

Instructions:

- 1) Question No. 1 is Compulsory.
- 2) Answer any three from remaining five Questions.
- 3) Assume suitable data if required.
- 3) Draw figure, charts, block diagram wherever required.
- 4) All questions carry equal marks.

- Q 1 Write the importance of the following in brief (any four) 05x4=20**
- a) Supply Chain Management
 - b) ABC analysis
 - c) Standard Time & Normal time
 - d) Lean Manufacturing & JIT
 - e) Group Technology

- Q 2 a. Explain the steps to be followed for Method study and Time study. 10**
b. The table below shows the demand for the last 7 months. 10

Months	Jan.	Feb.	Mar.	Apr.	May	Jun.	Jul.
Orders	23	29	33	40	41	43	49

1. Calculate a two month moving average for months Feb. to July.
What would be your forecast for the demand in August month?
 2. Apply exponential smoothing with a smoothing constant of 0.1 to derive a forecast for the demand in August month.
 3. Which of the two forecasts for August month do you prefer and why?
- Q 3 a. Draw the generic graph for Life cycle of a Production system, mark each stage, and list the challenges and consideration to made at each stage. 10**
b. Following data is provided for inventory management, 10
Demand = 380 units, Holding cost = ₹ 0.90 /unit/year
Order cost = Rs.100 /order , Number of working days = 320
days/year
1. What is an EOQ?
 2. What is the expected time between orders?
 3. What is the total cost of an inventory?
- Q 4 a Explain the Primary & Secondary activities and Support system for 10**
creating value in the conversion process.
b. List and compare different types of Production systems with their 10
characteristics

- Q 5 Write short notes on any four 5x4=20
1. Material Requirement Planning
 2. Capacity Planning
 3. Purchasing cycle
 4. Maynard Operations Sequence Technique (MOST)
 5. Plant Layout
- Q 6 a. Differentiate between Value and waste. Is Lean a value creation or waste removal philosophy? Discuss with justification 10
- b. Total of 12 work elements and their relationship and time (in seconds) is given below; Draw the line of balance by trial and error method. Also find Line efficiency, Balance Delay and Smoothness Index for Cycle time of 12 seconds 10

Element No.	Predecessor element	Time in seconds
1	-	5
2	1	3
3	2	4
4	1	3
5	4	6
6	3,5	5
7	6	2
8	7	6
9	6	1
10	6	4
11	10	4
12	8,9,11	7