



TECHNICAL UNIVERSITY OF MOMBASA

SCHOOL OF BUSINESS

DEPARTMENT OF ACCOUNTING AND FINANCE

UNIVERSITY EXAMINATION FOR:

BACHELOR OF COMMERCE/BACHELOR OF BUSINESS ADMINISTRATION

BFI 4403 FINANCIAL FORECASTING AND MODELLING

END OF SEMESTER EXAMINATION

SERIES: APRIL 2025

TIME: 2 HOURS

DATE: Pick Date Select Month Pick Year

Instructions to Candidates

You should have the following for this examination.

-Answer Booklet, examination pass and student ID

This paper consists of **FIVE** questions. Attempt question ONE (Compulsory) and any other TWO questions.

Do not write on the question paper.

Question ONE

- a) Expound on the term model and discuss the classification of models (6 Marks)
- b) Delineate the main steps used in modelling process (6 Marks)
- c) The following information relates to the demand data for 8 years.

Year	2017	2018	2019	2020	2021	2022	2023	2024
Actual sales	300	305	303	307	309	320	325	327

Required;

Forecast the demand for the year 2025 using the three naïve methods (6 Marks)

- d) Discuss the following techniques used in forecasting;
 - (i) Grass root (3 Marks)

- (ii) Market Research (3 Marks)
- (iii) Historical Analogy (3 Marks)
- (iv) Delphi Method (3 Marks)

Question TWO

The following information relates to the demand for XYZ product for the period 2010 to 2017.

Year	2017	2018	2019	2020	2021	2022	2023	2024
Actual sales	300	215	343	457	219	220	215	237

Required;

- a) Calculate a three-year moving average (8 Marks)
- b) Plot the series and the trend on the same graph (8 Marks)
- c) Produce a sales forecast for 2025 stating assumptions, if any (4 Marks)

Question THREE

Pendo ltd had the following tabulations, its actual sales in units for six months were as following;

Month	January	February	March	April	May	June
Actual forecast	100	94	106	80	68	94

Required ;

- a) Calculate forecasts for the remaining five months using simple exponential smoothing with $\alpha = 0.2$ (10 Marks)
- b) Calculate the MAD for the forecasts (10 Marks)

Question FOUR

- a) Kilifi store found that in a four-month period, the best forecast was derived by using 40 percent of the actual sales for the most recent month, 30 percent of two months ago, 20 percent of three months ago, and 10 percent of four months ago. If actual sales experience was

Month 1	Month 2	Month 3	Month 4	Month 5
No. of litres	100	80	110	?

Required:

- (i) Calculate the forecast for month 5 (4 Marks)
(ii) Suppose sales for month 5 actually turned out to be 120. Calculate the forecast for month

6. (4 Marks)

- b) Discuss the features and advantages of moving averages (12 Marks)

Question FIVE

Demand for milk at Wamunyoroltd has increased steadily in the past few years, as seen in the following table.

Year	1	2	3	4	5	6
No. of litres	65	70	72	76	78	

The C.E.O of the company predicted six years ago that demand in year 1 would be 62 litres.

Required:

- a) Using exponential smoothing with a weight $\alpha = 0.20$, develop forecasts for years 2 through 6. (10 Marks)
b) Exponential smoothing techniques have become well accepted in the modeling techniques. Describe the major reasons. (10 Marks)