

Bachelor of Science (B.Sc. I.T.) Semester-III (C.B.S.) Examination

STATISTICAL METHODS

Paper—VI

Time : Three Hours]

[Maximum Marks : 50

- Note :—** (1) All questions are compulsory and carry equal marks.
 (2) Assume suitable data wherever necessary.
 (3) Draw neat and labelled diagram wherever necessary.

EITHER

1. (a) What is primary data ? Discuss the methods of collecting primary data. 5
- (b) What is classification ? Explain the types of classifications. 5

OR

- (c) Define statistics and discuss the cause of distrust of statistics. 5
- (d) What is lottery method of sampling ? Explain its merits and demerits. 5

EITHER

2. (a) What do you mean by central tendency ? Define the different measures of central tendency. 5
- (b) Calculate the harmonic mean of the following distribution :
 Dividend yield in percentage : 2-4 4-6 6-8 8-10
 (in Dividend/market price)
 No. of companies : 20 40 30 10 5

OR

- (c) Derive the median formula for continuous frequency distribution. 5
- (d) Calculate the arithmetic mean of the marks from the following table :
 Marks : 0-10 10-20 20-30 30-40 40-50 50-60
 No. of students : 12 18 27 20 17 8 5

EITHER

3. (a) Prove that for any discrete distribution, standard deviation is not less than mean deviation from mean . 5
- (b) Calculate the mean deviation from the mean for the following data :
 Marks : 0-10 10-20 20-30 30-40 40-50 50-60
 No. of students : 6 5 15 8 4 6 5

OR

- (c) What is skewness ? Explain in detail. 5
- (d) Calculate quartile deviation and its coefficient from the following data :
 Class : 0-10 10-20 20-30 30-40 40-50
 Frequency : 4 15 28 16 7 5

EITHER

4. (a) What are the assumptions for Karl Pearson's correlation coefficient ? Explain. 5
- (b) Obtain lines of regression for the following :
 X : 1 2 3 4 5 6 7 8 9
 Y : 9 8 10 12 11 13 14 16 15
 Also obtain an estimate of Y which should correspond to the average $X = 6.2$. 5

OR

- (c) What is regression coefficient ? Explain any two properties of regression coefficient. 5
- (d) A random sample of 5 college students is selected and their grades in Mathematics and Statistics are found to be :

Mathematics : 85 60 73 40 90

Statistics : 93 75 65 50 80

Calculate Rank correlation coefficient.

5

5. Attempt all :

- (a) Discuss the advantages of sample investigation versus census investigation. 2½

- (b) Draw a Histogram for the data given below :

Marks : 0-4 4-8 8-12 12-16 16-20

No. of students : 4 6 10 8 4

2½

- (c) What is Kurtosis ? Explain. 2½

- (d) What is scatter diagram ? Explain. 2½