



PRESIDENCY UNIVERSITY

BENGALURU

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End - Term Examinations – December 2025

Date: 29 – 12- 2025

Time: 09:30am – 12:30pm

School: SOM-PG	Program: MBA	
Course Code: OPS4111	Course Name: Production Operations and Logistics Management	
Semester: I	Max Marks: 100	Weightage: 50%

CO - Levels	C01	C02	C03	C04	C05
Marks	25	25	25	25	

Instructions:

- (i) Read all questions carefully and answer accordingly.
- (ii) Do not write anything on the question paper other than roll number.

Part A

Answer ALL the Questions. Each question carries 3 marks.

10Q x 3M=30M

1.	Explain Just-In-Time concept, its benefits for an organization.	3 Marks	L2	C01
2.	List down and explain in brief the seven wastes as per Toyota's Lean Management system.	3 Marks	L2	C01
3.	The average annual consumption of a material is 20,250 units at a price of Rs. 58.50 per units. The storage cost is 30% on an average inventory. Ordering cost is Rs. 36. How much quantity is to be purchased at a time?	3 Marks	L2	C01
4.	Explain how Block Chain, IOT and AI are reshaping Logistics Industry. Give suitable examples for each.	3 Marks	L2	C01
5.	A wrapping paper company produced 2,000 rolls of paper one day. Standard price is \$ 1/roll. Labor cost is \$ 160, material cost was \$ 50, and overhead is \$ 320. Determine the multifactor productivity.	3 Marks	L2	C01
6.	Distinguish between MRPI and MRP II.	3 Marks	L3	C02
7.	Define Forecast error and list the three types of errors.	3 Marks	L2	C01
8.	Explain in detail the different types of Inventory Control Techniques.	3 Marks	L2	C01

9.	What is the productivity growth if the past productivity is 75% & current productivity is 95%.	3 Marks	L2	CO1
10.	A manufacturer uses Rs. 10,000 worth of an item during the year. He has estimated the ordering costs as Rs. 26 per order and carrying costs as 12.6% of average inventory value. Find the optimal order size, number of orders per year, time period per order and total cost.	3 Marks	L3	CO2

Part B

Answer the Questions.

Total Marks 40M

11.	a.	<p>Compute Forecasting and Forecasting errors with formulas for the given sales data calculate the sales forecast for the year 2021 based on four-year simple moving average method. write all steps. Also calculate MAD, MSE and MAPE.</p> <table border="1" style="margin-left: auto; margin-right: auto;"> <thead> <tr> <th>Year</th> <th>2015</th> <th>2016</th> <th>2017</th> <th>2018</th> <th>2019</th> <th>2020</th> </tr> </thead> <tbody> <tr> <td>Sales</td> <td>1300</td> <td>1350</td> <td>1450</td> <td>1500</td> <td>1550</td> <td>1600</td> </tr> </tbody> </table>	Year	2015	2016	2017	2018	2019	2020	Sales	1300	1350	1450	1500	1550	1600	10 Marks	L3	CO2
Year	2015	2016	2017	2018	2019	2020													
Sales	1300	1350	1450	1500	1550	1600													

Or

12.	a.	Explain in detail Green Supply Chain concepts, its importance and examples of initiatives in Logistics Industry.	10 Marks	L3	CO2
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13.	a.	<p>The past data for the sales of wet grinders of a particular company in an area is shown below.</p> <table border="1" style="margin-left: auto; margin-right: auto;"> <thead> <tr> <th>Month</th> <th>Jan</th> <th>Feb</th> <th>March</th> <th>April</th> <th>May</th> <th>June</th> </tr> </thead> <tbody> <tr> <td>Sales</td> <td>585</td> <td>610</td> <td>675</td> <td>750</td> <td>860</td> <td>970</td> </tr> </tbody> </table> <p>Forecast the demand for the month of July 2001 using</p> <ol style="list-style-type: none"> 1. Simple Average for all previous months 2. A three-month moving average 3. A 3-month moving average where the weights are 0.5 for the latest month, 0.3 and 0.2 for the months previous to that respectively. 	Month	Jan	Feb	March	April	May	June	Sales	585	610	675	750	860	970	10 Marks	L3	CO3
Month	Jan	Feb	March	April	May	June													
Sales	585	610	675	750	860	970													

Or

14.	a.	Explain the different supply chain risks faced by organizations. Illustrate the countermeasures taken by organizations to handle disruptions and improve supply chain resilient networks.	10 Marks	L3	CO3
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15.	a.	<p>Thomson 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.</p> <ol style="list-style-type: none"> a. What is the most economical number of units to order? b. How many orders should be placed in a year? c. How often should an order be placed? 	10 Marks	L3	CO3
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Or

16.	a.	Transportation management and planning are critical aspects	10 Marks	L3	CO3
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		of logistics that focus on efficiently moving goods from one location to another. Interpret 3 key aspects of Transportation management and planning.			
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17.	a.	An item is used at a uniform rate of 60,000 units per year. No shortage is allowed and delivery is at an infinite rate. The ordering, removing and hauling cost is Rs. 13 per order, while inspection cost is Rs. 12 per order. Interest costs Rs. 4.066 and, deterioration and obsolescence cost Rs.0.004 respectively per year for each item actually held in inventory plus Rs. 0.02 per year per unit based on the maximum number of units in inventory. Calculate the EOQ. If lead time is 20 days, find re-order level.	10 Marks	L2	C03
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Or

18.	a.	How can organizations use forecast error analysis to improve their forecasting processes over time? Provide specific strategies or practices.	10 Marks	L3	C03
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Part C

Answer all the Questions. Each question carries 15marks

2Q x 15M=30M

19.	a.	Calculate by Using North-West Corner and Least Cost Methods, of transportation data given below. Conclude which method is the most cost efficient.	15 Marks	L3	C04																																			
		<table border="1" style="width: 100%; text-align: center;"> <thead> <tr> <th>Factories</th> <th>D1</th> <th>D2</th> <th>D3</th> <th>D4</th> <th>5</th> <th>Supply</th> </tr> </thead> <tbody> <tr> <td>F1</td> <td>1</td> <td>9</td> <td>13</td> <td>36</td> <td>51</td> <td>35</td> </tr> <tr> <td>F2</td> <td>24</td> <td>12</td> <td>16</td> <td>20</td> <td>1</td> <td>100</td> </tr> <tr> <td>F3</td> <td>14</td> <td>33</td> <td>1</td> <td>23</td> <td>26</td> <td>150</td> </tr> <tr> <td>Requirement</td> <td>100</td> <td>60</td> <td>50</td> <td>50</td> <td>40</td> <td>300</td> </tr> </tbody> </table>	Factories	D1	D2	D3	D4	5	Supply	F1	1	9	13	36	51	35	F2	24	12	16	20	1	100	F3	14	33	1	23	26	150	Requirement	100	60	50	50	40	300			
Factories	D1	D2	D3	D4	5	Supply																																		
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20.	a.	ABC Classification for Manufacturing Components: 1. Calculate the annual consumption value for each item. 2. Classify into A (top 80% of total value), B (next 15%), and C (remaining 5%)	15 Marks	L3	C04
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Item Number	Annual Usage (units)	Unit Cost (\$)
Item_1	526	39
Item_2	434	18
Item_3	565	32
Item_4	689	10
Item_5	519	24
Item_6	427	14
Item_7	935	38
Item_8	944	46
Item_9	252	16
Item_10	454	46
Item_11	643	5
Item_12	579	32
Item_13	210	45
Item_14	925	44
Item_15	456	41