AU–328

M.A./M.Sc. (Part—I) Semester—II (CBCS Scheme) Examination

STATISTICS

(Statistical Tools for Data Analysis)

Paper—VIII (GIC–B)

Time : Three Hours] [Maximum Marks : 80

Note :— Solve either (A) or (B) from each question.

1. (A) (i) Explain different bar diagrams like simple bar, subdivided bar and percentage bar and give example or situation where they are suitable.

(ii) Define :

(i) Null hypothesis

(ii) Level of significance

(iii) Critical region

(iv) Power of the test. 8+8

OR

(B) (i) Explain procedure of drawing pie diagram. Also discuss its importance in data representation.

(ii) What are the four possible decisions in testing of hypothesis ? Define with an example type I and type II errors. 8+8

2. (A) (i) Explain t test for testing significance of an observed sample correlation coefficient.

(ii) What is Fisher's Z transformation ? Explain Z test. 8+8

OR

(B) (i) Explain the test of significance used to test hypothesis of equality of means of normal population when samples are dependent.

(ii) Explain large sample test for difference of means. 8+8

3. (A) (i) Describe Sign-Rank test.

(ii) Derive χ^2 test statistic for 2×2 contingency table and also explain test of independence of attribute for it. 7–9

OR

(B) (i) Describe Kolmogorov-Smirnov two sample test.

(ii) Distinguish between parametric and non-parametric test. Write advantages of Non-parametric over parametric test. 8+8

4. (A) (i) What is coefficient of determination ? What are its limits ? Also explain uses of it in regression analysis.

(ii) Define two lines of regression and show that $(\bar{x}, \bar{y})$ is point of intersection of these lines. 8–8

OR

(B) (i) State the properties of regression coefficients and prove any one of them.

(ii) Define Karl Pearson coefficient of correlation coefficient. What are its limits ? It is independent of change of origin and scale. 8+8

5. (A) (i) Discuss how to use pivot table option in MS-Excel to create cross tabulation used in data analysis.

(ii) Distinguish between R software and SPSS. 8+8

OR

(B) (i) What are different types of graphs available in SPSS and make a note on the options in the histogram.

(ii) Discuss how to find Karl Pearson coefficient of correlation using R. Also write R command for finding Spearman's rank correlation coefficient. 8+8