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JBD-003-1171001 Seat No. _____

M. Sc. (Statistics) (Sem. I) (CBCS) Examination

December - 2019

MS - 101 : Basics of Statistical Methods

Faculty Code : 003

Subject Code : 1171001

Time : $2\frac{1}{2}$ Hours] [Total Marks : **70**

Instructions : (1) Attempt all questions.

(2) Each question carries equal marks.

1 Answer the following : (Any **Seven**) **14**

(1) Define Poisson distribution.

(2) Define Chi-square distribution.

(3) Define Cauchy distribution.

(4) Define arithmetic mean.

(5) Define Median,

(6) What is level of significance?

(7) What is null hypothesis?

(8) The probability of an impossible event is _____.

(9) Define Type-II error.

(10) The range of correlation coefficient is _____.

2 Answer the following : (Any **Two**) **14**

(a) Explain Karl Pearson's Correlation.

(b) $X + 2y - 5 = 0$ and $2x + 3y - 8 = 0$ are the two regression line equation $\sigma^2 x = 12$ then find out $\bar{X}, \bar{y}, \sigma^2 y$ and r.

(c) Explain Measure of central tendency.

3 Answer the following : **14**

(a) Explain types of means.

(b) Explain Linear Regression.

OR

3 Answer the following : **14**

(a) Define binomial distribution and find its mean and variance.

(b) For 16 observation $r = 0.9$, find Probable Error and Range of Probable Error.

4 Answer the following : (Any **Two**) **14**

(a) Explain one sample test.

(b) Explain Geometric and Hypermetric distribution.

(c) Calculate rank Correlation.

x	50	55	60	52	20	62	35
y	20	30	35	60	15	12	32

5 Answer the following : (Any **Two**) **14**

(a) Find the Pearson's correlation coefficient for following data.

Score in Statistics	42	46	47	38	36
Score in Mathematics	41	30	49	38	28

(b) Find Mean, Median, Mode, Q_3, D_7, and P_{50} of following data. a. 42, 28, 28, 57, 31, 23, 50, 34, 32, 37, 40.

(c) Define Gamma distribution.

(d) Explain Spearman's correlation.