

26/4/13

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B.E/B.Tech (Full Time) DEGREE END SEMESTER EXAMINATIONS, APRIL/MAY 2013
 MANUFACTURING ENGINEERING
 SIXTH SEMESTER

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MF9351 COMPUTER INTEGRATED PRODUCTION MANAGEMENT SYSTEM
 (REGULATIONS 2008)

Time : 3 hrs

Max. Marks : 100

Answer ALL Questions
PART - A (10 x 2 = 20 Marks)

1. Differentiate between batch production and mass production.
2. When will you select small a small value for the smoothing constant for exponential forecasting?
3. How are MAD and MAPE useful in evaluating the efficiency of forecasting?
4. What is aggregate planning? What is its purpose?
5. What is product structure for a final assembly?
6. Why is master production schedule essential for MRP?
7. State and differentiate between Design capacity, System capacity and Rated Capacity.
8. What is the importance of process planning?
9. What are the functions of process planning?
10. Compare the features of a variant generative CAPP system.

PART - B (5 x16 = 80 Marks)

11. Explain in detail the two approaches of CADD system with their advantages and limitations.
12. a) The demand for a product for the last 10 years is given below:

Year	1	2	3	4	5	6	7	8	9	10
Demand	133	151	144	163	151	184	166	198	179	192

Use the method of moving average for three years regression analysis to forecast the demands from 4th to 11th years. Compare the forecasts with the historical data to find MAD and MSE. Which method of forecasting would you recommend?

OR

- b) i) In forecasting, what advantages does exponential smoothing have over moving average. (4)
- ii) Using the simple exponential smoothing method, forecast the demand for 11th year.

13) An aggregate planning in a limited company has estimated the following demand requirements for forthcoming week periods, which represent one complete demand cycle for them. The company expects the net demand cycle to be similar to this one.

Period	1	2	3	4	5	6	7	8	9	10
Forecast	400	400	600	800	1200	1200	600	200	200	400

Plan 1: Vary inventory levels, but maintain a stable work force producing at an average requirement rate with no overtime or idle time. The carrying cost per unit per period is Rs. 200. (The company can arrange to have whatever inventory level is required before period 1 at no additional cost). (6)

Plan 2: Produce at a steady rate of 400 units per period, and accept a limited number of back orders during periods when demand exceeds 400 units. The stockout cost (profit, goodwill, and so on) of lost sales is Rs. 1100 per unit. (5)

Plan 3: Produce at a steady rate of 200 units per period, and subcontract for excess requirements at a marginal cost of Rs. 400 per unit. (5)

Determine the comparative costs of the three plans.

OR

b) A BOM is desired for a bracket (Z100) that is made up of a base (A10), two springs (B11), and four clamps (C20). The base is assembled from one clamp (C20) and two housings (D21). Each clamp has one handle (E30), and each housing has two bearings (F31) and one shaft (G32).

i) Design a product structure tree that includes the level coding information. (5)

ii) Show the data in the form of an indented BOM. (5)

iii) Determine the quantities of A10, B11, C20, D21, E30, F31 and G32 needed to complete 50 of the Z100 brackets. (6)

14 a) i) State the functions of Shop Floor Control (SFC). (4)i

ii) Discuss briefly the Shop Floor Control system and flow of information in SFC with a flow diagram. (12)

OR

b) i) Describe the various methods of automated data collection. (8)

ii) What is meant by data logging and acquisition? (8)

15 a) Explain the overall development of process planning frame work with block diagram.

OR

b) Describe various new concepts of Computer Integrated Production Management System.