

COLLEGE OF ENGINEERING, PUNE  
(An Autonomous Institute of Government of Maharashtra)

**End Semester Exam**

**(PE 463) Supply Chain and Logistics Management**

**Programme: Final. Y. B. Tech Production (Sandwich)**

Year	: 2013-14	Semester	: I
Duration	: 3 hr	Max. Marks	: 60
Day and Date	: Sunday, 24th Nov 2013	Timing	: 2pm to 5pm
No. of page	: 02		

Instructions:

1. All questions are compulsory.
  2. Figures to right show marks assigned to questions.
  3. Non-programmable calculator is allowed
  4. Assume suitable data if required.
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Q1. Discuss the goal of supply chain and explain the impact of supply chain decisions on the success of the firm. 5

**OR**

Q1. Discuss the importance of expanding the scope of strategic fit across the supply chain. Draw neat sketches for the following:

- i) Intracompany intrafunctional scope
- ii) Intracompany interfunctional scope 5

Q2. State the role of information in the supply chain. Explain the various enabling technologies to share and analyze information in the supply chain. 5

Q3. Draw the network diagram for the following with its merits and demerits:

- i) Manufacturer storage with consumer pickup and
- ii) In transit merge network 5

Q4. Explain the four phases of global network design decisions with a neat sketch 5

Q5. What are the models for facility location and capacity allocation? State the steps to solve network optimization problems using Excel spreadsheet (giving constraints and finding Min/max values) 5

Q6. The following data is for Dynamic Logistics Ltd.

Annual demand = 100000 units/yr

Warehouse space = 1000 sqft for every one thousand units

Revenue = Rs 1.22/unit

Demand: May go up by 25% with a probability of 0.3 or go down by 25% with 0.7

Spot prices may go up by 10% with probability of 0.5 or go down by 10% with 0.5 probability.

The SC manager can sign a 2 year lease at a price of Rs 1/sqft/year. Warehouse space cost = Rs 1.25/sqft/year.

$k=0.1$

Determine using multiplicative binomial distribution whether you should sign a 2 year lease or obtain warehousing space on the spot market each year. 10

Q7. Demand for Cocodrink is 130000 bottles/year. The manufacturer currently charges Rs. 5 for each bottle and XO Ltd. (Cocodrink seller) incurs a holding cost of 25%. XO currently orders in lots of 6500 bottles. The manufacturer has offered a discount of Rs 0.25 for all bottles purchased by the retailers over the coming month. Determine the number of bottles that XO should order given the promotion. 5

**OR**

Q7. Demand for Quickpro computers at EzBuy is 1200/month. EzBuy incurs a fixed ordering cost of Rs 4300 for each order. Each computer costs EzBuy Rs. 575 and the retailer has a holding cost of 25%. Evaluate the number of computers that the store manager should order in each replenishment lot. 5

Q8. Define E-business. Explain the impact of e-business on responsiveness. 5

Q9. What is bull-whip effect? What are the operational obstacles to co-ordination in the supply chain? 5

Q10. Write short notes on the following (Any TWO) 10

a) CRM

b) Milk runs from DC

c) Design collaboration