

NTK/KW/15 –5840

Third Semester B. Sc. Examination

STATISTICS

Paper – II

(Economic Statistics)

Time : Three Hours]

[Max. Marks : 50

N. B. : All the five questions are compulsory and carry equal marks.

1. (A) Define an index number. Discuss various problems in the construction of an index number. 10

OR

(E) Explain the procedure of constructing chain indices. Compare fixed base indices and chain indices. When are there two equal ?

(F) Explain time reversal test and factor reversal test. Show that Fisher's price index satisfies both the tests. 5 + 5

2. (A) Explain the steps in the construction of consumer price index. Describe the family budget method of calculating it.

(B) What are the different methods of computing national income ? Explain expenditure method of calculating national income. 5 + 5

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Contd.

OR

- (E) Describe the method of construction of index of industrial production state its uses.
- (F) Explain the method of construction of wholesale price index. What are its uses ? 5 + 5

3. (A) State the static laws of demand and supply. Explain how the market equilibrium price is determined. The demand and supply functions for a commodity are given by

$$d = 19 - 3p - p^2 \text{ and } s = 5p - 1$$

Find the equilibrium price and the quantity exchanged. 5 + 5

- (B) Define :—

- (i) Price elasticity of demand.
- (ii) Cross price elasticity of demand.
- (iii) Income elasticity of demand.

Explain the classification of commodities on the basis of these elasticities. 5 + 5

- (E) Explain Pareto's law of income distribution. What is Lorenz curve ? Define Gini's coefficient. Derive the expression for Gini's coefficient assuming that Pareto's law of income distribution holds. 10

4. (A) Define a time series. Describe its various components. Explain the method of fitting

mathematical curves for obtaining trend values,
when

- (i) The trend is linear.
- (ii) The trend is exponential. 10

OR

- (E) Explain the ratio to moving average method of calculating the seasonal indices.
- (F) Explain Pigou's method of estimating price elasticity of demand on the basis of time series data. 5 + 5

5. Solve any **ten** of the following questions :—

- (A) Define Drobish-Bowley's price index
- (B) Write the formula for calculating price index using weighted geometric mean of price relatives
- (C) State true or false
 - (i) Marshall-Edgeworth's index Lies between Laspeyre's and Paashe's index.
 - (ii) Walsch's index satisfies time reversal test.
- (D) State Engel's law.
- (E) What is the value of Gini's coefficient if the Lorenz curve coincides with line of equal distribution ?
- (F) Define price elasticity of supply
- (G) Which index is used to deflate the money wages ?
- (H) Define Gross National product.

- (I) What is meant by splicing of index number series?
- (J) State the assumption mode in average percentage method of calculating seasonal indices.
- (K) State the criterion to decide the time period of moving average, while analyzing a time series.
- (L) Identify the predominant component in the following time series
 - (i) Sale of raincoats
 - (ii) Population of India.