

SHRIMATHI DEVKUNVAR NANALAL BHATT VAISHNAV COLLEGE FOR WOMEN
(AUTONOMOUS)

(Affiliated to the University of Madras and Re-accredited with 'A+' Grade by NAAC)

Chromepet, Chennai - 600 044.

M.Sc.Biostatistics - END SEMESTER EXAMINATIONS - APRIL 2025

SEMESTER - IV

24PBSET4A04 - Forecasting and Decision Making Techniques

Total Duration : 2 Hrs. 30 Mins.

Total Marks : 60

Section B

Answer any **SIX** questions ($6 \times 5 = 30$ Marks)

1. Define business forecasting and explain its role in decision-making.
2. Illustrate the steps involved in the forecasting process with an example.
3. Discuss steps involved in 3-period moving average for the given time series data.
4. Show how Holt's method is used for exponential smoothing in forecasting.
5. Identify and describe the major components of a time series.
6. Classify different types of variations found in a time series with suitable examples.
7. Solve an ARIMA model equation for a given dataset and interpret the results.
8. Distinguish between Maximin and Maximax criteria in decision-making under uncertainty.

Section C

I - Answer any **TWO** questions ($2 \times 10 = 20$ Marks)

9. Apply the Box-Jenkins methodology to choose an appropriate forecasting technique.
10. Relate the impact of seasonality in time series forecasting and suggest suitable adjustment techniques.
11. Examine the importance of Expected Value of Perfect Information (EVPI) in decision-making under risk.
12. Describe exploring different data patterns and measuring forecasting errors.

II - Compulsory question ($1 \times 10 = 10$ Marks)

13. Critically evaluate the effectiveness of different smoothing techniques in forecasting accuracy.
