



K.R. MANGALAM UNIVERSITY

THE COMPLETE WORLD OF EDUCATION

Rollno.....

End Semester Examination, December 2024
Program – BBA-MBA
Production and Operations Management (MCMC205)

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 equipment life cycle. What are its primary objectives? [CO-1] [L-1] **2**
- (b) Describe any two types of maintenance management. [CO-1] [L-2] **2**
- (c) Define operations management and provide an example illustrating its application. [CO-1] [L-1] **2**
- (d) Explain the concept of fishbone chart in detail. [CO-1] [L-3] **2**
- (e) Explain the term TQM and discuss how it is applied to improve process efficiency. [CO-1] [L-2] **2**
- (f) Identify and explain any two types of facility layout. [CO-1] [L-2] **2**
- (g) Define processing and waiting waste in lean manufacturing and describe its purpose. [CO-1] [L-1] **2**

2x5

PART-B

- Q.2 The Sunny Equipment Company estimates its carrying cost at 15% and its ordering cost at \$9 per order. The estimated annual requirement is 48,000 units at a price of \$4 per unit. What is the most economical number of units to order?
[CO-2] [L-5] **10**

OR

Ray Ltd. has been purchasing items quarterly of 900 units. The cost per unit is \$12, the order cost is \$16 per order, and the carrying cost is 25%. How much can Ray Ltd. save per year by purchasing the item in the most economical quantities?
[CO-2] [L-5] **10**

Q.3 Case Scenario:

PrimeTech Electronics is a small company specializing in assembling electronic components for consumer gadgets. Recently, the management has noticed a gradual increase in assembly times and minor quality issues, such as loose connections and minor cosmetic defects. After discussing these concerns, the management decided not to overhaul their entire process but instead encouraged employees to identify small, quick fixes that could help improve the workflow.

To support this approach, PrimeTech Electronics introduced a program where workers are encouraged to observe their work environment and suggest small, immediate changes that could help reduce waste,

increase productivity, and improve quality. They call this program “Improvement Hour,” during which employees can dedicate an hour each week to implement small changes they believe could make a difference.

For example:

- One worker proposed moving commonly used tools closer to the assembly line to reduce walking time.
- Another suggested marking equipment with color-coded labels to help new employees quickly find what they need.

PrimeTech also started conducting weekly meetings where employees share successful improvements and discuss areas where further minor changes might help. Management praises even small contributions and highlights how these collective improvements add up over time.

Question:

What continuous improvement approach is PrimeTech Electronics using to enhance their production process? Identify the key principles of this approach and discuss how this method can lead to long-term productivity and quality improvements.

[CO-3] [L-2,3] **10**

OR

Case Scenario:

Groody, a rapidly growing online grocery retailer, manages a diverse inventory of over 2,000 products, including fresh produce, packaged foods, beverages, and household essentials. With the increasing demand for online grocery shopping, Groody 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 Groody 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 Groody 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 Case Scenario:

Excel Manufacturing Ltd. is a medium-sized company that produces home appliances, including microwaves, refrigerators, and washing machines. In recent years, Excel has faced challenges with product quality, frequent returns due to minor defects, and declining customer satisfaction. The management has decided to implement Total Quality Management (TQM) to enhance product quality, streamline processes, and increase customer satisfaction.

Under TQM, Excel Manufacturing aims to focus on customer-centric quality improvements, employee involvement, and process standardization. Management believes that by adopting TQM, they can create a culture of continuous improvement and long-term reliability in their products.

Analyze the benefits of Total Quality Management (TQM) for Excel Manufacturing Ltd. and discuss how TQM practices can help the company improve processes and enhance customer satisfaction.

[CO-4] [L-5] **10**

OR

List and briefly explain any three tools of Statistical Quality Control (SQC) and describe how each tool can be used to monitor or improve quality in a manufacturing process. [CO- 4] [L-2,3] **10**

Q.5 Context:

EcoHome Appliances is planning to launch a new line of eco-friendly kitchen products. Since these products are new to the market, historical sales data is unavailable. To estimate demand, the company’s management has decided to gather insights from industry experts, conduct focus group interviews with potential customers, and survey retail partners about expected interest and sales potential for these products.

Question:

Based on the context, identify the types of qualitative demand forecasting technique EcoHome Appliances is using. Explain how this technique can be helpful when launching a new product with no historical sales data.

[CO-5] [L-3] **10**

OR

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