U.S.N.										

B.M.S. College of Engineering, Bengaluru-560019

Autonomous Institute Affiliated to VTU

June 2025 Semester End Main Examinations

Programme: B.E. **Semester: V**
Branch: Mechanical Engineering **Duration: 3 hrs.**
Course Code: 22ME5PEPOM **Max Marks: 100**
Course: Production and Operation Management

Instructions: 1. Answer any FIVE full questions, choosing one full question from each unit.
2. Missing data, if any, may be suitably assumed.

Important Note: Completing your answers, compulsorily draw diagonal cross lines on the remaining blank pages. Revealing of identification, appeal to evaluator will be treated as malpractice.

		UNIT - I	CO	PO	Marks
1	a)	Give a brief history of the development of production management.	CO1	PO1	**10**
	b)	What are the factor effecting productivity?	CO1	PO1	**05**
	c)	What are objectives of Production Management?	CO1	PO1	**05**
		OR			
2	a)	With the help of a flow diagram, explain Operations as a strategic element in accomplishing organizational goals.	CO1	PO1	**10**
	b)	With a neat sketch, explain system's view of operations.	CO1	PO1	**10**
		UNIT - II			
3	a)	Enumerate the importance of plant location. List the factors to be considered for facility location planning.	CO2	PO2	**10**
	b)	What is decision tree analysis? Explain 5 steps to make better decisions.	CO2	PO2	**10**
		OR			
4	a)	Explain the strategies for modifying capacity in short term period.	CO2	PO2	**10**
	b)	Explain the different techniques used in capacity modelling.	CO2	PO2	**10**
		UNIT - III			
5	a)	What is forecasting? Explain the factor effecting forecasting and list the uses of forecasting.	CO3	PO1	**10**
	b)	A company manufacturing car batteries find a relation between the sales of car batteries and the sale of new cars. The sales data for the past five years are as shown in table. Establish a Linear relationship between to commodities and make a sales forecast of car batteries for the year 1996 corresponding to projected demand of car of 120.	CO3	PO1	**10**

			<table><tr><td>Years</td><td>1991</td><td>1992</td><td>1993</td><td>1994</td><td>1995</td></tr><tr><td>Sales of Cars in 100's</td><td>80</td><td>88</td><td>93</td><td>100</td><td>110</td></tr><tr><td>Sales of Batteries in 100's</td><td>150</td><td>200</td><td>220</td><td>235</td><td>250</td></tr></table>			
		OR			
6	a)	What is Grant chart? Explain the two types, the symbols used, and its advantages.	*CO3*	*PO1*	**10**
	b)	Define scheduling? Describe factors affecting scheduling and mention objectives of scheduling.	*CO3*	*PO1*	**10**
		UNIT - IV			
7	a)	Define inventory? Mention importance of inventory. Explain objectives of inventory control.	*CO4*	*PO1*	**10**
	b)	An industry estimate that it will sell 24000 units of its production for the forth coming year. The ordering cost is Rs 150/order and carrying cost per unit per year is 20% of the purchase price per unit. The Purchase price per unit is Rs 50. Find (i) EOQ (ii) No of orders/year (iii) Time between successive orders.	*CO4*	*PO1*	**10**
		OR			
8	a)	Explain ABC Analysis in Inventory. List the points to be considered using ABC Analysis.	*CO5*	*PO1*	**10**
	b)	ABC Ltd. Uses EOQ logic to determine the order quantity for its various components and is planning its orders. The Annual consumption is 80,000units, Cost to place one order is Rs. 1,200, Cost per unit is Rs. 50 and carrying cost is 6% of Unit cost. Find EOQ, No. of order per year, Ordering Cost and Carrying Cost and Total Cost of Inventory.	*CO5*	*PO1*	**10**
		UNIT - V			
9	a)	Describe the Production Operation Standard and work Measurements.	*CO6*	*PO1*	**10**
	b)	Define Job design? Mention importance of Job design. Explain Behavioral dimensions.	*CO6*	*PO1*	**10**
		OR			
10	a)	The time study of a machinery operation recorded cycle times of 8, 7, 8 and 9 minutes. The analyst rated the observed worker as 90%. The firm uses a 0.15 allowance fraction. Compute the standard time.	*CO6*	*PO2*	**06**
	b)	Explain how job rotation and job enlargement are used by organizations to enhance employee efficiency.	*CO6*	*PO1*	**10**
	c)	List work measurement techniques.	*CO6*	*PO1*	**04**

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