



ZIMBABWE EZEKIEL GUTI UNIVERSITY

FACULTY OF LAW, BUSINESS INTELLIGENCE AND ECONOMICS

DEPARTMENT OF ECONOMICS, MARKETING AND ENTREPRENEURSHIP

EXAMINATION PAPER

MODULE CODE : CBM 414
MODULE TITLE : PRODUCTION AND OPERATIONS
MANAGEMENT
DURATION : 3 Hours
LEVEL : 4.1
DATE : 10 FEB 2025

INSTRUCTIONS TO CANDIDATES:

1. No cell phones are allowed in the examination venue.
2. Use of silent, non-programmable calculators is allowed
3. Answer question number **one (1)** in Section A (Compulsory) and any other **three (3)** questions in Section B.
4. Begin each question on a new page.
5. The number of marks for each question or part question is shown in brackets []
6. Show all workings, where applicable.

SECTION A

CASE STUDY: Improving efficiency at Nisirimu Textile Manufacturing

The problems at NTM began several years ago when the previous chief executive took the decision to double production capacity. He could not have foreseen the worldwide recession and how this would reduce the demand for the textiles made in the factory. The following figures tell their own story and the cost impact on the business was now serious:

	2021	2022	2023
Maximum capacity (metres)	5m	5m	5m
Actual annual output (metres)	4m	3.7m	3.0m
Selling price per metre	\$3	\$3	\$2.7
Annual fixed costs	\$3 million	\$3 million	\$3 million
Variable costs per metre	\$2	\$2	\$2.2

The new board of directors had one key objective – to cut production costs to restore company profitability. They realised that this would mean cutting both overhead costs – possibly moving to a smaller factory – and variable labour costs per unit. Labour costs per unit depended on labour productivity and wage costs. Wage rates had been increased in 2023 but productivity had not increased. The directors were considering three options:

- Close part of the factory and sell it to another business – this might raise \$5 million in capital and would reduce annual fixed costs by \$1 million. Fifty jobs would be cut.
- Keep the whole factory open but cut the number of workers (by 100) and managers to increase productivity.
- Keep the factory open and keep all existing workers but offer part-time and temporary contracts to all workers and some managers.

QUESTION 1

- a. Calculate the capacity-utilisation rates in each of the three years. **[6 marks]**
- b. Calculate the level of profits made in each of the three years. **[6 marks]**
- c. Analyse the disadvantages to NTM of operating at a low rate of capacity utilisation. **[5 marks]**
- d. Recommend which option the directors should decide on, justifying your answer fully. **[8 marks]**

SECTION B

Essay Questions

QUESTION TWO

Using practical examples of a well-known manufacturing enterprise in Zimbabwe, evaluate the transformation and value addition activities of one of its products.

[25 marks]

QUESTION THREE

a) Forecasting is actually planning and foretelling the unpredictable future, hence it must be done with due diligence. Explain three characteristics that makes forecasting good and reliable. **[10 marks]**

b) A company which is in service industry provided the following data about complaints received from customers over a period of time:

Period	Number of Complaints
1	60
2	65
3	55
4	58
5	64

From the provided data, prepare forecasted number of complaints for the company in period 6 using the following forecasting approaches:

- i) Naive Approach **[3 marks]**
- ii) Three period moving average **[5 marks]**
- iii) Exponential Smoothing with a smoothing constant of 0.40. **[7 marks]**

QUESTION FOUR

a) "Quality can be subjective, just like beauty which is in the eyes of the beholder" Refuting this notion, analyse three key dimensions from which quality can be defined. **[10 marks]**

b) 'Both, failure to produce quality products and even ensuring production of quality products has proven to be costly'. Discuss three types of costs associated with both not producing and producing quality products. **[15 marks]**

QUESTION FIVE

To succeed in this new era of rapid transformation, manufacturing enterprises must recognize the major change underway and harness digital technology in production and operations. Assess this notion in light of Industrie 4.0. **[25 marks]**

[END OF PAPER]