



Name:
Enrolment No:

UNIVERSITY OF PETROLEUM AND ENERGY STUDIES
End Semester Examination, December 2022

Course: Introduction to Supply Chain Management
Program: MBA LSCM
Course Code: LSCM 7014
Max. Marks: 100

Semester: I
Time : 03 hrs.

Instructions:

SECTION A
10Qx2M=20Marks

S. No.	Attempt all questions in this section	Marks	CO
Q 1	Explain the following and fill in the blank		
(a)	Cycle inventory exists because producing or purchasing in large lots allows a stage of the supply chain to A) exploit economies of scale and raise cost. B) exploit economies of scale and lower cost. C) exploit customers and lower cost. D) exploit customers and raise cost.	2	CO1
(b)	A graphical plot depicting the level of inventory over time is A. an inventory graph. B. a distribution inventory. C. an inventory drawing. D. an inventory profile.	2	CO1
(c)	Average flow time resulting from cycle inventory is equal to A. Cycle Inventory/Demand = Q/2. B. Cycle Inventory/Demand = Q/2D. C. Cycle Inventory = Q/2. D. Cycle Inventory = Lot Size = Q.	2	CO1
(d)	Lead time is the gap between A. when an order is placed and when it is received. B. when an order is received and when it is put away. C. when an order is received and when it is used. D. when an order is acknowledged and when it is received.	2	CO1
(e)	A goal of any supply chain manager is to	2	CO1

	<p>A. increase the level of safety inventory required in a way that does not adversely affect product availability.</p> <p>B. increase the level of safety inventory required regardless of the effect on product availability.</p> <p>C. reduce the level of safety inventory required regardless of the effect on product availability.</p> <p>D. reduce the level of safety inventory required in a way that does not adversely affect product availability.</p>		
(f)	<p>Although faster transportation is more expensive, a firm receives which benefit as a result of the faster transportation?</p> <p>A. Fewer rejects</p> <p>B. Higher profit</p> <p>C. Lower inventories</p> <p>D. More warehouses</p>	2	CO1
(g)	<p>Supply chain responsiveness includes the ability to do which of the following?</p> <p>A. Report financial results with a high degree of accuracy</p> <p>B. Meet a very high service level</p> <p>C. Ship product in larger quantities than your competitors</p> <p>D. Substitute similar products to fill orders when the desired products are unavailable</p>	2	CO1
(h)	<p>Which of the following customer needs will cause implied uncertainty of demand to increase?</p> <p>A. Product margin</p> <p>B. Lead time decreases</p> <p>C. Average stockout rate</p> <p>D. Average forced season end markdown</p>	2	CO1
(i)	<p>The purpose of supply chain management is</p> <p>A. provide customer satisfaction</p> <p>B. improve quality of a product</p> <p>C. integrating supply and demand management</p> <p>D. increase production</p>	2	CO1
(j)	<p>The sequence of a typical manufacturing supply chain is</p> <p>A. Storage–Supplier–manufacturing–storage–distributor–retailer–customer</p> <p>B. Supplier–Storage–manufacturing–storage–distributor–retailer–customer</p> <p>C. Supplier–Storage–manufacturing– distributor–storage–retailer–customer</p> <p>D. Supplier–Storage–manufacturing–storage– retailer–distributor–customer</p>	2	CO1

SECTION B

4Qx5M= 20 Marks

	Attempt all questions		
Q2	What is the difference between value chain and supply chain? What are the various ways in value can be defined? Explain each with an example	5	CO2
Q3	What are the various supply chain macro processes?	5	CO2
Q4	What is the difference between 3PL and 4PL?	5	CO2
Q5	Consider the supply chain involved when a customer purchases a book at a bookstore. Identify the cycles in this supply chain and the location of the push/pull boundary?	5	CO2
SECTION-C 3Qx10M=30 Marks			
Q	Attempt all questions		
Q6	Imagine that you have been appointed as the GM-Supply Chain in your organization and your organization is planning to commission a new plant. As a GM-Supply Chain, you have to take certain supply chain decision. Kindly classify your decision based on strategic, tactical/planning & operational. What are the decision you will take under the strategic, tactical/planning & operational & explain each?	10	CO3
Q7	What are the various types of Supply chain strategies mentioned by Hau Lee in his paper-“ Aligning supply chain strategies with Product uncertainties” ?	10	CO3
Q8	Uttarakhand power corporation limited has seen the demand of electricity consumption in Uttarakhand increase over the last six months. Observed demand has been 5500 MW, 5372 MW, 7314MW, 9808MW, 10413MW and 11961 MW. Forecast demand for period 3 using trend corrected exponential smoothing with $\alpha=0.1$ & $\beta=0.2$	10	CO3
SECTION-D 2Qx15M= 30 Marks			
	Attempt both questions in this section		
Q9	Best buy sells three models of smart meters, the Litepro, the Medpro, and the Heavypro. Annual demands for the three products are $D_L= 12,000$ for the Litepro, $D_M = 1,200$ units for the Medpro, and $D_H = 120$ units for the Heavypro. Each model costs Best Buy \$500. A fixed transportation cost of \$4,000 is incurred each time an order is delivered. For each model ordered and delivered on the same truck, an additional fixed cost of \$1,000 is incurred for receiving and storage. Best Buy incurs a holding cost of 20 percent. Evaluate the lot sizes that the Best Buy manager should order if lots for each product are ordered and delivered independently. Calculate the following: (a) Optimal order size (b) cycle inventory (c) Annual holding cost (d) Order frequency (e) Annual ordering cost (f) Average flow time (g) Annual cost	15	CO4

Q10	<p>Discuss ABC analysis and conduct ABC analysis for the following item given below:</p> <table border="1" data-bbox="228 415 1273 1194"> <thead> <tr> <th data-bbox="228 415 570 514">Item number</th> <th data-bbox="570 415 1040 514">Annual quantity used</th> <th data-bbox="1040 415 1273 514">Unit value</th> </tr> </thead> <tbody> <tr> <td data-bbox="228 514 570 611">1</td> <td data-bbox="570 514 1040 611">75</td> <td data-bbox="1040 514 1273 611">80</td> </tr> <tr> <td data-bbox="228 611 570 707">2</td> <td data-bbox="570 611 1040 707">150,000</td> <td data-bbox="1040 611 1273 707">0.9</td> </tr> <tr> <td data-bbox="228 707 570 804">3</td> <td data-bbox="570 707 1040 804">500</td> <td data-bbox="1040 707 1273 804">3.0</td> </tr> <tr> <td data-bbox="228 804 570 900">4</td> <td data-bbox="570 804 1040 900">18,000</td> <td data-bbox="1040 804 1273 900">0.20</td> </tr> <tr> <td data-bbox="228 900 570 997">5</td> <td data-bbox="570 900 1040 997">3,000</td> <td data-bbox="1040 900 1273 997">0.30</td> </tr> <tr> <td data-bbox="228 997 570 1094">6</td> <td data-bbox="570 997 1040 1094">20,000</td> <td data-bbox="1040 997 1273 1094">0.10</td> </tr> <tr> <td data-bbox="228 1094 570 1194">7</td> <td data-bbox="570 1094 1040 1194">10,000</td> <td data-bbox="1040 1094 1273 1194">2</td> </tr> </tbody> </table>	Item number	Annual quantity used	Unit value	1	75	80	2	150,000	0.9	3	500	3.0	4	18,000	0.20	5	3,000	0.30	6	20,000	0.10	7	10,000	2	15	CO4
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