2503081204044002
EXAMINATION APRIL 2025
MASTER OF SCIENCE (STATISTICS) (FOURTH SEMESTER)
COURSE ELECTIVE-II-4042 ECONOMIC & BUSINESS STATISTICS

[Time: As Per Schedule] **[Max. Marks:70]**

Instructions:
1. **Fill up strictly the following details on your answer book**
   a. Name of the Examination : **MASTER OF SCIENCE (STATISTICS) (FOURTH SEMESTER)**
   b. Name of the Subject : **COURSE ELECTIVE-II-4042 ECONOMIC & BUSINESS STATISTICS**
   c. Subject Code No : **2503081204044002**
2. Sketch neat and labelled diagram wherever necessary.
3. Figures to the right indicate full marks of the question.
4. All questions are compulsory.
5. Each question carries 14 marks.
6. Attempt any two Question out of the (a), (b) and (c) below.

Seat No:

Student's Signature

Q.1 (a) "Index numbers are economic barometers". Discuss the statement and point out the limitations of index numbers.

(b) Discuss base shifting, splicing and deflating of index numbers.

(c) Define cost of living index number. Discuss main steps, methods and uses of cost of living index numbers.

Q.2 (a) Write interpretations of various values of elasticity of demand. Also write how it is useful to set the price of the commodity. Also give the relation with the total revenue.

(b) Discuss Leontief's method of estimating price elasticity of demand for time series data and give its limitations.

(c) Write a detailed note on Engels law for income distribution.

Q.3 (a) Define time series with it's assumption and objective. Indicate its importance in business and economics. Discuss additive and multiplicative model for time series data

(b) What is seasonal variation in time series? Give an example. Explain ratio to moving average method of computing the indices of seasonal variation.

(c) What is trend? Discuss the methods for measuring trend in time series.

Q.4 (a) Define the given terms: (i) Lags (ii) autocorrelation function (iii) partial autocorrelation function (iv)stationary series

(b) Write a detail note on ARIMA (0,0,q) model.

(c) Write a detail note on GARCH model.

Q.5 (a) Write a detail note on industrial production index.

(b) (i) What is demand and supply functions? State the uses the functions.

(ii) The demand functions of two commodities A and B are:
$D_A = 10 - p_A - 2p_B$, $D_B = 6 - p_A - p_B$ And the corresponding supply functions are:
$S_A = -3 + p_A + p_B$, $S_B = -2 + p_B$, Where p_A and p_B denote the prices of A and B respectively. Find the equilibrium prices and equilibrium quantities changed in the market.

(c) Write a detail note on link relative method for measuring seasonal indices with merits and demerits.

*****