

The  
Management  
University  
of Africa



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**DIPLOMA UNIVERSITY EXAMINATIONS**  
**SCHOOL OF MANAGEMENT AND LEADERSHIP**  
**DIPLOMA IN MANAGEMENT AND LEADERSHIP/**  
**DIPLOMA IN SUPPLY CHAIN MANAGEMENT**

**DML 104:                   INTRODUCTION TO OPERATIONS  
MANAGEMENT**

**DATE:                   7<sup>TH</sup> APRIL 2026**

**DURATION:       2 HOURS**

**MAXIMUM  
MARKS: 70**

**INSTRUCTIONS:**

1. Write your registration number on the answer booklet.
2. **DO NOT** write on this question paper.
3. This paper contains **SIX (6)** questions.
4. Question **ONE** is compulsory.
5. Answer any other **FOUR** questions.
6. Question **ONE** carries **30 MARKS** and the rest carry **10 MARKS** each.
7. **Write all your answers in the Examination answer booklet provided.**



## **QUESTION ONE**

**Read the Case Study below carefully and answer the questions that follow:**

### **SAFARI PURE DRINKING WATER LTD**

Safari Pure Drinking Water Ltd is a small company in Nakuru that produces bottled drinking water for local shops, supermarkets, and schools. Demand for bottled water rises sharply during hot seasons and public events, but drops during cold months. The company uses simple machines for filtering, bottling, and packaging water. Recently, customer complaints have increased because some bottles leak or are not sealed properly. Quality checks are mainly done at the end of the production line, and defective bottles are reworked, causing delays.

The production manager plans output using rough estimates based on past experience rather than formal forecasting. Sometimes the company produces too much and bottles remain in storage for long periods, increasing storage costs. At other times, the company runs out of stock and loses customers. The factory has space for expansion, and management is considering buying a new high-speed bottling machine. However, they are unsure whether demand will be high enough throughout the year to fully use the machine.

Workers in the plant perform repetitive tasks such as filling, sealing, labeling, and packing. There are no clear performance targets, and all workers are paid the same fixed wage regardless of output. Some workers feel overworked while others have little to do, depending on the production stage. The company also struggles with scheduling deliveries. Drivers sometimes wait long hours for orders to be ready because production and transport are not well coordinated.

You have been asked to advise the company on how to improve its operations.

**Required:**

- a) In reference to the case study elaborate four problems caused by not using proper forecasting (4 marks)
- b) Discuss two simple forecasting methods the company can use (4 Marks)
- c) Suggest four ways the company can improve capacity before buying a new machine (8 marks)
- d) Explain two inventory problems and one scheduling problem in the case and give practical solutions. (6 marks)
- e) Recommend four actions the company can take to improve product quality and worker productivity. (8 Marks)

## QUESTION TWO

- a) A small bakery introduces a new type of healthy bread. Explain two important factors the bakery should consider when designing this new product. (4 marks)
- b) The bread sells for KSh 80 per loaf. Variable cost is KSh 50 per loaf and fixed costs are KSh 60,000 per month. Calculate the break-even number of loaves per month. (6 marks)

## QUESTION THREE

- a) A hardware shop sells cement, paint, and nails. Explain the difference between independent and dependent demand using examples from the shop. (4 marks)
- b) Analyse three factors the owner should consider when choosing a location for a new branch. (6 marks)

#### QUESTION FOUR

a) A tailoring business receives many uniform orders before school opening seasons. Describe five aggregate planning strategies the business can use to handle high seasonal demand.

**(5 Marks)**

b) Explain five advantages of using a process layout in the tailoring business.

**(5**

**Marks)**

#### QUESTION FIVE

a) Analyse five assumptions of linear programming

**(5 Marks)**

b) Examine five critical decisions made in Operations Management. **(5 Marks)**

#### QUESTION SIX

A garment factory produces school uniforms but faces frequent defects and low worker morale.

a) Examine two possible causes of poor quality in the factory.

**(4 Marks)**

b) Explain how work measurement can help improve productivity.

**(3 Marks)**

c) Suggest three financial incentive plans that could motivate workers to improve performance. **(3**

**Marks)**