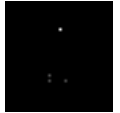


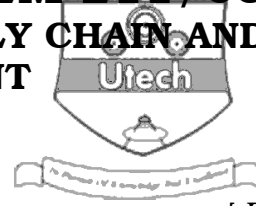




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**CS/M.TECH (PE)/SEM-2/PEM-211/09**  
**DESIGNING LOGISTICS AND SUPPLY CHAIN AND**  
**DEMAND MANAGEMENT**  
**SEMESTER – 2**



Time : 3 Hours ]

[ Full Marks : 70

*The figures in the margin indicate full marks.*

*Candidates are required to give their answers in their own words as far as practicable.*

Answer any *five* questions.

5 × 14 = 70

1. Explain the phenomena of demand and supply management with reference to
- a) efficient consumer response ( ECR )
  - b) quick response ( QR )
  - c) accurate response ( AR )

in the context of supply chain management.

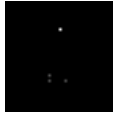
8 + 3 + 3

2. XYZ Ltd. along with other products produces two products A & B. 1,000 units of A and 25,000 units of B are manufactured and sold in each period.

Apart from a labour force that works 4,00,000 direct labour hours per period, the company has engaged 12 salaried support staff spending an overhead of Rs. 5,00,000/- per period to do the following 3 activities :

- i) Three staffs engaged in receiving 10,000 consignments of raw material per period
- ii) Six staffs engaged in receiving 25,000 consignments of components per period
- iii) Three staffs engaged in issuing these materials for 5,000 production runs ( one issue for each production run ) per period.

Product A requires 200 component consignments, 50 raw material consignments and 10 production runs to complete its production schedule, whereas product B requires 100 component consignments, 8 raw material consignments and 5 production runs to complete its production per period. For producing one unit of A, one direct labour hour and for B, 0.6 direct labour hour are required.



- a) Calculate the overhead cost of A & B using the traditional system of overhead absorption, based on direct labour hour.
- b) Identify appropriate cost drivers and calculate the overhead cost of A & B using activity based costing.
- c) Compare the answers derived in (a) and (b) and give your comments about the relevancy of cost estimates. 4 + 8 + 2



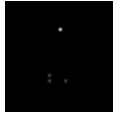
3. a) Explain 'Bench marking', mentioning the various kinds of challenges faced during the process of 'Bench marking'.
- b) Define its role in improvement of organisational effectiveness. 8 + 6

4. a) What is 'on time delivery' ( OTD ) index ?
- b) Eastern Castings is a crucial supplier to a machine tool manufacturing company. Since the delivery reliability of the Castings has a direct bearing on the scheduling of the production system and the ability of the machine tool manufacturer to commit the customer, they have instituted OTD as a measure of performance. Table below gives the performance of Eastern Castings in the last 10 deliveries.

Delivery No.	Promise date	Delivery date
1	July 25, 2008	July 23, 2008
2	August 11, 2008	August 16, 2008
3	August 28, 2008	September 2, 2008
4	September 10, 2008	September 10, 2008
5	October 4, 2008	October 19, 2008
6	October 22, 2008	October 25, 2008
7	November 9, 2008	November 17, 2008
8	November 30, 2008	November 30, 2008
9	December 14, 2008	December 13, 2008
10	December 25, 2008	December 30, 2008

Make necessary assumptions and compute OTD index for Eastern Castings.

4 + 10



5. What is the essence of Balance score card method of supply chain performance measurement ? 14
6. a) What should be the objective of routing and scheduling in the context of supply chain management ?
- b) What are the difference constraints in routing ?
- c) Why is fleet sizing necessary ? 4 + 6 + 4
7. a) What factors are to be considered while analysing the transport requirement of different sectors ( like production line to godown/warehouses, material handling interfaces at each terminal facility and the documentation ( i.e. tax returns etc. ) process, to support the product ?
- b) What steps are involved in selecting the system ? 8 + 6
8. a) What is reverse supply chain ?
- b) Explain when reverse supply chain situations are faced at different stages of product life.
- c) Barring warranty, where reverse supply chain is a part of the contract in other situations, what are the advantages to the company for adopting reverse supply chain practices and what are the disadvantages ? 4 + 6 + 4
9. Write short essays on any *two* of the following : 7 + 7
- a) 3rd party logistics ( 3PL )
- b) Outsourcing
- c) POS ( point of sales ) & SKU ( stock keeping units )
- d) Vendor managed inventory ( VMI ).



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END