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End Semester Examination, December 2024
Program – BBA/BBA-BIA/BBA-ACCA/BBA-LSCM-III Sem
Operations Management (MCMC203)

Time: 2.5 hrs.

Max Marks: **50**

Note: *All Questions are compulsory. Marks are indicated against each question.*

PART-A

Q.1 *Attempt any five.*

- (a) Define and explain the concept of Kaizen. What are its primary objectives? [CO-1] [L-1] **2**
- (b) Describe any two contributions of Deming. How did these contributions impact quality management practices? [CO-1] [L-2] **2**
- (c) Define supply chain management and provide an example illustrating its application. [CO-1] [L-1] **2**
- (d) Explain the global strategies in supply chain management in detail. How do these strategies address global competition and customer demand? [CO-1] [L-3] **2**
- (e) Explain the term Six Sigma and discuss how it is applied to improve process efficiency. [CO-1] [L-2] **2**
- (f) Identify and explain any two principles of facility layout. [CO-1] [L-2] **2**
- (g) Define demand-pull logic in lean manufacturing and describe its purpose. [CO-1] [L-1] **2**

2x5

PART-B

- Q.2 A manufacturing company places a semi-annual order of 24,000 units at a price of \$20 per unit. Its carrying cost is 15% and the order cost is \$12 per order. What is the most economical order quantity? [CO-2] [L-5] **10**

OR

A company has a demand of 1000 units, an ordering cost of Php 10, and a holding cost of Php 0.5 per unit per year. The production rate is 8 units per day, and the consumption rate is 4 units per day. Calculate EPQ [CO-2] [L-5] **10**

Q.3 Case Scenario:

XYZ Corporation is a mid-sized manufacturing company specializing in producing electronic components for the automotive industry. The company has a vast inventory, consisting of over 500 types of parts and raw materials, ranging from inexpensive nuts and bolts to high-value microchips. However, the management has recently noticed that inventory costs have been rising, affecting the company's overall profitability.

The inventory management team has been tasked with optimizing the inventory by focusing on the most critical items that directly impact production costs. They are considering using the ABC analysis method to categorize inventory items based on their importance and value contribution.

Your task is to discuss how XYZ Corporation could apply the concept of ABC analysis in this scenario, detailing the steps involved, and the categorization process of this approach for improving XYZ Corporation's inventory management. [CO-3] [L-2,3] **10**

OR

Case Scenario:

FreshGro, a rapidly growing online grocery retailer, manages a diverse inventory of over 1,000 products, including fresh produce, packaged foods, beverages, and household essentials. With the increasing demand for online grocery shopping, FreshGro has observed significant challenges in managing stock levels, especially with high-demand items frequently going out of stock and low-demand items accumulating in the warehouse. This has led to high holding costs and occasional customer dissatisfaction.

The inventory team at FreshGro is considering implementing ABC analysis to prioritize their inventory management efforts, focusing more closely on products that contribute most to sales and profitability.

Question:

Discuss how FreshGro could implement the ABC analysis approach in their inventory management strategy. Describe the steps involved, and how products would be categorized. [CO-3] [L-2,3] **10**

- Q.4 Analyze the benefits of Total Quality Management (TQM) and discuss how they can be applied to improve processes and customer satisfaction in a manufacturing company. Provide examples of TQM that can be used in this context. [CO-4] [L-5] **10**

OR

Case Scenario:

TechFix, a smartphone repair service center, has recently noticed an increase in customer complaints. Customers are reporting issues such as delays in repair times, incomplete repairs, unavailability of parts, and inconsistent customer service. To address these complaints, the management has decided to identify and analyze the root causes of these problems in order to improve their service quality.

Question: What statistical quality tool would be most appropriate for TechFix to use in identifying and organizing the possible root causes of their service issues? Explain how this tool could be used in this scenario and identify potential root causes for each of the categories provided. [CO- 4] [L-4] **10**

- Q.5 **Case Scenario:**

EcoPower Solutions is a company specializing in the installation and maintenance of solar energy systems. Recently, the company invested in a new type of solar inverter for residential installations. Over the first few months, they noticed that some units experienced minor issues, requiring adjustments or component replacements. After this initial period, the inverters operated reliably with minimal issues for several years. However, as the inverters approached their 10th year, the maintenance team observed an increase in failures, indicating that components were wearing out.

The company's management wants to understand this pattern of failures to better plan for future maintenance schedules and replacements.

Question: Explain how the concept of the Bathtub Curve applies to EcoPower Solutions' observations of their solar inverters' life cycle. Discuss the three phases of the curve and how they relate to the equipment's performance over time. CO-5] [L-3] **10**

OR

Describe and differentiate between the various types of maintenance management. Provide examples of how each type is applied in real-world settings [CO- 5] [L-4] **10**