sample with replacement, the probability distribution to be used is:

Binomial

Hypergeometric

Binomial & hypergeometric

Poisson

Question # 3 of 10 (Total Marks: 1) Select correct option:

The moment ratios of normal distribution come out to be:

0 and 1

0 and 2

0 and 3 (Page 227)

0 and 4

Question # 4 of 10 (Total Marks: 1) Select correct option:

Suppose the test scores of 600 students are normally distributed with a mean of 76 and standard deviation of 8.

The number of students scoring between 70 and 82 is:

272

164

260

328

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Question # 5 of 10 (Total Marks: 1) Select correct option:

If $P(A) = 0.3$ and $P(B) = 0.5$, find $P(A/B)$ where 'A' and 'B' are independent:

0.3

0.5

0.8

0.15 (Page 162)

Question # 6 of 10 (Total Marks: 1) Select correct option:

If the second moment ratio is less than 3 the distribution will be:

Mesokurtic

Leptokurtic

Platykurtic

None of these

Question # 7 of 10 (Total Marks: 1) Select correct option:

For the independent events A and B if $P(A) = 0.25$, $P(B) = 0.40$ then $P(A \text{ and } B) = \dots\dots$

Select correct option:

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0.65

0.1 (Page 162)

0.50

0.15

Question # 8 of 10 (Total Marks: 1) Select correct option:

A random variable X has a probability distribution as follows: $X \mid 0 \ 1 \ 2 \ 3 \ P(X) \mid 2k \ 3k \ 13k \ 2k$ What is the possible value of k:

0.01

0.03

0.05

0.07

Question # 9 of 10 (Total Marks: 1) Select correct option:

The probability of drawing any one spade card is:

1/52

4/52

13/52

52/52

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