



ST. LAWRENCE HIGH SCHOOL

27, BALLYGUNGE CIRCULAR ROAD

**Class : 12****Subject : STATISTICS****Term : FIRST TERM****Max Marks : 60****Q 1 :** In a scatter diagram there are two points as (10,20) and (15,19), then the correlation coefficient is**Marks : 1**

1 . 1

2 . -1

3 . 3

4 . none of these

 (This Answer is Correct)**Q 2 :** For the equation $2x + 3y = 12$, correlation coefficient is**Marks : 1**

1 . 0

2 . 1

3 . -1

4 . none of these

 (This Answer is Correct)**Q 3 :** For two linearly independent variables the number of regression lines can be obtained, is**Marks : 1**

1 . 1

2 . 2

3 . 3

4 . none of these

 (This Answer is Correct)**Q 4 :** When two regression lines coincide then the correlation coefficient is**Marks : 1**

1 . 0

2 . 2

3 . 3

4 . none of these

 (This Answer is Correct)**Q 5 :** The correlation coefficient of x and y is 0.12, with respective standard deviations 2 and 3, then the value of regression coefficient of y on x is**Marks : 1**

1 . 0.06

2 . 0.18

3 . 0.08

4 . none of these

 (This Answer is Correct)

Q 6 : The slope of the regression line x on y is

Marks : 1

- 1 . $1/bxy$
- 2 . byx
- 3 . bxy
- 4 . none of these

(This Answer is Correct)

Q 7 : The difference between the ranks given by two different judges for n candidates, then for perfect agreement is

Marks : 1

- 1 . n
- 2 . $n+1$
- 3 . $n-1$
- 4 . none of these

(This Answer is Correct)

Q 8 : The mean of the ranks given by the second judge for $2n$ candidates is

Marks : 1

- 1 . $n+1$
- 2 . $n(2n+1)$
- 3 . $2n(n+1)$
- 4 . none of these

(This Answer is Correct)

Q 9 : If all values of a random variable are equal, then the variance will also be equal to

Marks : 1

- 1 . that value
- 2 . 1
- 3 . 0
- 4 . none of these

(This Answer is Correct)

Q 10 : All odd-ordered central moments are zero for a distribution which is

Marks : 1

- 1 . positively skewed
- 2 . negatively skewed
- 3 . symmetric
- 4 . none of these

(This Answer is Correct)

Q 11 : If X and Y be two independent random variables with variances are 9 and 16 respectively, then, $V(X-Y)$ is

Marks : 1

- 1 . 0
- 2 . 5
- 3 . 4

(This Answer is Correct)

4 . none of these

Q 12 : If $V(X) = 4$, then $V(3 - 5X)$ is

Marks : 1

1 . 100

(This Answer is Correct)

2 . 125

3 . 0

4 . none of these

Q 13 : A random variable X has two values 0 and 1, with $P(x=1) = 1/3$, then $E(X)$ is

Marks : 1

1 . $1+3$

(This Answer is Correct)

2 . $1+3$

3 . 1

4 . none of these

Q 14 : Binomial distribution is used for the random variable which is

Marks : 1

1 . discrete

(This Answer is Correct)

2 . continuous

3 . both

4 . none of these

Q 15 : In each trial of binomial distribution , no of outcomes is

Marks : 1

1 . 1

2 . 2

(This Answer is Correct)

3 . 3

4 . none of these

Q 16 : Binomial distribution tends to Poisson distribution when p is too

Marks : 1

1 . small

(This Answer is Correct)

2 . large

3 . 0.5

4 . none of these

Q 17 : X follows bin $(8,p)$ and y follows Poisson(5) independently, then covariance between X and Y is

Marks : 1

1 . 0

(This Answer is Correct)

2 . 0.5

3 . -0.5

4 . none of these

Q 18 : If for a random variable X follows Poisson(m), then $E(X-E(X))$ is equal to

Marks : 1

1 . 0

(This Answer is Correct)

2 . 1

3 . 0.5

4 . none of these

Q 19 : In case of Poisson distribution the trials are

Marks : 1

1 . countable

(This Answer is Correct)

2 . uncountable

3 . semi countable

4 . none of these

Q 20 : The third order central moment of Poisson (6) is

Marks : 1

1 . 4

2 . 3

3 . 6

(This Answer is Correct)

4 . none of these

Q 21 : A symmetric binomial distribution will be

Marks : 1

1 . mesokurtic

2 . leptokurtic

3 . platykurtic

(This Answer is Correct)

4 . none of these

Q 22 : A normal distribution is symmetric about the

Marks : 1

1 . mean

2 . median

3 . both mean and median

(This Answer is Correct)

4 . none of these

Q 23 : A statistic is function of all the members of a

Marks : 1

1 . population

2 . sample

(This Answer is Correct)

3 . both population and sample

4 . none of these

Q 24 : If X is a symmetric binomial variable with $n=36$, then sd of x is

Marks : 1

1 . 3

2 . 4

3 . 9

(This Answer is Correct)

4 . none of these

Q 25 : For a binomial variable $(n+1)p$ is an integer then it is

Marks : 1

1 . unimodal

2 . bimodal

(This Answer is Correct)

3 . trimodal

4 . none of these

Q 26 : Skewness of an uniform distribution is

Marks : 1

1 . -1

2 . 0

(This Answer is Correct)

3 . 1

4 . none of these

Q 27 : For which value of the parameter mean and standard deviation are equal for a Poisson distribution

Marks : 1

1 . 0

2 . 1

(This Answer is Correct)

3 . 2

4 . none of these

Q 28 : For regression lines $x + y = 3$ and $2x + 4y = 10$ then mean of x is

Marks : 1

1 . 0

2 . 1

(This Answer is Correct)

3 . 2

4 . none of these

Q 29 : The regression coefficient of x and y is 0.12 and that of y on x is 0.03, then the correlation coefficient is

Marks : 1

1 . 0.06

(This Answer is Correct)

2 . 0.18

3 . 0.08

4 . none of these

Q 30 : If Z be a standard normal variate then $P(Z > 0)$ is

Marks : 1

1 . 0.2

2 . 0.5

(This Answer is Correct)

3 . 1

4 . none of these

Q 31 : Spearman rank correlation formula gives the correlation between the

Marks : 1

1 . marks

2 . grades

3 . ranks

(This Answer is Correct)

4 . none of these

Q 32 : The values of a random variable are always positive real numbers.

Marks : 1

1 . a positive real number

(This Answer is Correct)

2 . a negative real number

3 . zero

4 . none of these

Q 33 : Expectation of a negative random variable is

Marks : 1

1 . positive

2 . negative

(This Answer is Correct)

3 . zero

4 . none of these

Q 34 : Standard deviation of a negative random variable is

Marks : 1

1 . positive

(This Answer is Correct)

2 . negative

3 . zero

4 . none of these

Q 35 : Expectation of a discrete random variable assuming integral values must be

Marks : 1

- 1 . integer
- 2 . non integer
- 3 . rational**
- 4 . none of these

(This Answer is Correct)

Q 36 : For a random variable X, the first order central moment is always

Marks : 1

- 1 . 0**
- 2 . -1
- 3 . 1
- 4 . none of these

(This Answer is Correct)

Q 37 : The variance of a standard random variable is

Marks : 1

- 1 . 0
- 2 . 1**
- 3 . 2
- 4 . none of these

(This Answer is Correct)

Q 38 : The range of binomial distribution $\text{Bin}(n, p)$ is

Marks : 1

- 1 . $1(1)n$
- 2 . $1(2)n$
- 3 . $0(1)n$**
- 4 . none of these

(This Answer is Correct)

Q 39 : The trials in binomial distribution are

Marks : 1

- 1 . finite
- 2 . countable
- 3 . countably finite**
- 4 . none of these

(This Answer is Correct)

Q 40 : The expectation in Poisson distribution (3) is

Marks : 1

- 1 . 3**
- 2 . 4
- 3 . 6
- 4 . none of these

(This Answer is Correct)

Q 41 : The variance in Poisson distribution (λ) is

Marks : 1

- 1 . 2
- 2 . 3
- 3 . 2.5
- 4 . none of these

(This Answer is Correct)

Q 42 : If a random variable X defines the number of misprints per page of a book, then X follows

Marks : 1

- 1 . Binomial
- 2 . Poisson
- 3 . Uniform
- 4 . none of these

(This Answer is Correct)

Q 43 : The probability distribution which has mean equal to variance is

Marks : 1

- 1 . Binomial
- 2 . Poisson
- 3 . Uniform
- 4 . none of these

(This Answer is Correct)

Q 44 : The ratio between the quartile deviation and standard deviation of a normal variable is

Marks : 1

- 1 . 67:100
- 2 . 68:100
- 3 . 100:67
- 4 . none of these

(This Answer is Correct)

Q 45 : For a continuous random variable X, the first order central moment is always

Marks : 1

- 1 . 0
- 2 . 1
- 3 . -1
- 4 . none of these

(This Answer is Correct)

Q 46 : The fifth order central moment of an uniform distribution is

Marks : 1

- 1 . -1
- 2 . 0
- 3 . 1
- 4 . none of these

(This Answer is Correct)

Q 47 : Uniform distribution is

Marks : 1

- 1 . leptokurtic
- 2 . mesokurtic
- 3 . platykurtic**
- 4 . none of these

(This Answer is Correct)

Q 48 : The mode of uniform distribution is represented by

Marks : 1

- 1 . all the observations**
- 2 . none of the observations
- 3 . few observations
- 4 . none of these

(This Answer is Correct)

Q 49 : For a negative random variable X, Var(X) must be

Marks : 1

- 1 . positive**
- 2 . negative
- 3 . both positive or negative
- 4 . none of these

(This Answer is Correct)

Q 50 : Coefficient of determination is determined by

Marks : 1

- 1 . r
- 2 . r²**
- 3 . |r|
- 4 . none of these

(This Answer is Correct)

Q 51 : The sum of the regression coefficients is?... twice the correlation coefficient

Marks : 1

- 1 . greater than or equal**
- 2 . less than
- 3 . equal
- 4 . none of these

(This Answer is Correct)

Q 52 : Given two point on the scatter diagram, the number of regression lines can be obtained is

Marks : 1

- 1 . 1**
- 2 . 2
- 3 . 3
- 4 . none of these

(This Answer is Correct)

- Q 53 :** The difference between the variances of ranks of candidates given by two judges is **Marks : 1**
- 1 . 0 (This Answer is Correct)
 - 2 . 1
 - 3 . -1
 - 4 . none of these
-

- Q 54 :** If expectation of a random variable is zero, each value of the random variable must be **Marks : 1**
- 1 . positive
 - 2 . negative
 - 3 . zero
 - 4 . none of these (This Answer is Correct)
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- Q 55 :** If the observations of a random variable X be the first n natural numbers with same probability, the expectation of the random variable is **Marks : 1**
- 1 . n
 - 2 . n+1
 - 3 . $(n+1)/2$ (This Answer is Correct)
 - 4 . none of these
-

- Q 56 :** For a binomial distribution (n, p), $\text{cov}(x, n-x)$ is **Marks : 1**
- 1 . npq
 - 2 . $(-)$ npq (This Answer is Correct)
 - 3 . 0
 - 4 . none of these
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- Q 57 :** The geometric mean of X following Bin(n,p) is approximately equal to **Marks : 1**
- 1 . $np(1-q/2)$ (This Answer is Correct)
 - 2 . $np(1+q/2)$
 - 3 . $np/2$
 - 4 . none of these
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- Q 58 :** X follows Poisson (m) then $P(x \geq a)$ is **Marks : 1**
- 1 . left continuous
 - 2 . right continuous (This Answer is Correct)
 - 3 . continuous
 - 4 . none of these
-

Q 59 : The probability of a continuous variable is determined by

Marks : 1

- 1 . pdf
- 2 . cdf
- 3 . pmf
- 4 . none of these

(This Answer is Correct)

Q 60 : The correlation coefficient of religion and family size is

Marks : 1

- 1 . positive
- 2 . negative
- 3 . zero
- 4 . none of these

(This Answer is Correct)
