U.G. 1st Semester Examination - 2020

STATISTICS

[PROGRAMME]

Course Code : STAT-G-CC-T-1A

Full Marks : 50 (40+10) Time : $2\frac{1}{2}$ Hours

The figures in the right-hand margin indicate marks.

Candidates are required to give their answers in their own words as far as practicable.

Notations and symbols have their usual meaning.

(Statistical Methods)

1. Answer any **five** questions: 2×5=10

   a) What are primary data and secondary data?

   b) How does ratio scale differ from interval scale?

   c) Define Geometric mean and Harmonic mean.

   d) Why are variance and standard deviation the most popular measures of variability?

   e) Distinguish between frequency type and non-frequency type data.

   f) What must be the values of the fourth moment about the mean in order that the distribution be leptokurtic, mesokurtic, and platykurtic ?

[Turn over]

   g) What is the difference between correlation analysis and regression analysis?

   h) How can you measure association between two categorical variables?

2. Answer any **two** questions: 5×2=10

   a) Write a short note on the measures of dispersion of a frequency distribution.

   b) Compare mean, median and mode as measures of central tendency of a distribution.

   c) What is Sheppard's correction? What will be the corrections for the first four moments?

   d) Write down Yule's Coefficient of Association and discuss its Range. State its limitations.

3. Answer any **two** questions: 10×2=20

   a) Write a note on the use of diagrammatic method in Statistics. What is statistical map?

   b) In a frequency table, the upper boundary of each class interval has a constant ratio to the lower boundary. Show that the geometric mean G may be expressed by the formula:

$$\log G = x_0 + \frac{c}{N}\sum_i f_i(i-1)$$

where x_0 is the logarithm of the mid-value of the first interval and c is the logarithm of the ratio between upper and lower boundaries.

c) Find the mean deviation from the mean and standard deviation of arithmetical progression a, a+d, a+2d, ..., a+2nd and verify that the latter is greater than the former.

d) Describe the concept of regression of y on x. Why are there two regression lines? At which point do the two regression lines coincide?

[*Internal Assessment : 10*]

———————