

Library

B.E. (M.E.H.) VII (REV.)
Manufacturing Planning & Control

30/5/08

ws April 08 510

Con. 3101-08.

(REVISED COURSE)

CO-3325

(3 Hours)

[Total Marks : 100

MASTER

- N.B. :** (1) Answer any **five** questions out of **seven** questions.
 (2) **Figures** to the **right** indicate **full** marks.
 (3) Illustrate answers with **neat** sketches where ever **required**.
 (4) Answers to the questions should be grouped and written **together**.

1. (a) What is MPC ? Explain the framework of it. 10
 (b) Explain production planning process. 10
2. Write short notes (any **four**) :- 20
 (a) MRP II (b) MRP Records
 (c) Lot Sizing (d) Pegging
 (e) MPS

Or

2. (a) Describe vendor relationship for a purchase activity. 10
 (b) What is the capacity planning ? Explain the capacity control techniques in brief. 10
3. A company is manufacturing two different types of products, A and B. Each product has to be processed on two machines M_1 and M_2 . Product A requires 2 hours on machine M_1 and 1 hour on machine M_2 , product B requires 1 hour on machine M_1 and 2 hours on machine M_2 . The available capacity of machine M_1 is 104 and that of machine M_2 is 76 hours. Profit per unit for product A is Rs. 6/- and that for B is Rs. 11/-. 20
 (a) Formulate the problem.
 (b) Find out the optimal solution by simplex method.

4. (a) An automobile dealer wishes to put four repairmen to four different jobs. The repairmen have somewhat different kind of skills and they exhibit different level of efficiency from one job to other. The dealer has estimated the number of man-hours that would be required for each job-man combination. This is given in matrix form in the table below. Find the optimal assignment 10

	Job	A	B	C	D
M	1	5	3	2	8
a	2	7	9	2	6
n	3	6	4	5	7
	4	5	7	7	8

- (b) There are five jobs, each of which is to be processed through three machine A, B, C in the order ABC Processing time in hours are: 10

Jobs	A	B	C
1	3	4	7
2	8	5	9
3	7	1	5
4	5	2	6
5	4	3	10

Determine the optimum sequence for the five jobs and the minimum elapsed time. Also calculate the waiting time for three machines.

[TURN OVER

D.E.C.M) Rev Mann. of Plan. & Control² 30/5/08

5. (a) What is inventory ? What are the various types of costs associated with inventory ? **8**
 (b) The annual demand of a particular item by a company is 10,000 units. These items may be obtained from an outside supplier or subsidiary company. The relevant data for procurement of the item is given below : **12**

Costs	From outside Supplier	From Subsidiary Company
Cost per Unit	12	13
Cost of placing an order	10	10
Cost of receiving an order	20	15
Storage and all carrying costs per unit per annum	2	2

- (i) What purchase quantity and from which source would you recommend to procure ?
 (ii) What should be the minimum total cost in that case ?

6. (a) Discuss variation of demand due to seasonal requirements. **8**
 (b) Obtain the least square regression equation of Y and X from the following data : **12**

X	89	86	74	65	64	63	66	67	72	79
Y	92	91	84	75	73	72	71	75	78	84

Use the regression equation to forecast value of Y when (i) X = 70 and (ii) X = 85.

7. (a) Compare CPM and PERT by giving examples. **4**
 (b) The time and cost estimates of different activities of a project and their precedence relationship are given below : **16**

Activity	Preceding Activity	Time (in Weeks)		Cost (Rs.)	
		Normal	Crash	Normal	Crash
A	-	6	4	10,000	14,000
B	-	3	3	5,000	8,000
C	A	3	2	4,000	5,000
D	B	8	3	1,000	6,000
E	B	14	6	9,000	13,000
F	C, D	8	4	7,000	8,000

Overhead costs amounts to Rs. 1,000/- per week. Crash the project to optimum extent.

