

(i) Printed Pages : 3

Roll No. ....

(ii) Questions : 9

Sub. Code : 

1	0	9	0	5
---	---	---	---	---

Exam. Code : 

5	0	0	3
---	---	---	---

**NEP U.G. Common-Inter Disciplinary Course 3<sup>rd</sup> Semester  
(2125)**

**STATISTICS**

**Paper : Applied Statistics**

**Time Allowed : Three Hours]**

**[Maximum Marks : 60**

**Note :—** Attempt five questions in all, including Question No. 1 which is compulsory and selecting two questions from each unit.

1. Answer briefly the following:

- (a) Explain the Time Reversal Test and state which index number satisfies it.
- (b) What is a Value Index Number? Write its formula and meaning.
- (c) Differentiate between Census and Sample Survey.
- (d) State any three uses of Time Series Analysis in business and economics. 3,3,3,3

## UNIT-I

2. Define Index Numbers. Discuss the problems in their construction and the essential steps for a good index number. 12
3. Explain the concept of Chain Base Index Numbers and describe the method of their construction. Compare Chain Base Index Numbers with Fixed Base Index Numbers. Also discuss their advantages and limitations. 12
4. Describe the Simple Average of Price Relatives and Weighted Average of Price Relatives methods for constructing index numbers. Explain the steps, formulas, and limitations of each method with an example. 12
5. (a) What is a Consumer Price Index (CPI)? Explain any two methods of constructing CPI.  
(b) State the uses and limitations of index numbers. 6,6

## UNIT-II

6. Explain the measurement of mortality. Discuss Crude Death Rate, Specific Death Rate, and Standardized Death Rate with formulas, uses, and limitations. 12
7. Define population growth and describe how it is measured. Also explain the role of fertility, mortality, and migration in changing population size. 12

8. Discuss the Method of Least Squares for determining trend in a time series. Derive the normal equations and explain the procedure for fitting a straight-line trend. 12
9. (a) Write short notes on Additive and Multiplicative models of a time series.
- (b) Explain the Graphic Method and Semi-Averages Method of determining trend in a time series. 5,7