Subject Code—6889

M. Com. (First Year) EXAMINATION

(Main)

MC-106

BUSINESS STATISTICS

Time : 3 Hours   *Maximum Marks :* 70

Note : Attempt *Five* questions in all. Q. No. 1 is compulsory. All questions carry equal marks.

1. Discuss the following in brief :

   (a) Skewness

   (b) Weighted Index number

   (c) Classical Probability

   (d) Non-sampling errors

   (e) Central limit theorem

   (f) Interval Estimation

   (g) Causes of variations in quality

(h) Regression Lines

(i) Errors in hypothesis testing .

(j) Conditional probability.

2. What is meant by central tendency ? Discuss measures of central tendency with their merits and demerits with suitable examples.

3. (a) What are index numbers ? Explain various problems involved in their construction.

   (b) What is time series ? Briefly explain the components of time series.

4. (a) Write a detailed note on Binomial Probability Distribution.

   (b) A company has three plants to manufacture 8,000 scooters in a month. Out of 8,000 scooters, plant I manufactures 4,000, plant II manufactures 3,000 and plant III manufactures 1,000 scooters. At plant I, 85 out of 100 scooters are rated of standard quality or better, at plant II, only 65 out of 100 scooters are rated of standard quality or better and at plant III, 60 out of 100 scooters are rated of standard quality or better. What is the probability that the scooter selected at random comes from (i) plant I, (ii) plant II, (iii) plant III if it is known that the scooter is of a standard quality ?

5. (a) What is Correlation ? Discuss types of correlation.

   (b) Given the following data, find the regression equation of Y on X :

   X : 2   3   4   5   6
   Y : 7   9   10   14   15

6. (a) What is Sampling ? Discuss probability sampling methods in detail.

   (b) What is Sampling Distribution ? Discuss its characteristics. Also explain relationship between sample size and standard error.

7. (a) Explain hypothesis testing procedure in detail.

   (b) An automobile company gives the following information about age group and the liking for a particular model of car that it plans to launch :

Persons	Below 25	25-50	Above 50
Who liked the car	45	30	25
Who disliked the car	55	20	25

On the basis of the above data, can it be concluded that the model appeal is independent of the age group ? (Use level of significance 5 percent)

8. Discuss the methodology of statistical quality control. Also discuss types of control charts. What is meant by the terms process under control and out of control ?