NRT/KS/19/2092

Bachelor of Science (B.Sc.) Semester—III Examination

STATISTICS (Economic Statistics)

Optional Paper—II

Time : Three Hours]   [Maximum Marks : 50

Note :—ALL questions are compulsory and carry equal marks.

1. (A) Define an index number. Why are they called as economic barometers ? Explain any five problems that are involved in the construction of an index number.   10

OR

(B) Discuss the following tests to be satisfied by an index number formula :

   (i)   Time Reversal Test

   (ii) Factor Reversal Test

   (iii) Circular Test.

   Show that Fisher's index number satisfies T.R.T. and F.R.T.   10

2. (A) Write short notes on :—

   (i)   Inflation

   (ii) Deflation

   (iii) Purchasing power of money.

(B) What is meant by Index of Industrial Production ? How is it calculated ? State its uses. Which organisation compiles IIP ?   5+5

OR

(E) Explain the procedure of base shifting and splicing of index number series with an example.

(F) Explain any two methods of estimation of National Income.   5+5

3. (A) Explain :—

   (i)   Law of demand and supply

   (ii) Equilibrium price

   (iii) Giffen's paradox.   5+5

(B) Explain :—

   (1)   Price elasticity of Demand

   (2)   Price elasticity of Supply

   (3)   Income and cross elasticity of demand.   5+5

OR

(E) Explain Engel's Curves and Engel's Law.

(F) Explain Pareto's Law of Income Distribution. Also explain the technique of concentration curves.

                                                                                     5+5

4. (A) Define time series with an example. Explain the four components of time series giving an example of each component.

(B) Explain various models related to time series analysis. Also differentiate between them.   5+5

OR

(E)   Write a note on business cycle.

(F)   Differentiate between cyclic variations and seasonal variations in time series.

(G)   Describe the method of ratio to trend for measuring seasonal variation in time series.

(H)   Explain the uses of studying time series.

5.   From the following questions, solve any **ten** questions :—   2.5×4=10

(A)   Define price relative and quantity relative.

(B)   Fill in the blanks :—

_____ index has an upward bias and _____ index has a downward bias.

(C)   Define 'Link Relative'.

(D)   Define Wholesale Price index number.

(E)   Which Organization compiles National Income ?

(F)   State any two uses of cost of living index number.

(G)   If the demand curve is of the form $p = ae^{-kx}$, where p is the price and x is the demand, a and k are constants obtain the price elasticity of demand.

(H)   State whether demand for necessities is elastic or inelastic.

(I)   State the formula for Gini's concentration ratio.

(J)   Define a moving average of period K in time series data.

(K)   Give an example of time series data where irregular component is prominently present.

(L)   What is meant by de-seasonalization of time series data ?   10×1=10