GANPAT UNIVERSITY
M.Tech. Semester II (CAD&CAM) Examination, July-2013
3ME213 Computer Aided Production Management

Max. Time: 3 hours **Max. Marks: 70**

Instructions:

(1) Attempt all question.
(2) Right figure indicates full marks.
(3) Assume required data if necessary.

SECTION-I

Q.1 **(A)** How MRP II different from MRP I? Which is superior and why? **(4)**

(B) Discuss and develop a close loop system of material requirement planning, starting from forecasting and ending up with finish product dispatches in any manufacturing organization of large size. **(4)**

(C) What are load charts? Why are they required? How are they prepared and used in scheduling of work in PPC department. **(3)**

OR

Q.1 **(A)** What is meant by short term and long term forecasting. Describe and evaluate the method of sales forecasting based on a time series analysis. **(5)**

(B) A financial Institute is interested in the estimation of the demand for one of its service in future. The following data for the last 12 months is available with the firm. **(6)**

Month	Number of Transactions	Month	Number of Transactions
1	1123	7	1102
2	1231	8	1260
3	916	9	1018
4	1095	10	1018
5	969	11	979
6	1247	12	1252

What would the unadjusted forecasting have been for month through 13 with An unweighted three month moving average method

Q.2 **(A)** What is Economic Order Quantity? Derive an expression for the economic order quantity when the stock replenishment is instantaneous giving the assumptions made. **(6)**

(B) Annual requirement of an item is 2400 units. Each item costs the company Rs.6. the manufacturer offers discounts of 5 percent if 500 or more quantities are purchased. The ordering cost is Rs.32 per order and inventory cost is 16 percent. **(6)**

Whether it is a advisable to accept the discount? Comment.

OR

Q.2 **(A)** What are the reasons for growth of ERP market? **(4)**

(B) What are the causes for ERP implementation? Explain. **(4)**

(C) What are the ERP implementation strategies? Explain reengineering. **(4)**

Q.3 **Attempt Any Three** **(12)**

(A) Define BOM. Enlist the BOM processor module's functions. Also distinguish clearly between explosions and implosion in details.

(B) Enlist the principles of scheduling; also list down the inputs to scheduling. Explain methods of scheduling with suitable sketches.

(C) A particular item has a demand of 9000 units/year. The cost of one procurement is Rs.100 and the holding cost per unit is Rs. 2.40 per year. The replacement is instantaneous and no shortages are allowed. Determine

(i) The economic lot size
(ii) The number of orders per year
(iii)The time between orders

The total cost per year if the cost of one units is Re.1.

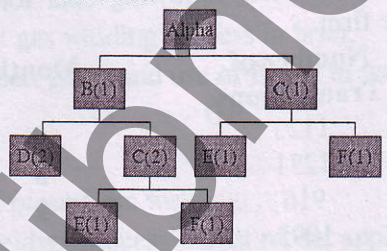
(D) Explain working of Kanban System

SECTION- II

Q.4 (A) Prepare the MRP schedule for the following product structure. **(8)**

Item	Lead Time	Current Inv. Pos.
Alpha	1	10
B	2	20
C	3	0
D	1	100
E	1	10
F	1	50

Item BOM:



Gross Reqs for Alpha													
Period	1	2	3	4	5	6	7	8	9	10	11	12	13
Gross Reqs.								50			50		100

(B) Explain the objectives of materials management **(4)**

OR

Q.4 (A) A city corporation has decided to carry out road repairs on four main arteries of the city. The govt. has agreed to make a special grant of Rs. 50 lakh towards the cost with a conditions warrant, a supplementary token grant will also be considered favorably. The corporation has floated tenders and five contractors have spent in their bids. In order to expedite work, one road will be awarded to only one contractor. **(6)**

Contractor	Cost of repairs on road (Rs. Lakhs)			
	R1	R2	R3	R4
C1	9	14	19	15
C2	7	17	20	19
C3	9	18	21	18
C4	10	12	18	19
C5	10	15	21	16

i) Find the best way of assigning the repairs to the contractors and the

costs.

ii) If it is necessary to seek supplementary grant, what should be the amount sought?

iii) Which of the five contractors will be unsuccessful in his bid?

(B) Job each of which must be processed on the machine M1, M2, …M6. **(6)**
The processing time in hrs. are given in table:

Jobs	Processing times					
	M1	M2	M3	M4	M5	M6
A	18	8	7	2	10	25
B	17	6	9	6	8	19
C	11	5	8	5	7	15
D	20	4	3	4	8	12

Find i) Optimal Sequence. ii) Minimum total elapsed time. iii) Idle times associated with machines.

Q.5 **Answer the following question.**

(a) Explain Retrieval type CAPM system (Variant system) and generative CAPM system. **(4)**

(b) What is simulation? Enlist various simulation packages. **(3)**

(c) With neat sketch explain process of capacity planning. **(4)**

OR

Q.5 **Answer the following question.**

(a) What are the measures of capacity planning? **(4)**

(b) What is the role of computer in CAPM system? **(3)**

(c) Differentiate contact and non-contact type of inspection. **(4)**

Q.6 **Attempt any three.** **(12)**

(a) Explain long term and short term capacity strategy.

(b) What is mean by computer integrated production management system? Explain in detail.

(c) What is application of simulation in manufacturing industries? Explain in detail.

(d) Write a short note on capacity requirement planning (CRP).

Best Luck

End of Paper