

# CBCS SCHEME

USN

--	--	--	--	--	--	--	--	--	--

18ME56

## Fifth Semester B.E. Degree Examination, Dec.2023/Jan.2024 Operation Management

Time: 3 hrs.

Max. Marks: 100

*Note: Answer any FIVE full questions, choosing ONE full question from each module.*

### Module-1

- 1 a. Define operations management. Explain briefly how the production system are classified. (10 Marks)  
b. Define productivity. Explain briefly factors affecting productivity. (10 Marks)

OR

- 2 a. Define decision making. Briefly explain the characteristics of operation decisions. (10 Marks)  
b. Explain break even analysis with necessary equations graphs and assumptions. (10 Marks)

### Module-2

- 3 a. Define forecasting. Explain linear regression and exponential smoothing. (10 Marks)  
b. Use the least squares method to develop a linear trend equation for the data. State the equation complete with signature and forecast a trend value for year 16.

Year	X Year coded	Y Shipments (tons)	XY	X <sup>2</sup>
1	-5	2	-10	25
2	-4	3	-12	16
3	-3	6	-18	9
4	-2	10	-20	4
5	-1	8	-8	1
6	0	7	0	0
7	1	12	12	1
8	2	14	28	4
9	3	14	42	9
10	4	18	72	16
11	5	19	95	25
	00			

(10 Marks)

OR

- 4 a. Briefly explain the components of time series method with sketches. (10 Marks)  
b. Explain the steps in the forecasting process. Briefly. (10 Marks)

### Module-3

- 5 a. Explain briefly : (i) Capacity planning (ii) System capacity  
(iii) Design capacity (iv) Facility layout. (10 Marks)  
b. Explain with neat sketch any two types of layout. (10 Marks)

OR

- 6 a. What are the factors influencing plant location? Explain briefly. (10 Marks)  
b. Explain the various capacity measures. What are the capacity strategies? (10 Marks)

**Module-4**

- 7 a. Define aggregate planning. Explain the strategies used for aggregate planning in brief. (10 Marks)  
b. What are the functions of Master Production Schedule? State the difference between AP and MPS. (10 Marks)

OR

- 8 a. What are the objectives of Master Production Scheduling? Explain the Master Production Schedule with a neat diagram. (10 Marks)  
b. What are the focused aggregate planning strategies? Explain briefly. (10 Marks)

**Module-5**

- 9 a. Define MRP. What are the various steps involved in the implementation of MRP? (10 Marks)  
b. Explain the key features of MRP system. List the benefits and limitation of MRP. (10 Marks)

OR

- 10 a. Explain Bull Whip effect. What are the root causes for bull whip effect? (10 Marks)  
b. Define supply chain. Explain supply chain management with a schematic model. (10 Marks)

\*\*\*\*\*