Code No. 3190

FACULTY OF SCIENCE

B.Sc. V-Semester (CBCS) Examination, November / December 2018

Subject : Statistics

Paper – V (DSC) : Sampling Theory, Time Series, Index Numbers and Demand Analysis

Time : 3 Hours Max. Marks: 60

PART – A (3 x 5 = 15 Marks)
(Short Answer Type)

Note : Answer any FIVE of the following questions.

1 Define Sampling unit and sampling frame.
2 Explain probability sampling.
3 Explain about proportional allocation.
4 Explain about Random fluctuations in Time Series data.
5 Distinguish between Complementary and competitive commodities.
6 What is Giffen's paradox?
7 Explain chain base Index Numbers.
8 Explain the multiplicative and mixed model of a Time series data.

PART – B (3 x 15 = 45 Marks)
(Essay Answer Type)

Note: Answer ALL questions.

9 (a) Distinguish between sampling and non sampling errors. Give the sources of Non sampling errors.

OR

(b) Define SRSWOR and SRSWR. Show that in SRSWOR the probability of selecting a specified unit of the population at any given draw is equal to the probability of selecting it at the first draw.

10 (a) What are the seasonal variations? Explain Ratio to Trend method of calculating seasonal variations. Also give its merits and demerits.

OR

(b) Define Cost function. With a cost function $C = a + \Sigma_h c_h n_h$ prove that the variance of the estimated mean $\bar{y}_{st}$ is minimum when n_h is proportional to $N_h S_h / \sqrt{C_h}$.

11 (a) Describe Leontief's method of estimating price elasticity of demand for time series data and its limitations.

OR

(b) What is meant by (i) Base shifting (ii) Deflating (iii) Splicing of Index Numbers? Explain and illustrate.

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