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Paper Code :DMB-203

Roll No.

B.Com-9

2<sup>nd</sup> Year Examination, Academic Batch 2018

Business Statistics

Time : 3 Hours ]

[ Max. Marks : 100

*Note.* (A) Attempt any **five** questions. (B) Each question carries equal marks. (20\*5)

**Q.1.** Consider the following probability distribution:

$$f(x) = kx \quad 0 < x < 1$$

(A) Find the value of k.

(B) Find the mean and variance

(C) Find the median, First quartile and third quartile.

**Q.2.** If 2% of electric bulbs manufactured by a certain company are defective, find the probability that in a sample of 200 bulbs:

(A) less than 2 bulbs are defective

(B) more than 3 bulbs are defective

**Q.3.** If the tangent of the angle between the lines of regression of Y on X and X on Y is 0.6, and the S.D. of Y is twice that of X, find the correlation coefficient between X and Y.

**Q.4** A box P has 1000 items of which 100 are defective. Another box Q has 500 items of which 20 are defective. The items of both the boxes are mixed and one item is randomly taken out. It is found to be defective. What is the probability that the item belongs to box P?

**Q5.** Find the mean and variance of Poisson distribution.

**Q6.** Define skewness and kurtosis in detail.

**Q7.** What is time series? What are the components of time series.

**Q8.** Define conditional probability. State and prove Baye's theorem.