Roll No. | | | | | | | | | | | | **Total No. of Pages : 03**

Total No. of Questions : 10

MBA (Sem.–4)

BUSINESS FORECASTING

Subject Code : MBA-964-18

M.Code : 78032

Date of Examination : 22-05-2025

Time : 3 Hrs. **Max. Marks : 60**

INSTRUCTIONS TO CANDIDATES :

1. **SECTION-A contains EIGHT questions carrying TWO marks each and students have to attempt ALL questions.**
2. **SECTION-B consists of FOUR Subsections : Units-I, II, III & IV. Each Subsection contains TWO questions each carrying EIGHT marks each and students have to attempt any ONE question from each Subsection.**
3. **SECTION-C is COMPULSORY and consists of ONE Case Study carrying TWELVE marks.**

SECTION - A

1. Write a short notes on :

a) Elasticity of demand

b) Types of users of forecasted information.

c) Focus groups

d) Conditional forecasting

e) Stationarity in time series

f) Random walk in time series

g) Composite indexes

h) Long term forecast

SECTION - B

UNIT - I

2. What do you understand by the term forecasting? Explain the relationship between forecasting and demand and the significance of demand analysis in forecasting.

3. What are the various techniques of forecasting? How to select the best technique for forecasting the demand?

UNIT - II

4. Explain the difference between quantitative and qualitative research techniques in detail.

5. Elaborate how to estimate the parameters and interpret the results of regression analysis with suitable examples.

UNIT - III

6. What is time series analysis? What are the properties of stochastic time series?

7. Explain the various types of homogenous non-stationary processes in time series.

UNIT - IV

8. What are barometric techniques of forecasting? How these are different from other techniques?

9. Explain the use of software packages for forecasting. Also explain the pros and cons of these packages.

SECTION - C

10. Study the following case and answer the question(s) that follow :

In this case, the client was the Australian federal government, who needed to forecast the annual budget for the Pharmaceutical Benefit Scheme (PBS). The PBS provides a subsidy for many pharmaceutical products sold in Australia, and the expenditure depends on what people purchase during the year. The total expenditure was around A$7 billion in 2009, and had been underestimated by nearly $1 billion in each of the two years before we were asked to assist in developing a more accurate forecasting approach.

In order to forecast the total expenditure, it is necessary to forecast the sales volumes of hundreds of groups of pharmaceutical products using monthly data. Almost all of the groups have trends and seasonal patterns. The sales volumes for many groups have sudden jumps up or down due to changes in what drugs are subsidized. The expenditures for many groups also have sudden changes due to cheaper competitor drugs becoming available.

Thus, we needed to find a forecasting method that allowed for trend and seasonality if they were present and at the same time was robust to sudden changes in the underlying patterns. It also needed to be able to be applied automatically to a large number of time series.

Questions :

a) What are the specific challenges in using traditional time series forecasting methods for this case, given the presence of both regular patterns (trends/seasonality) and irregular changes (policy shifts)?

b) What criteria should be used to determine whether a time series model is "robust" enough to handle sudden changes in drug subsidization patterns?

c) What validation approach would be appropriate for evaluating forecast accuracy, considering the previous $1 billion underestimation problem?