

Reg No.: _____

Name: _____

APJ ABDUL KALAM TECHNOLOGICAL UNIVERSITY

Seventh Semester B.Tech Degree Examination (Regular and Supplementary), December 2020

Course Code: IE306**Course Name: SUPPLY CHAIN AND LOGISTICS MANAGEMENT**

Max. Marks: 100

Duration: 3 Hours

PART A*Answer any two full questions, each carries 15 marks.*

Marks

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| 1 | a) What is meant by supply chain management? | (3) |
| | b) Explain the 'operation decisions' of supply chain? | (5) |
| | c) Explain the four components of 'time series analysis'? | (7) |
| 2 | a) What do you mean by supply chain surplus? | (3) |
| | b) List out any five inventory-related metrics of supply chain performance with a brief description. | (5) |
| | c) Explain the various forecast errors. | (7) |
| 3 | a) What do you mean by 'supply chain efficiency' and 'supply chain responsiveness'? | (3) |
| | b) Explain the obstacles to achieving strategic fit. | (4) |
| | c) Differentiate moving average and exponential smoothing methods of forecasting. | (8) |

PART B*Answer any two full questions, each carries 15 marks.*

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| 4 | a) How is supply chain network design decisions classified? | (3) |
| | b) What are the main operational parameters which an aggregate planner has to identify? | (5) |
| | c) Explain the various costs involved in arriving at the total annual cost in inventory system. | (7) |
| 5 | a) Describe the following basic types of layouts: (1) Product layout (2) Process layout (3) Fixed position layout | (8) |
| | b) A company buys 20,000 bottles per annum. The cost per bottle is Rs. 4 and the ordering cost is Rs. 100. The inventory carrying cost is estimated at 15% of unit value. Determine: | (7) |

1. The optimal quantity.
 2. Inventory cycle duration.
 3. Number of orders to be placed per year.
 4. Total annual inventory cost including purchase cost.
- 6 a) What is bullwhip effect in supply chain? (4)
- b) What are the factors determined through aggregate planning, based on the inputs to it? (3)
- c) Explain the terms: (1) EOQ (2) Cycle inventory (3) Echelon inventory (8)
(4) Seasonal inventory

PART C

Answer any two full questions, each carries 20 marks.

- 7 a) Explain the principle of 3PL highlighting the service category and the basic services provided. (10)
- b) Explain the concept of reverse logistics. (10)
- 8 a) Explain the transportation and inventory cost trade-offs when making transportation decisions. (10)
- b) Differentiate knapsack and bin packing problems. (10)
- 9 a) Explain the following modes transportation in supply chain management: (10)
(1) Package carriers (2) Pipeline (3) Intermodal (4) Truck and (5) Rail
- b) Describe the importance of closed loop supply chain. (10)
