

The
Management
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UNDERGRADUATE UNIVERSITY EXAMINATIONS
SCHOOL OF MANAGEMENT AND LEADERSHIP
DEGREE OF BACHELOR OF MANAGEMENT AND LEADERSHIP/
BACHELOR OF COMMERCE

BMT 402/ BCM 322: PRODUCTION AND OPERATIONS MANAGEMENT

DATE: 30TH MARCH 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 **THREE** questions.
6. Question **ONE** carries **25 MARKS** and the rest carry **15 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 a, b and c:

Case Study: Optimizing Operations at Karibu Dairy Limited

Karibu Dairy Limited is a mid-sized milk processing company based in Eldoret, Kenya. Established in 2012, the company has grown steadily by sourcing raw milk from over 2,000 smallholder farmers in the Rift Valley region. As demand for processed milk and yogurt increased in both urban and rural markets, the management recognized the need to formalize and optimize their production and operations processes. Until 2019, most operations were managed manually, leading to inefficiencies, waste, and delays in order fulfillment.

The company's new Operations Manager, an MBA graduate, initiated a transformation project by introducing foundational principles of production and operations management (POM). The first step involved conducting a process flow analysis of the factory's operations—from milk reception to packaging and distribution. The analysis revealed bottlenecks in quality control and inconsistencies in the use of machinery. Additionally, raw milk rejection rates were high due to poor handling and transportation by farmers. To address these challenges, the manager introduced Total Quality Management (TQM) practices and invested in basic automation tools, including temperature sensors and digital pasteurization timers. He also established training sessions for both staff and milk suppliers, emphasizing hygienic practices and adherence to quality standards.

Through lean management techniques, the company reduced waste and introduced standardized operating procedures (SOPs) that cut processing time by 30%. Within a year, Karibu Dairy reported a 25% increase in production capacity and a significant reduction in customer complaints. The turnaround not only improved internal efficiency but also enhanced supplier relationships, thanks to timely payments and reduced milk rejection. The company's reputation grew, leading to new partnerships with regional supermarkets and a contract to supply yogurt to local schools.

Karibu Dairy's case demonstrates the strategic value of applying production and operations management principles in local industries. By integrating POM tools such

as process flow analysis, quality control, and lean techniques, the company was able to increase productivity, reduce costs, and respond effectively to market demand. This local example reinforces the relevance of MBA-level POM knowledge in addressing real-world challenges in emerging markets.

Required:

- a) Analyse the key operational inefficiencies at Karibu Dairy before the transformation project **(10 marks)**
- b) Discuss the production and operations management techniques the company implemented to improve performance. **(10 marks)**
- c) Explain the outcomes of introducing production and operations management practices at Karibu Dairy. **(5 marks)**

QUESTION TWO

- a) Explain the importance of demand forecasting in production and operations management and how inaccurate forecasts affect organizational performance **(10 marks)**
- b) Compare and contrast qualitative and quantitative demand forecasting methods. Provide examples of situations where each would be most appropriate. **(5 marks)**

QUESTION THREE

- a) Discuss the role of production planning in enhancing productivity, and how poor planning can impact operational efficiency **(10 marks)**
- b) Discuss the relationship between labor productivity and process improvement initiatives. **(5 marks)**

QUESTION FOUR

- a) Analyse how process management contribute to operational excellence, and the role of technology in supporting effective process management
(10 marks)
- b) Evaluate the impact of Industry 4.0 technologies (e.g., IoT, AI, robotics) on process management in manufacturing and the potential challenges organizations may face in implementation
(5 marks)

QUESTION FIVE

- a) Discuss why forecasting is considered a critical function in production and operations management, and how it influence decision-making in supply chain and capacity planning.
(10 marks)
- b) Differentiate between time series and causal forecasting methods used in production and operations management and the scenarios each method would be most appropriate?
(5 marks)

QUESTION SIX

- a) Discuss the significance of the project life cycle in effective project management and how understanding the life cycle improve project execution and control
(10 marks)
- b) Evaluate the role of the triple constraint (time, cost, and scope) in project management. Explain how a project manager can effectively balance these elements when managing complex projects
(5 marks)