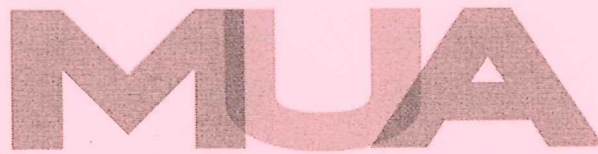


The
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DIPLOMA UNIVERSITY EXAMINATIONS

SCHOOL OF MANAGEMENT AND LEADERSHIP

DIPLOMA IN MANAGEMENT AND LEADERSHIP/DIPLOMA IN
SUPPLY CHAIN MANAGEMENT

DML 104 : INTRODUCTION TO OPERATIONS MANAGEMENT

DATE: 5TH DECEMBER 2024

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:

OPTIMIZING SUSTAINABLE PRODUCTION AT GREENTECH SOLUTIONS

In the dynamic landscape of today's rapidly evolving market, XYZ Corporation, a prominent global retailer, is confronted with the imperative task of strategically optimizing its intricate supply chain operations. The overarching goal is to adeptly meet the ever-growing demands of customers while navigating the complex challenges posed by the surge in e-commerce and the continuous shift in consumer preferences.

Recognizing the pivotal role that technology and data analytics play in shaping modern business strategies, XYZ Corporation is poised to harness these tools to their full potential. The company envisions a comprehensive transformation of its production and distribution processes, integrating cutting-edge technologies and advanced analytics to achieve a seamless and efficient supply chain.

XYZ Corporation's primary objective revolves around elevating the efficiency of its inventory management system. By leveraging state-of-the-art technologies and data-driven insights, the company aspires to implement real-time tracking and forecasting mechanisms. This strategic move aims to optimize stock levels, ensuring that inventory aligns precisely with fluctuating consumer demands. Consequently, this proactive approach not only seeks to minimize excess inventory but also aims to prevent stockouts, thereby striking a balance that enhances overall operational efficiency.

In tandem with inventory management improvements, XYZ Corporation is committed to diminishing lead times throughout its supply chain. This multifaceted effort involves streamlining various operational facets, from procurement to production and distribution. The company recognizes that shorter lead times not only contribute to increased responsiveness to market dynamics but also enhance the agility required to swiftly adapt to changing consumer preferences.

Furthermore, the company places paramount importance on upholding product quality and ensuring customer satisfaction throughout the supply chain optimization process. By integrating technology into quality control measures and customer

feedback systems, XYZ Corporation strives to maintain and even elevate its product quality standards. This customer-centric approach aligns with the corporation's overarching commitment to providing a seamless and satisfying shopping experience.

In essence, XYZ Corporation's strategic vision encompasses a holistic transformation of its supply chain operations. By embracing technology and data analytics, the company aims to achieve an optimal balance between inventory management, lead time reduction, and overall operational efficiency. In doing so, XYZ Corporation aspires to not only meet but exceed customer expectations in an ever-evolving market landscape.

Required:

- a) Examine the ways the case study proposes that XYZ Corporation could gain advantages through forecasting in its supply chain operations. (10 Marks)
- b) Explain the importance of inventory management in the context of the case study (10 Marks)
- c) Explain how XYZ Corporation plans to handle uneven demand in its aggregate planning. (10 Marks)

QUESTION TWO

- a) Explain the significance of forecasting in the design of production systems. (5 Marks)
- b) Discuss factors to consider when designing products for customer (5 Marks)

QUESTION THREE

- a) Discuss the role of shop-floor control in managing projects. (6 Marks)
- b) Distinguish between independent and dependent demand, providing examples for each. (4 Marks)

QUESTION FOUR

- a) Explore the importance of capacity management on the overall production system. (6 Marks)

- b) Discuss the factors influencing facility location decisions in operations management, citing examples. (4 Marks)

QUESTION FIVE

- a) Assess the aggregate planning techniques employed in addressing uneven demand. (5 Marks)
- b) Discuss the dimensions of quality products (5 Marks)

QUESTION SIX

- a) Describe the product design process (5 Marks)
- b) Explain the assumptions of linear programming (5 Marks)