



## P.E.S. College of Engineering, Mandya - 571 401

(An Autonomous Institution affiliated to VTU, Belagavi)

**Seventh Semester, B.E. - Industrial and Production Engineering**

**Semester End Examination; Dec - 2017/Jan - 2018**

**Supply Chain Management**

*Time: 3 hrs*

*Max. Marks: 100*

*Note: Answer FIVE full questions, selecting ONE full question from each unit.*

### UNIT - I

- 1 a. Discuss with the help of suitable example, the stages and decision phases of supply chain. 10
- b. Explain with suitable application the process views of supply chain. 10
- 2 a. Explain basic steps to achieve strategic fit in the supply chain performance with a suitable example. 10
- b. Discuss with suitable block diagram, the framework for structuring drives in a supply chain. 10

### UNIT - II

- 3 a. Discuss with a suitable illustration, the factors influencing distribution network design. 10
- b. List the models for facility location and capacity allocation. Explain any two models. 10
- 4 a. Explain the framework for network design decisions. 10
- b. Evaluate network design decisions using decision trees. 10

### UNIT - III

- 5 a. Explain with suitable examples, the procedure to determine the appropriate level of safety inventory under the demand uncertainty and under product availability situations. 10
- b. Explain the factors affecting optional level of product availability with an illustrative example. 10
- 6 a. Explain the concepts of trade promotions in handling and managing inventory in a supply chain and explain multiechelon cycle inventory. 10
- b. Explain with an illustration the impact of replenishment policies on safety inventory. 10

### UNIT - IV

- 7 a. Explain the modes of transportation and discuss their performance characteristics. 10
- b. Explain the following design options for a transportation network with a suitable example : 10
- i) Direct shipping with milkmen
- ii) All shipments via intermediate distribution centre with stages.
- 8 a. Explain with illustration the following : 10
- i) Tradeoffs during aggregating inventory situations
- ii) Tradeoffs between transportation cost and customer responsiveness.

- b. Explain the following concepts :
  - i) Revenue management in the supply chain 10
  - ii) Routing and scheduling in transportation. 10

**UNIT - V**

- 9 a. Explain the Bull whip effect in the coordination of supply chain situations. 6
- b. Discuss the role of information technology in supplying chain. 7
- c. Discuss the concept of E-Business framework and E-Business in practice with a case example. 7
- 10. Explain the following emerging concepts in supply chain management :
  - a) Reverse logistics 5
  - b) Lean supply chains 5
  - c) Six sigma in supply chains 5
  - d) Role of RFID systems. 5

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