

**MBA**  
**(SEM I) THEORY EXAMINATION 2018-19**  
**BUSINESS STATISTICS**

Time: 3 Hours

Total Marks: 100

**Note:** 1. Attempt all Sections. If require any missing data; then choose suitably.

**SECTION A**

- 1. Attempt all questions in brief. 2 x 10 = 20**
- a. What are the misuses of Statistics?
  - b. Define Advantages and Characteristics of Median.
  - c. Describe the uses of probability
  - d. State the concept of regression
  - e. What is Coefficient of Variation ( C.V.)?
  - f. Why in Normal Distribution all parameters like mean, median and mode are equal?
  - g. Define basic terminology of Experiments, Events and Sample Space in probability
  - h. Define Fixed base method in Index Numbers.
  - i. Write down the formula of Karl Pearson to find out coefficient of correlation.
  - j. Define Bayes' Theorem.

**SECTION B**

- 2. Attempt any three of the following: 10 x 3 = 30**
- a. What is Skewness? How does it differ from dispersion? Also mention the different measures of Skewness
  - b. What is Poisson Distribution? How it is calculated? Define its characteristics
  - c. Explain the concept of Index number and its uses.
  - d. Compare between Mean, Median and Mode and explain which of the three measures the best is
  - e. Calculate the mean and standard deviation of a binomial distribution of the data depicted in the following table

x	0	1	2	3	4	5
f	4	20	40	40	20	4

**SECTION C**

- 3. Attempt any one part of the following: 10 x 1 = 10**
- (a) What do you mean by Time Series Analysis? Explain its components.
  - (b) The mean salary of employees of a firm is Rupees 30,000. The mean annual salaries of male and female employees are Rupees 35,000 and Rupees 23,000 respectively. Find out the percent age of male and female employees in the firm.
- 4. Attempt any one part of the following: 10 x 1 = 10**
- (a) What are the techniques of association of attributes & testing? Explain
  - (b) Do you think that Standard Deviation is the best measure of dispersion amongst all the measures? Is there any limitation/s of Standard Deviation?

5. **Attempt any *one* part of the following:** **10 x 1 = 10**
- (a) An average light bulb manufactured by the “X” Corporation lasts 300 days with a standard deviation of 50 days. Assuming that bulb life is normally distributed, what is the probability that an “X” light bulb will last at most 365 days?
  - (b) Differentiate between Binomial distribution, Poisson distribution and Normal distribution.
6. **Attempt any *one* part of the following:** **10 x 1 = 10**
- (a) Explain the following –
    - (i) Regression equations and their application
    - (ii) Testing of Hypothesis
  - (b) Suppose 35% of first-year college students applied to some other college than where they are actually attending. Suppose further that you will be asking a simple random sample of size  $n = 1000$  from the population of about  $N = 1,600,000$  and desire a result within 3% of the true value. How probable is this?
7. **Attempt any *one* part of the following:** **10 x 1 = 10**
- (a) Explain with examples the following –
    - (i) Least Square Method
    - (ii) Trend Analysis
  - (b) In a bolt factory, machines A,B& C manufacture 25%, 35% and 40% of the total output respectively. Of the total of their output, 5%, 4% and 2% are defective bolts. A bolt is drawn at random and is found to be defective. What is the probability that it was manufactured by Machine A, B and C?