JAL-010-001307 Seat No. _____

B. B. A. (Sem. III) (CBCS) Examination

November – 2019

307 : Business Statistics - 01

(Old Course)

Faculty Code : 010

Subject Code : 001307

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

Instruction : Figures to the right indicate marks to each question.

1 (a) Prove addition theorem of probability. **7**

(b) The probabilities of getting first class, second class and pass class of a student are $\frac{1}{2}, \frac{1}{4}$ and $\frac{1}{8}$ respectively. Find its probability of fail in the examination. **7**

OR

1 (a) Prove $P(AnB) = P(A)P(B/A)$. **7**

(b) First urn contains 4 red and 6 white balls. Second urn contains 5 red and 4 white balls. An urn is selected at random and two balls are drawn from it. Find the probability that both are red balls. **7**

2 (a) The probability distribution of a random variable x is as follows : **7**

X	0	1	2	3	4
$P(x)$	0.10	P	0.30	P	0.10

Find P and mean.

(b) Write uses of normal distribution. **7**

OR

2 (a) 5000 tickets each of Rs. 1 are sold in a lottery. There is only one ticket in the lottery bearing a price of Rs. 4,000. Suppose Tushar has bought a ticket, how much should Tushar expect to win ? **7**

(b) The mean and standard deviation of marks of 1000 students in an examination are 75 and 15 respectively. If the marks are normally distributed, find the number of students getting marks less than 60. **7**

3 (a) Uses of Binomial distribution. **7**

(b) For a Poisson variate x, P(x=1) = 2 P (x=2). Find its mean, variance and standard deviation. **7**

OR

3 (a) Uses of Poisson distribution. **7**

(b) A coin is tossed four times. What is the probability of getting at least two heads ? **7**

4 (a) Advantages of sampling. **7**

(b) From the houses of a village numbered from 1 to 300, a systematic sample of 15 houses is taken. If house number 71 is selected in systematic sample, find remaining all the units of the systematic sample. **7**

OR

4 (a) Short note on Stratified Random Sampling Technique. **7**

(b) Explain standard error. **7**

5 For the following pay-off matrix, find Maximin criterion, Maximax criterion, Minimax criterion, Hurwicz criterion and Laplace criterion. (α = 0.70) : **14**

Events Acts	A1	A2	A2
E1	27	45	50
E2	12	17	36
E3	14	36	29
E4	26	24	15

OR

5 (a) Explain expected monetary value. **7**

(b) Explain Bayesian approach to decision making. **7**
