NAMIBIA UNIVERSITY
OF SCIENCE AND TECHNOLOGY

FACULTY OF COMMERCE, HUMAN SCIENCE AND EDUCATION
DEPARTMENT OF MARKETING, LOGISTICS AND SPORTS MANAGEMENT

QUALIFICATION: BACHELOR OF LOGISTICS AND SUPPLY CHAIN MANAGEMENT	
QUALIFICATION CODE: 07BLSC	LEVEL: 6
COURSE CODE: FDA621S	COURSE NAME: FORECASTING AND DATA ANALYSIS
SESSION: JANUARY 2023	PAPER: THEORY
DURATION: 3 HOURS	MARKS: 100

SECOND OPPORTUNITY EXAMINATION QUESTION PAPER	
EXAMINER(S)	Ms. Emilia Salomo (FT & DI) Mr. Tangi Nepolo (PT)
MODERATOR:	Ms Gloria Tshoopara

INSTRUCTIONS
1. Answer **ALL 4** questions in all sections   2. Read each question carefully   3. Write as legible and precise as possible   4. Indicate your class lecturer's name on your answer sheet

THIS EXAMINATION QUESTION PAPER CONSISTS OF 5 PAGES (Including this front page)

QUESTION 1: [20 MARKS]

Match the statements below with the best-described technique. Please do not rewrite the information—just the statement number followed by the matching technique.
   e.g. 1. MAPE

NB. Each statement only describes ONE technique. Writing two more will cost you marks.

| Statements	Technique
1. A type of forecast used for new product planning, capital expenditures, facility location or expansion and R&D.	Cycles
2. When an independent party ask individual experts questions relating to an underlying forecasting problem to seek a consensus forecast by providing feedback to the various experts in a manner that prevents the identification of unique positions	Delphi method
3. A forecasting technique that uses advertising initiatives to determine demand	Executive Opinion
4. A forecasting method that does not rely on rigorous mathematical computations.	Exponential smoothing forecast
5. A sequence of data points that are measured typically at successive times at regular time intervals is known as:	MAD
6. Using the latest observation in a sequence of data to forecast the next period is	MAPE
7. A forecast based on the previous forecast plus a percentage of the forecast error	Naïve forecasting
8. Data exhibit a steady growth or decline over time.	Qualitative data methods
9. Data exhibit upward and downward swings over a very long-time frame.	Simple Linear regressions
10. Eliminate the problem of positive errors cancelling negative errors	Strategic forecast
	Time series
	Trend
	Weighted moving average

QUESTION 2 [10 MARKS]

The below graph represents data analysis conducted to determine any correlation between the selling price of the house and the house sales in respective geographic locations.

Graph one shows the correlation between the house sales for houses in Klein Windhoek and the selling price. While graph 2 shows the result for the correlation between the house sales for dwellings located in Katutura and the selling price
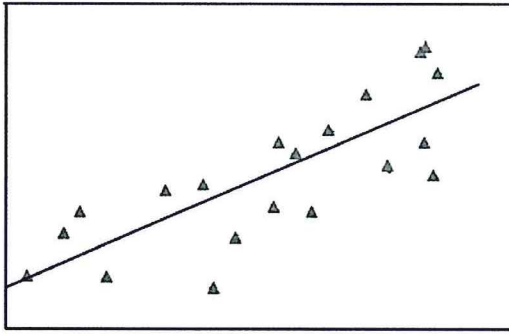
Graph 1
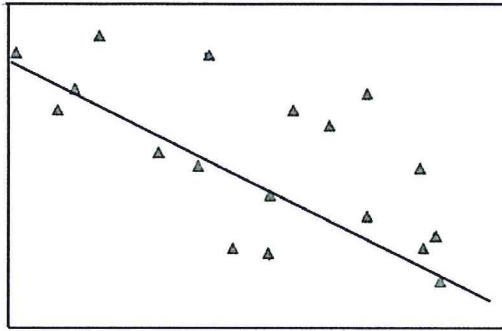
Graph 2

2.1 What forecasting method was used in the above scenario?   [1 mark]

2.2 Interpret the results of each graph   [4 marks]

A client comes to you and would like to know the price of their house in the same area, which has four bedrooms, three bathrooms, a guest toilet, and no swimming pool. The size of the erf is 629 m². Below is the excel output.

	Coefficients	andard Err	t Stat	P-value	Lower 95%	Upper 95%	ower 95.0%	pper 95.0%
Intercept	302785.4823	1456554	0.207878	0.843526	-3441406.616	4046978	-3441407	4046978
bedroom	393426.4856	375572.8	1.047537	0.342825	-572014.1817	1358867	-572014	1358867
toilets	-96722.20708	365611	-0.26455	0.801915	-1036555.22	843110.8	-1036555	843110.8
ERF size square meter	1288.433712	1983.311	0.649638	0.544586	-3809.830648	6386.698	-3809.83	6386.698
Swimming pool	362822.513	285400.6	1.271275	0.259559	-370822.9651	1096468	-370823	1096468

2.3 Write down the formula for the above. [1 mark]

2.4 How much will the house cost?   [4 marks]

QUESTION 3 [40 MARKS]

Volkswagen's famous Beetle sales have grown steadily at Zimmerman's garage during the past five years (see table below). The sales manager had predicted in 2014 that 2015 sales would be 410 VWs.

NB: Please round your answers to two decimal places.

Year	Sales
2015	450
2016	495
2017	518
2018	563
2019	584
2020	?

2.1 Forecast above data using;
   a) Exponential Smoothing with $\alpha=0.30$. [8 marks]
   b) 3 months moving average [6 marks]

2.2 Compute and interpret below for both **exponential smoothing and 3-month moving average:**

   a) MAD [6 marks]
   b) MSE [6 marks]
   c) MAPE [6 marks]
   d) Tracking Signal [6 marks]
   e) Which forecasting method will you recommend and why? [2 marks]

QUESTION 4 [30 MARKS]

Mr Shilongo has been running a small retail outlet in the northern town of Tsumeb, selling Fast Moving Consumers Goods (FMCGs), his business has experienced rapid growth over the years, and inventory management has been a growing concern. He has since decided to offer students internships as demand planners; you are one of the lucky students. You have suggested demand forecasting as a solution to managing the inventory. However, Mr Shilongo has no clue where to start but is keen on the idea.

(a) Explain to Mr Shilongo the importance of Demand forecasting to his business. [6 marks]

(b) The practical examples help Mr Shilongo draft a detailed systematic forecasting approach explaining the various steps involved in forecasting. [20 marks]

(c) What forecasting method/s is/are appropriate for Mr Shilongo's s business? Justify your answers [4 marks]

GRAND TOTAL: 100 MARKS