PGDM-RM, 2022-2024
Supply Chain Logistics
RM 109
Trimester – I, End-Term Examination: September 2022

Time allowed: 120 min
Max Marks: 40

Roll No: _____

Instructions: Students are required to write Roll No on every page of the Answer Sheet. *Attempt all questions. Internal choices are given within.*

Section A (20 Marks)

A1. Discuss uncertainty as it relates to the overall logistical performance cycle. Discuss and illustrate how performance cycle variance can be controlled?

<OR>

Discuss the relationship between service level, uncertainty, safety stock, and order quantity. How can trade-offs between these elements be made? [5 marks] (CO 3)

A2. Discuss and illustrate the economic justification for establishing a warehouse.

<OR>

Why would a warehouse be described as a "necessary evil"? [5 marks] (CO 4)

A3. Provide an illustration that highlights the differences between consumer and industrial packaging.

<OR>

What is the primary purpose of bar coding in packaging? 1s the role of bar coding different in materials handling?

[5 marks] (CO 4)

A4. What is sensitivity analysis, and what is its role in systems design and analysis?

<OR>

Consider a firm such as Dell, with few production facilities worldwide. List the pros and cons of this approach and why it may or may not be suitable for the computer industry

[5 marks] (CO 2)

Section B: Case Study (20 Marks)
CASE STUDY

You are a production planner for DuoLever, a manufacturer of consumer goods. Each order has a set up cost of $600 and holding an item costs $5 per item/week. You have been provided with the demand (given below) for the next four week planning period for one of your products: Items consumed in the period do not incur any holding charges - similar to the problem in the video. You have an available balance today (time period 0) of 10 units and you want to ensure you maintain at least 10 units at all times.

Period 1:   120 units
Period 2:   130 units
Period 3:   100 units
Period 4:   150 units

Suppose you have following three production plans to produce the consumer goods.

a) Produce all quantity in one run in the first period and carry forward the inventory for the next periods
b) Identify the Fixed order quantity and produce in the period as in when required
c) Apply Silver Meal heuristic and identify the economic periods of production.

Analyze all the production plans and answer to the following questions

Q.1 What are the quantities planned to be produced in each period under the plan (a). What are the total set up and inventory holding costs?

Q.2 While implementing FOQ method, in which periods the production is planned and what are the inventory and set up costs in those corresponding periods.

Q.3 What is the total inventory and set up cost while applying Silver Meal heuristic?

Q.4 Which is the most efficient production plan?   [5+5+8+2 = 20 marks] (CO 1)

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