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

1.	Signature of Invigilator							đ							
2.	Signature of the Officer-in-Charge	•													
	Roll No. of the Candidate														
	CS/M.TECH (ENGINEERING & MANAG DESIGNING LOGIST DEMAND MANA(EME ICS	NT I S Al	EX. ND	AMI SI	INA U P]	TIO PL	ons Y C	, JU C H /	JLY AIN	I A				
Tin	ne : 3 Hours]											[F	ull I	Mark	s : 70

INSTRUCTIONS TO THE CANDIDATES :

- 1. This Booklet is a Question-cum-Answer Booklet. The Booklet consists of **32 pages**. The questions of this concerned subject commence from Page No. 3.
- 2. You have to answer the questions in the space provided marked 'Answer Sheet'. Write on both sides of the paper.
- 3. **Fill in your Roll No. in the box** provided as in your Admit Card before answering the questions.
- 4. Read the instructions given inside carefully before answering.
- 5. You should not forget to write the corresponding question numbers while answering.
- 6. Do not write your name or put any special mark in the booklet that may disclose your identity, which will render you liable to disqualification. Any candidate found copying will be subject to Disciplinary Action under the relevant rules.
- 7. Use of Mobile Phone and Programmable Calculator is totally prohibited in the examination hall.
- 8. You should return the booklet to the invigilator at the end of the examination and should not take any page of this booklet with you outside the examination hall, **which will lead to disqualification**.
- 9. Rough work, if necessary is to be done in this booklet only and cross it through.

No additional sheets are to be used and no loose paper will be provided

FOR OFFICE USE / EVALUATION ONLY

Marks Obtained

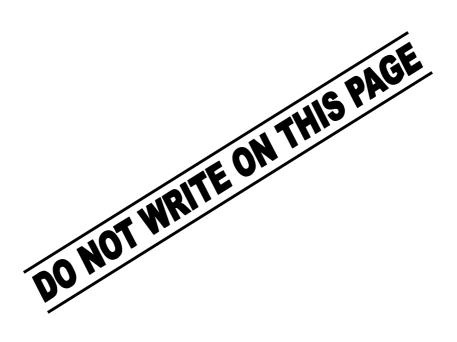
Question Number					Total Marks	Examiner's Signature
Marks Obtained						

Head-Examiner/Co-Ordinator/Scrutineer

44014 (08/07)







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

Time : 3 Hours |

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. $5 \times 14 = 70$

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

in the context of supply chain management.

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

44014 (08/07)



[Full Marks: 70

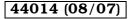
8 + 3 + 3

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- 4
- 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
- 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.



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5. What is the essence of Balance score card method of supply chain performance measurement?

5

- 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 ?
- 7. a) What factors are to be considered while analysing the transport requirement of different sectors (like production line to godown/warhouses, 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 :
 - a) 3rd party logistics (3PL)
 - b) Outsourcing
 - c) POS (point of sales) & SKU (stock keeping units)
 - d) Vendor managed inventory (VMI).

END

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4 + 6 + 4

7 + 7