

IV B.Tech I Semester Advance Supplementary Examinations, March - 2023
PRODUCTION PLANNING & CONTROL
(Mechanical Engineering)

Time: 3 hours

Max. Marks: 75

Answer any FIVE Questions
ONE Question from Each unit
All Questions Carry Equal Marks

UNIT I

- 1 a) What are the different ways to transform the material from a given form to a desired form in production? Explain? [7]
 b) What are the responsibilities of central statistics office in PPC department? Explain? [8]

(OR)

- 2 a) When a separate transportation section required in PPC? Explain? [7]
 b) What are the ten functions of PPC cycle? Explain with neat diagram? [8]

UNIT II

- 3 a) Explain least squares forecasting technique? [5]
 b) Using single exponential smoothing method, find out forecast for the 12th period for the tabulated data. Take value of α as:
 (i) $\alpha = 0.1$
 (ii) $\alpha = 0.5$
 (iii) $\alpha = 0.9$

Month	Observed value	Month	Observed value
1	210	7	170
2	150	8	130
3	145	9	240
4	195	10	265
5	310	11	235
6	175		

[10]

(OR)

- 4 a) Explain single exponential smoothing technique? [5]
 b) Use double moving average method to forecast for the 10th period, given:

Period	Inventory balance	Period	Inventory balance
1	142	6	136
2	157	7	179
3	138	8	184
4	159	9	150
5	169		

[10]



UNIT III

- 5 a) What are the different costs in inventory system? Explain? [7]
b) Weekly demand for an item is normally distributed with mean equal to 100 and standard deviation equal to 8. Ordering cost is Rs. 10 and carrying cost is 12% per year. The price per unit is Rs. 12. There is a two-week lag between order and delivery. Assume there is fixed understock cost of Rs. 200. Using the exact method of analysis, i. Find the optimal Q-system for this item. ii. What is the total cost for this system? [8]

(OR)

- 6 a) What is ABC analysis? Explain its significance in the inventory control? [7]
b) How do economies of scale affect the likelihood of small and large companies undertaking inventory studies? How does this affect companies with subsidiaries? Explain? [8]

UNIT IV

- 7 a) What do you mean by disaggregating? Explain? [7]
b) What are the different types of capacity planning methods? Explain? [8]
- (OR)
- 8 a) What are the different aggregate planning methods? Explain? [7]
b) What are the benefits of capacity planning? Explain? [8]

UNIT V

- 9 a) What are the benefits with master production scheduling? Explain? [7]
b) What are the different dynamic lot sizing techniques? Explain? [8]
- (OR)
- 10 a) What is MRP-II? Explain? [7]
b) What are the main objectives of line balancing? Explain? [8]

