NRT/KS/19/5855

Bachelor of Arts (B.A.) Third Semester Examination

STATISTICS (Economic Statistics)

Optional Paper—2

Time : Three Hours] [Maximum Marks : 50

N.B. :— All **FIVE** questions are compulsory and carry equal marks.

1. (A) Name various types of averages used in construction of index numbers. Which average is appropriate in its construction and why ?

   (B) Explain factor reversal test. Show that Fisher's Index Number satisfies it.

   (C) Prove that if Laspeyre's and Paasche's Index Numbers are equal then they are equal to Marshall-Edgeworth Index Number.

   (D) Distinguish between chain base indices and fixed base indices. State the advantages of C.B.I. over F.B.I. 2.5×4=10

OR

   (E) Define an Index Number. What are its uses ? Differentiate between weighted and un-weighted indices. Define different price indices generated by weighted aggregate method. 10

2. (A) Define cost of living index number. Discuss the main steps of construction of this index number. Describe aggregate expenditure method and family budget method of its construction. State its any two uses. 10

OR

   (E) Explain the technique of splicing of index number series stating the need.

   (F) Define index of industrial production. Write its any two uses.

   (G) Explain the "Census of output or Production method" of estimating national income.

   (H) Define the terms :

      (i) Inflation

      (ii) Deflation. 2.5×4=10

3. (A) Define partial and cross price elasticities and income elasticity of demand. Differentiae between complementary and competitive commodities. If X_1 and P_1 are demand and price of tea and X_2 and P_2 are demand and price of coffee and demand functions are $X_1 = P_1^{-1.3}P_2^{0.5}$, $X_2 = P_1^{0.3}P_2^{-0.5}$, show that two commodities are competitive. Also find four partial and cross elasticities of demand. 10

OR

   (E) Explain Pareto's Law of income distribution. What is Lorenz curve ? Define Gini's concentration ratio. Obtain Gini's concentration ratio assuming Pareto's Law. 10

4. (A) Explain the concept of seasonal fluctuations in a time series giving examples. What is deseasonalisation ? Describe the following methods of studying seasonal variations in the time series, stating their relative merits and demerits :

      (i) Ratio to trend method

      (ii) Link relative method. 10

OR

(E) Define time series. Explain its mathematical model.

(F) State the uses of time series.

(G) Explain the residual method of obtaining cyclical component of a time series.

(H) Explain Leontief's method of estimating price elasticities of demand and supply from time series data. 2.5×4=10

5. Solve any **TEN** questions from the following :

(A) Comment on : Index numbers can not be less than 100.

(B) Define an index number which has an upward bias.

(C) State two index numbers which satisfy circular test.

(D) Name the groups in which the commodities are classified in construction of WPI.

(E) Which body mainly collects and publishes estimates of National Income ?

(F) What is meant by disinflation ?

(G) Define a Giffen good.

(H) State Engel's law.

(I) The demand curve and supply curve of a commodity are given by $D = 26 - 3P - P^2$ and $S = 3P - 1$. Find the equilibrium price.

(J) Give example of time series data where seasonal component is present.

(K) Define a moving average of period 5.

(L) What is the purpose of deseasonalization of time series data ? 1×10=10