Graphic Era HILL UNIVERSITY

Term Evaluation (Even) Semester Examination March 2025

Roll no.....

Name of the Course: MBA
Semester: 2
Name of the Paper: OPERATIONS AND SUPPLY CHAIN MANAGEMENT
Paper Code: MBA 203
Time: 1.5 hour

Maximum Marks: 50

Note:
(i) This question paper contains two Sections - A and B
(ii) Both Sections are compulsory
(iii) Answer any two sub questions from a, b & c in each main question of Section A. Each sub question carries 5 marks.
(iv) Section B, consisting of a case study, is compulsory. It is of 20 Marks.

Section A

Q1. (2X5 = 10 Marks)

a. What is the bullwhip effect in supply chains? How can it be minimized or avoided? [CO 1,2]

b. Explain the concept of Reverse Logistics. How does it contribute to sustainability in supply chains? [CO1,5]

c. Use the data in table given below to determine the forecasts for the next period using exponential smoothing method. Use $\alpha = 0.3$ and $\alpha = 0.5$ and the forecast for February as 38 units [CO 3,4]

Month	Jan	Feb	Mar	Apr	May	June	July	Aug	Sept	Oct	Nov	Dec
Demand	37	40	41	37	45	50	43	47	56	52	55	54

Q2. (2X5 = 10 Marks)

a. What are the key differences between efficient, responsive, and agile supply chains? Provide examples of products that would benefit from each type of supply chain. [CO 1,2]

b. What is aggregate planning, and why is it critical for an organization's operations? Discuss the various types of aggregate planning strategies. [CO 1,2]

c. Six jobs are to be scheduled in two machines in a manufacturing shop. All the six undergo processing on both machines as given in following table. Identify the best sequence using Johnson's rule. Also calculate idle time of the machines and waiting time for jobs (if any). [CO 3,4]

Job No	Machine 1	Machine 2
A	6	12
B	3	7
C	18	9
D	15	14
E	16	8
F	10	15

Q3. (2X5 = 10 Marks)

a. What are the key factors to consider when making layout decisions in a manufacturing facility? How do these decisions influence the production process? [CO 2,5]

b. Explain the major process strategies using the framework of relationship between volume and variety. Give examples of each type of process. [CO 2,5]

c. What are some of the major capacity considerations in a hospital? How do they differ from those in a factory? An assembly line is designed to operate most efficiently at an output of 175,000 units each week. However, it has an absolute maximum output capability of producing 1200 units each hour. The factory operates three 8-hour shifts each day on all seven days of the week. If the factory produced 148,000 units last week, what was the efficiency and capacity utilization? [CO 1,2,3]

Section B

(20 Marks)

Q4. Case Study [CO 5,6]

Supply Chain and Operations Management at XYZ Electronics

XYZ Electronics is a global manufacturer of consumer electronics. They specialize in smartphones, tablets, and laptops. The company operates with a complex global supply chain involving multiple suppliers, distributors, and retailers. Recently, XYZ Electronics has faced challenges with inventory management, particularly due to fluctuations in demand for their latest smartphone model. In addition, they have been dealing with delays in production due to transportation issues in their supply chain.

The company has been relying on third-party logistics (3PL) providers to handle warehousing and distribution. However, recent inventory shortages and delays in shipping have led to stockouts in several key markets. As a result, customer satisfaction has declined, and sales are lower than expected.

To address these issues, XYZ Electronics has decided to explore ways to improve supply chain integration and coordination, enhance logistics interfaces with production and marketing, and streamline operations management.

Q1 How can XYZ Electronics use supply chain integration and coordination to address the inventory management challenges and improve customer satisfaction?

Q2 What role can forecast and capacity planning play in improving XYZ Electronics' production efficiency and reducing stockouts in their supply chain?