

Code: 20ME4601B

**III B.Tech - II Semester – Regular / Supplementary Examinations
APRIL 2024**

**PRODUCTION PLANNING AND CONTROL
(MECHANICAL ENGINEERING)**

Duration: 3 hours

Max. Marks: 70

Note: 1. This paper contains questions from 5 units of Syllabus. Each unit carries 14 marks and have an internal choice of Questions.

2. All parts of Question must be answered in one place.

BL – Blooms Level

CO – Course Outcome

			BL	CO	Max. Marks
UNIT-I					
1	a)	Define PPC. Describe the importance of PPC in real life application.	L2	CO1	6 M
	b)	A company uses simple exponential smoothing with $\alpha=0.4$ to forecast demand. The forecast for the first week of January was 600 units, whereas actual turned out to be 450 units. (i) Forecast the demand for the second week of January (ii) Assume that the actual demand during the second week of January turned out to be 650 units. Forecast the demand up to February third week, assuming the subsequent demands as 575, 550, 570, 625, and 570 units.	L3	CO3	8 M
OR					

2	a)	Explain the general principles of forecasting.	L2	CO1	6 M																						
	b)	The demand for 10 weeks is given in the following table. Calculate the four-month moving average.	L3	CO3	8 M																						
		<table border="1"> <tr> <td>Week</td> <td>1</td> <td>2</td> <td>3</td> <td>4</td> <td>5</td> <td>6</td> <td>7</td> <td>8</td> <td>9</td> <td>10</td> </tr> <tr> <td>Orders</td> <td>120</td> <td>90</td> <td>100</td> <td>110</td> <td>45</td> <td>91</td> <td>65</td> <td>71</td> <td>49</td> <td>55</td> </tr> </table>	Week	1	2	3	4	5	6	7	8	9	10	Orders	120	90	100	110	45	91	65	71	49	55			
Week	1	2	3	4	5	6	7	8	9	10																	
Orders	120	90	100	110	45	91	65	71	49	55																	

UNIT-II

3	a)	What is meant by VED analysis? What is its significance?	L2	CO1	6 M
	b)	A company requires 10000 units of an item per annum. The cost of ordering is Rs. 150 per order. The inventory carrying cost is 30%. The unit price of the item is Rs. 12. Calculate (i) The economic order quantity (ii) Optimal total annual cost (iii) Time between the orders.	L3	CO3	8 M

OR

4	a)	An electric housing has an annual usage rate of 75,000 units/year, an ordering cost Rs, 800 and annual carrying charge of 15.4% of the unit price. Delivery lead time is 2 weeks. Determine EOQ, lead time consumption and the optimal operating doctrine. (Assuming the cost of one unit is Rs. 12).	L3	CO3	8 M
	b)	Explain P and Q systems of controlling the inventories with neat diagrams.	L2	CO3	6 M

UNIT-III

5	a)	Explain the bill of material with design specification chart.	L2	CO1	7 M
	b)	Write the differences between scheduling and loading.	L2	CO3	7 M

OR

6	a)	Compare and contrast different scheduling policies.	L2	CO1	7 M
	b)	Explain the various types of graphs used in scheduling and control related problems.	L2	CO3	7 M

UNIT-IV

7	a)	Explain various strategies in aggregate planning.	L2	CO1	7 M
	b)	What are the various costs in aggregate planning and explain?	L2	CO4	7 M

OR

8	a)	What is the purpose of aggregate planning? Explain in detail?	L2	CO1	7 M
	b)	Explain the line balancing procedures.	L2	CO4	7 M

UNIT-V

9	a)	Explain the different types of follow ups.	L2	CO2	7 M
	b)	Explain the applications of computer in production planning and control.	L2	CO2	7 M

OR

10	a)	Write the advantages and disadvantages of decentralized dispatching.	L2	CO1	7 M
	b)	Differentiate between centralized and decentralized dispatching procedures.	L2	CO2	7 M