

OR

Code No. OR-21/IEM

JAWAHARLAL NEHRU TECHNOLOGY UNIVERSITY, HYDERABAD

M .Tech. II Semester Supplementary Examinations, March – 2009

PRODUCTION AND OPERATIONS MANAGEMENT

(Industrial Engineering and Management)

Time: 3 hours

Max. Marks.60

Answer any Five questions
All questions carry equal marks

- 1.a) Discuss the design factors of a production system.
b) Explain the systems concept of production.
2. A manufacturer wants to ship 8 loads of his product as shown in the following table. The matrix gives the distance (in km) from origin to destination.

	A	B	C	Available
X	50	30	220	1
Y	90	45	170	3
Z	50	200	50	4
Required	3	3	2	

- Shipping costs are Rs. 10 per load per km. What shipping schedule should be used?
- 3.a) Explain the job shop method of production.
b) Describe the factors that affect process selection.
- 4.a) Explain the Delphi technique of forecasting. When would you use this method?
b) Discuss are the different measures of forecasting accuracy.
- 5.a) What is the difference between master planning schedule and materials requirement planning? Explain.
b) What are the costs relevant to production planning?
- 6.a) Discuss the costs associated with inventory.
b) A company purchases 2000 units of a particular item per year at a unit cost of Rs.20. The ordering cost is Rs. 50 per order, and the inventory carrying cost is 25%. Find the optimal order quantity. If a 3% discount is offered by the supplier on lots of 1000 or more, should the company accept the offer?

Contd...2

7. The data in the table shown below refers to three different machines A, B, and C. The output is expected to be 9000 units per month. The factory works for 48 hours per week. Find out the machine which will satisfy the required capacity.

Particulars	A	B	C
Set up time (minutes)	9	4	6
M/c operation time (minutes per unit)	1.2	2.0	1.5
Lot size	450	300	360

- 8.a) Explain the steps required to construct a line of balance chart.
- b) With reference to line balancing, explain the following terms:
Precedence relationship, Cycle time, Line efficiency.

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