



ZIMBABWE EZEKIEL GUTI UNIVERSITY

FACULTY OF LAW, BUSINESS INTELLIGENCE AND ECONOMICS

DEPARTMENT OF ECONOMICS, MARKETING AND ENTREPRENEURSHIP

EXAMINATION PAPER

MODULE CODE : CPS412
MODULE TITLE : Materials Planning and Production Control
SPECIAL REQUIREMENTS : -
DURATION : 3 Hours
LEVEL : 4.1
DATE : 23 SEP 2025

INSTRUCTIONS TO CANDIDATES:

1. No cell phones are allowed in the examination venue.
2. Answer any **FOUR (4)** questions.
3. The number of marks for each question or part question is shown in brackets []
4. Use of non-programmable calculators is allowed.
5. Show all your workings in order to gain full marks.
6. Begin each answer on a new page.
7. **DO NOT OPEN THIS PAPER UNTIL THE INVIGILATOR INSTRUCTS YOU.**

QUESTION ONE

Case Study: Natpak Africa Pvt Ltd and Production System Optimization

Natpak Africa Pvt Ltd, a leading packaging manufacturer in Zimbabwe, faced challenges in optimizing its production processes to meet increasing customer demand. The company operated a batch production system, which allowed for flexibility in producing various packaging products. However, this approach led to longer lead times and higher costs. To enhance efficiency, Natpak adopted a product layout, aligning its machinery and workstations based on the sequence of operations for its most popular products. This change facilitated smoother workflows and reduced handling time. Furthermore, the company implemented assembly line balancing techniques to ensure an even distribution of tasks among workers, minimizing bottlenecks and improving productivity.

Several factors influenced Natpak's layout design, including product variety, production volume, and space constraints. The company also embraced a continuous improvement philosophy, regularly evaluating its layout and production systems to adapt to changing market demands. As a result of these strategic changes, Natpak Africa Pvt Ltd significantly improved its production efficiency and reduced lead times, positioning itself as a competitive player in the packaging industry.

Answer the following questions according to the case study above

(a) What production system did Natpak Africa Pvt Ltd initially use, and what challenges did it face? [10 marks]

(b) How did the adoption of a product layout and assembly line balancing improve Natpak's production efficiency? [15 marks]

QUESTION TWO

Evaluate how facility layout design impacts scalability in mass production environments.
[25 marks]

QUESTION THREE

As an Inventory Manager in a manufacturing organization. Describe how you contribute to the overall organizational objectives. [25 marks]

QUESTION FOUR

Discuss the role of capacity planning and the Theory of Constraints (TOC) in designing efficient production schedules. [25 marks]

QUESTION FIVE

Analysé how materials management KPIs drive performance improvement and decision-making. [25 marks]

END OF EXAMINATION

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