



# ST. LAWRENCE HIGH SCHOOL

27, BALLYGUNGE CIRCULAR ROAD

**Class : 12****Subject : STATISTICS****Term : SECOND TERM****Max Marks : 80****Q 1 :** The mean of error in a regression is**Marks : 1**

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

 ( This Answer is Correct )**Q 2 :** The coefficient of determination is**Marks : 1**

1. r
2. |r|
3. r<sup>2</sup>
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 :** What is the correlation coefficient between x and  $50 - 3.7x$  is**Marks : 1**

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

 ( This Answer is Correct )**Q 5 :** The method of least square , the principle to minimise**Marks : 1**

1. sum of squares
2. squares of errors
3. sum of squares of errors
4. none of these

 ( This Answer is Correct )

**Q 6 :** If two regression coefficients are 1.6 and 0.4, then the correlation coefficient is

**Marks :** 1

1. -0.8
2. 0.8
3. 1
4. none of these

( This Answer is Correct )

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**Q 7 :** The slope of the regression line x on y is

**Marks :** 1

1.  $1/b_{xy}$
2.  $b_{yx}$
3.  $b_{xy}$
4. none of these

( This Answer is Correct )

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**Q 8 :** 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 )

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**Q 9 :** Correlation coefficient between x and y is r. The correlation coefficient between  $3x$  and  $-5y$  is

**Marks :** 1

1.  $-15r$
2.  $15r$
3.  $r^2$
4. none of these

( This Answer is Correct )

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**Q 10 :** The expected face value when a die when rolled once is

**Marks :** 1

1. 3.5
2. 4.5
3. 6.5
4. none of these

( This Answer is Correct )

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**Q 11 :** For the Uniform (2,4),  $P(X > 3) =$

**Marks :** 1

1. 0.3
2. 0.4
3. 0.5
4. none of these

( This Answer is Correct )

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**Q 12 :** 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  
4 . none of these

( This Answer is Correct )

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**Q 13 :** For a Poisson distribution with parameter unity, the coefficient of variation is **Marks : 1**

1 . 25%  
2 . 50%  
3 . 100%  
4 . none of these

( This Answer is Correct )

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**Q 14 :** The total probability below the third quartile is **Marks : 1**

1 . 25%  
2 . 50%  
3 . 75%  
4 . none of these

( This Answer is Correct )

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**Q 15 :** Binomial distribution is used for the random variable which is **Marks : 1**

1 . discrete  
2 . continuous  
3 . both  
4 . none of these

( This Answer is Correct )

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**Q 16 :** For a binomial distribution ( 7, 1/3 ),  $P(X=r)$  is maximum when the value of r is **Marks : 1**

1 . 0  
2 . 1  
3 . 7  
4 . none of these

( This Answer is Correct )

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**Q 17 :** For a standard normal variable  $P(Z= 2) =$  **Marks : 1**

1 . 0  
2 . 1  
3 . 0.5

( This Answer is Correct )

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4 . none of these

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**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

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**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

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**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

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**Q 21 :** A symmetric binomial distribution will be

**Marks :** 1

1 . mesokurtic

2 . leptokurtic

3 . platykurtic

( This Answer is Correct )

4 . none of these

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**Q 22 :** 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

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**Q 23 :** If X is a symmetric binomial variable with  $n=36$ , then sd of x is

**Marks :** 1

1 . 3

2 . 4

( This Answer is Correct )

3 . 9

4 . none of these

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**Q 24 :** For a binomial variable  $(n+1)p$  is an integer then it is**Marks :** 1

1 . unimodal

2 . bimodal

3 . trimodal

4 . none of these

 ( This Answer is Correct )

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**Q 25 :** The first quartile of the Rectangular distribution with parameters 0 and 1 is**Marks :** 1

1 . 1/4

2 . 1/3

3 . 3/4

4 . none of these

 ( This Answer is Correct )

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**Q 26 :** If for a random variable  $X$  follows Poisson( $m$ ), then  $E(X-E(X))$  is equal to**Marks :** 1

1 . 0

2 . 1

3 . 0.5

4 . none of these

 ( This Answer is Correct )

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**Q 27 :** The minimum value of  $y = x^2 - 6x + 11$  is**Marks :** 1

1 . 2

2 . 3

3 . 4

4 . none of these

 ( This Answer is Correct )

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**Q 28 :** The minimum value of  $y = x^2 - x + 2$  is**Marks :** 1

1 . 1/2

2 . 1/3

3 . 1/4

4 . none of these

 ( This Answer is Correct )

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**Q 29 :** The value of  $x$ , for which  $(\sin x + \cos x)$  is maximum is**Marks :** 11 .  $(8n+1)\pi/4$  ( This Answer is Correct )

2.  $(8n+1)\pi/3$
  3.  $(8n+1)\pi/8$
  4. none of these
- 

**Q 30 :** Gamma of  $(1/2)$

**Marks :** 1

1.  $\sqrt{\pi}$
2.  $\sqrt{2\pi}$
3.  $\sqrt{\pi/2}$
4. none of these

( This Answer is Correct )

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**Q 31 :** Defining the population in sample survey is a part of

**Marks :** 1

1. analysis
2. planning
3. execution
4. none of these

( This Answer is Correct )

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**Q 32 :** Determination of sampling frame is a part of

**Marks :** 1

1. analysis
2. planning
3. execution
4. none of these

( This Answer is Correct )

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**Q 33 :** The standard error of sample mean in SRSWR is \* The standard error of sample mean in SRSWOR. \* denotes

**Marks :** 1

1. <
2. >
3. =
4. none of these

( This Answer is Correct )

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**Q 34 :** Among the random sampling techniques the better is

**Marks :** 1

1. SRSWR
2. SRSWOR
3. SRSTR
4. none of these

( This Answer is Correct )

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**Q 35 :** Stratified sampling is used when the population is

**Marks :** 1

1. infinite
2. homogenous
3. heterogeneous
4. none of these

( This Answer is Correct )

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**Q 36 :** The total number of possible samples drawn from a population of size 4 in SRSWR is

**Marks :** 1

1. 4
2. 16
3. 32
4. none of these

( This Answer is Correct )

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**Q 37 :** Random sampling means haphazard sampling

**Marks :** 1

1. TRUE
2. FALSE
3. sometimes true
4. none of these

( This Answer is Correct )

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**Q 38 :** Response bias is

**Marks :** 1

1. procedural bias
2. sampling bias
3. both
4. none of these

( This Answer is Correct )

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**Q 39 :** If a sample of 20 individuals reveals that 10% people in the sample are smokers, then the estimate of proportion in population is

**Marks :** 1

1. 0.5
2. 0.1
3. 0.05
4. none of these

( This Answer is Correct )

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**Q 40 :** Systematic sampling is a

**Marks :** 1

1. random sampling
2. purpose sampling
3. nonrandom sampling
4. none of these

( This Answer is Correct )

**Q 41 :** Regression coefficient are effected by

**Marks :** 1

- 1 . only ogrigin
- 2 . only scale
- 3 . both origin & scale
- 4 . none of these

( This Answer is Correct )

**Q 42 :** For regression lines  $x + y = 3$  and  $2x + 4y = 10$  then mean of x is

**Marks :** 1

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

( This Answer is Correct )

**Q 43 :** 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
- 2 . 0.18
- 3 . 0.08
- 4 . none of these

( This Answer is Correct )

**Q 44 :** When two regression lines are perpendicular then the correlation coefficient is

**Marks :** 1

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

( This Answer is Correct )

**Q 45 :** Correlation coefficient between age and caste is

**Marks :** 1

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

( This Answer is Correct )

**Q 46 :** The values of a random variable are always positive real numbers.

**Marks :** 1

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

( This Answer is Correct )



**Q 47 :** Expectation of a negative random variable is

**Marks :** 1

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

( This Answer is Correct )

**Q 48 :** The value of  $\beta_2 =$

**Marks :** 1

- 1 . 1.6
- 2 . 1.8
- 3 . 2
- 4 . none of these

( This Answer is Correct )

**Q 49 :** For the Uniform ( 1 , 2),  $P(X > k + E(X)) = 1/3$ .  $k =$

**Marks :** 1

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

( This Answer is Correct )

**Q 50 :** 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 51 :** For a negative random variable X,  $\text{Var}(X)$  must be

**Marks :** 1

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

( This Answer is Correct )

**Q 52 :** 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 53 :** The trials in binomial distribution are

**Marks :** 1

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

( This Answer is Correct )

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**Q 54 :** For the Rectangular distribution with parameters 1 and 2, the median is

**Marks :** 1

- 1 . 1
- 2 . 1.5**
- 3 . 2
- 4 . none of these

( This Answer is Correct )

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**Q 55 :** The binomial distribution is symmetric when  $p =$

**Marks :** 1

- 1 . 0
- 2 . 0.5**
- 3 . 1
- 4 . none of these

( This Answer is Correct )

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**Q 56 :** Which distribution has mean equal to the variance

**Marks :** 1

- 1 . Binomial
- 2 . rectangular
- 3 . Poisson**
- 4 . none of these

( This Answer is Correct )

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**Q 57 :** 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 )

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**Q 58 :** 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 )

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**Q 59 :** 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 )

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**Q 60 :** The normal distribution has skewness

**Marks :** 1

1. -1
2. 0
3. 0.8
4. none of these

( This Answer is Correct )

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**Q 61 :** Bernoullian trials are

**Marks :** 1

1. independent
2. dependent
3. sometimes dependent
4. none of these

( This Answer is Correct )

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**Q 62 :** 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 )

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**Q 63 :** The first stage in sample survey is

**Marks :** 1

1. analysis
2. planning
3. execution
4. none of these

( This Answer is Correct )

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**Q 64 :** Scrutiny of data is a part of

**Marks :** 1

1. analysis
2. planning
3. execution
4. none of these

( This Answer is Correct )

**Q 65 :** Statistic is a measure based on

**Marks :** 1

- 1 . population
- 2 . sample
- 3 . both sample & population
- 4 . none of these

( This Answer is Correct )

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**Q 66 :** In a random number series the probability of drawing a two digit number is

**Marks :** 1

- 1 . 0
- 2 . 0.1
- 3 . 0.001
- 4 . none of these

( This Answer is Correct )

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**Q 67 :**  $\sqrt{(N-n)/(N-1)}$  is known

**Marks :** 1

- 1 . fmc
- 2 . frc
- 3 . fpc
- 4 . none of these

( This Answer is Correct )

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**Q 68 :** Probability a selecting n units from N units using SRSWR where one particular unit always appear in the sample

**Marks :** 1

- 1 .  $1 - (1 - 1/N)^n$
- 2 .  $(1 - 1/N)^n$
- 3 .  $n/N$
- 4 . none of these

( This Answer is Correct )

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**Q 69 :** In SRSWOR the probability that a particular member is included in the selected sample is

**Marks :** 1

- 1 .  $n/N$
- 2 .  $1/N$
- 3 .  $1/n$
- 4 . none of these

( This Answer is Correct )

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**Q 70 :** The random number selected is divided by the population size and we take the

**Marks :** 1

- 1 . remainder
- 2 . divisor
- 3 . cocient
- 4 . none of these

( This Answer is Correct )

**Q 71 :** Given two point on the scatter diagram, the number of regression lines can be obtained is **Marks : 1**

1 . 1  ( This Answer is Correct )

2 . 2

3 . 3

4 . none of these

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**Q 72 :** 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

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**Q 73 :** The quartile deviation of Uniform(1, 6) is **Marks : 1**

1 . 5/4  ( This Answer is Correct )

2 . 5/3

3 . 4/ 5

4 . none of these

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**Q 74 :** 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

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**Q 75 :** For a binomial distribution ( n, p ), 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 76 :** 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 77 :** The points of inflection of a normal distribution with mean 35 and variance 9 are

**Marks :** 1

- 1 . 17, 53
- 2 . 8, 62
- 3 . 32, 38**
- 4 . none of these

( This Answer is Correct )

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**Q 78 :** The minimum and maximum values of  $y = x + (1/x)$  are respectively

**Marks :** 1

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

( This Answer is Correct )

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**Q 79 :** Standard error is the standard deviation of

**Marks :** 1

- 1 . sample
- 2 . parameter
- 3 . statistic**
- 4 . none of these

( This Answer is Correct )

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**Q 80 :** Optimal allocation is used in

**Marks :** 1

- 1 . SRSWR
- 2 . SRSWOR
- 3 . Stratified sampling**
- 4 . none of these

( This Answer is Correct )

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