2022

B.A./B.Sc.

Fourth Semester

GENERIC ELECTIVE – 4

STATISTICS

Course Code: STG 4.11

(Applied Statistics)

Total Mark: 70 *Pass Mark: 28*

Time: 3 hours

Answer five *questions, taking* one *from each unit.*

UNIT–I

1. (a) Define time series. Explain its importance in business and economic statistics. 2+4=6
   (b) Discuss moving average method of time series. 4
   (c) Explain the link relative method of determination of seasonal variations. 4

2. (a) Describe the uses of time series. 4
   (b) Discuss the various components of time series. 6
   (c) Explain any one method of measuring trend. 4

UNIT–II

3. (a) What is index numbers? What is the base period? Explain about the precautions to be taken in its selection. 2+1+4=7
   (b) Explain "time reversal test" and "factor reversal test". Show that Fisher's index number satisfies both these tests. 2+5=7

4. (a) Explain why index numbers are called economic barometers. 2
   (b) Discuss the different characteristics of an index number. 4
   (c) Show that Marshall-Edgeworth's index number formula lies between Laspeyres and Paasche index number formula. 4
   (d) Explain briefly about the problems faced in the construction of cost of living index number. 4

UNIT–III

5. (a) Define chance and assignable causes of variations. 2
   (b) How do you set the control limits for R-charts in statistical quality control? 5
   (c) Explain the control chart for fraction defective. 7

6. (a) Explain the control limits for mean. 4
   (b) What do you mean by process control and product control? 3
   (c) How will you prepare the control charts for number of defects per unit (c-chart)? Mention some of its applications. 5+2=7

UNIT–IV

7. (a) What is meant be "vital statistics"? Discuss different sources of vital statistics. 2+3=5
   (b) Discuss different methods of measuring mortality rates. 4
   (c) What do you mean by life table? Mention different columns of a life table. 1+4=5

8. (a) Discuss indirect method of standardization of death rates. 4
   (b) Explain the measures of fertility. 6
   (c) Describe the method of construction of a life table. 4

UNIT–V

9. (a) Define the laws of demand and supply, demand function, and supply function with illustration. 6
   (b) Define price elasticity of demand with interpretation. What type of data are required for estimating elasticity? 4+4=8

10. (a) What do you understand by equilibrium price? The demand and supply curves of a commodity are given by: $d = 19 - 3p - p^2$ and $s = 5p - 1$. Find the equilibrium price and quantity exchanged. 2+4=6
    (b) Define price elasticity of supply with interpretation. 4
    (c) Write a note on Engel's law and Engel's curves. 4