



# PRESIDENCY UNIVERSITY

BENGALURU

|          |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|----------|--|--|--|--|--|--|--|--|--|--|--|--|--|--|
| Roll No. |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|----------|--|--|--|--|--|--|--|--|--|--|--|--|--|--|

## Mid - Term Examinations –JUNE 2025

Date: 03 – 06- 2025

Time: 02:00 pm – 03:30 pm

|                       |                                                 |                |
|-----------------------|-------------------------------------------------|----------------|
| School: SOM-PG        | Program: MBA                                    |                |
| Course Code : MBA2040 | Course Name : Production & Logistics Management |                |
| Semester: II          | Max Marks: 50                                   | Weightage: 25% |

| CO - Levels | C01 | C02 | C03 | C04 | C05 |
|-------------|-----|-----|-----|-----|-----|
| Marks       | 13  | 13  | 12  | 12  |     |

### Instructions:

- (i) Read all questions carefully and answer accordingly.
- (ii) Do not write anything on the question paper other than roll number.

### Part- A

Answer ALL the Questions. Each question carries 3marks.

5Q x 3M=15 Marks

| 1      | What is forecasting, and why is it important in production and logistics management?                                                                                                                                                                                                                                                                                                                                             | 3 Marks     | L2                    | CO          |        |       |       |        |       |       |         |    |    |
|--------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------|-----------------------|-------------|--------|-------|-------|--------|-------|-------|---------|----|----|
| 2      | What is causal forecasting? Provide an example of how it can be applied in a manufacturing context.                                                                                                                                                                                                                                                                                                                              | 3 Marks     | L2                    | CO          |        |       |       |        |       |       |         |    |    |
| 3      | What are the four main types of plant layouts? What are the advantages and disadvantages of each?                                                                                                                                                                                                                                                                                                                                | 3 Marks     | L2                    | CO          |        |       |       |        |       |       |         |    |    |
| 4      | List and explain at least five factors that influence plant location selection for manufacturing facilities.                                                                                                                                                                                                                                                                                                                     | 3 Marks     | L2                    | CO          |        |       |       |        |       |       |         |    |    |
| 5      | <div>A company, GreenTech Manufacturing, produces solar panels. The company's output and labor hours for the past two years are as follows:</div> <table><tr><th>Year</th><th>Output (Solar Panels)</th><th>Labor Hours</th></tr><tr><td>Year 1</td><td>5,000</td><td>2,000</td></tr><tr><td>Year 2</td><td>6,500</td><td>2,200</td></tr></table> <div>Calculate the productivity growth rate for GreenTech Manufacturing.</div> | Year        | Output (Solar Panels) | Labor Hours | Year 1 | 5,000 | 2,000 | Year 2 | 6,500 | 2,200 | 3 Marks | L3 | CO |
| Year   | Output (Solar Panels)                                                                                                                                                                                                                                                                                                                                                                                                            | Labor Hours |                       |             |        |       |       |        |       |       |         |    |    |
| Year 1 | 5,000                                                                                                                                                                                                                                                                                                                                                                                                                            | 2,000       |                       |             |        |       |       |        |       |       |         |    |    |
| Year 2 | 6,500                                                                                                                                                                                                                                                                                                                                                                                                                            | 2,200       |                       |             |        |       |       |        |       |       |         |    |    |

## Part- B

Answer all the Questions

2Qx10M = 20 Marks

|              |    |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |             |    |    |       |    |   |   |   |   |   |   |              |    |    |
|--------------|----|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------|----|----|-------|----|---|---|---|---|---|---|--------------|----|----|
| 6.           | a. | The table below shows the demand for a new aftershave in a shop for each of the last 7 months.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | 10<br>Marks | L3 | CO |       |    |   |   |   |   |   |   |              |    |    |
|              |    | <table><tr><td>Month</td><td>1</td><td>2</td><td>3</td><td>4</td><td>5</td><td>6</td><td>7</td></tr><tr><td>Actual Sales</td><td>46</td><td>55</td><td>62</td><td>68</td><td>49</td><td>81</td><td>74</td></tr></table> <ul style="list-style-type: none"><li>• Calculate a two-month moving average for months three to seven. What would be your forecast for month eight?</li><li>• Apply exponential smoothing with a smoothing constant of 0.6 to derive a forecast for the demand in month eight.</li><li>• Which of the two forecasts for month eight do you prefer and why?</li></ul> |             |    |    | Month | 1  | 2 | 3 | 4 | 5 | 6 | 7 | Actual Sales | 46 | 55 |
| Month        | 1  | 2                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | 3           | 4  | 5  | 6     | 7  |   |   |   |   |   |   |              |    |    |
| Actual Sales | 46 | 55                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | 62          | 68 | 49 | 81    | 74 |   |   |   |   |   |   |              |    |    |
| Or           |    |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |             |    |    |       |    |   |   |   |   |   |   |              |    |    |
| 7.           | a. | How can organizations use forecast error analysis to improve their forecasting processes over time? Provide specific strategies or practices.                                                                                                                                                                                                                                                                                                                                                                                                                                                 | 10<br>Marks | L3 | CO |       |    |   |   |   |   |   |   |              |    |    |
|              |    |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |             |    |    |       |    |   |   |   |   |   |   |              |    |    |
| 8.           | a. | Describe the four main types of plant layouts. What are the advantages and disadvantages of each?                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | 10<br>Marks | L3 | CO |       |    |   |   |   |   |   |   |              |    |    |
| Or           |    |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |             |    |    |       |    |   |   |   |   |   |   |              |    |    |
| 9.           | a. | Explain the concept of forecasting horizons. How does the choice of horizon affect forecasting methods?                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | 10<br>Marks | L3 | CO |       |    |   |   |   |   |   |   |              |    |    |

## Part- C

Answer the following questions

1Qx15M=15Marks

|       |      |                                                                                                                                                                                                                                                                                                                                                                                                                                                               |      |      |      |      |      |      |      |       |      |      |      |      |     |      |          |    |    |
|-------|------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------|------|------|------|------|------|------|-------|------|------|------|------|-----|------|----------|----|----|
| 10.   | a.   | <p>Compute Forecasting and Forecasting errors with formulas for the given sales data calculate the sales forecast for the year 2021 based on four-year simple moving average method. Write all steps. Calculate MAD, MSE and MAPE</p> <table><tr><td>Year</td><td>2015</td><td>2016</td><td>2017</td><td>2018</td><td>2019</td><td>2020</td></tr><tr><td>Sales</td><td>1100</td><td>1000</td><td>1150</td><td>1200</td><td>950</td><td>1050</td></tr></table> | Year | 2015 | 2016 | 2017 | 2018 | 2019 | 2020 | Sales | 1100 | 1000 | 1150 | 1200 | 950 | 1050 | 15 Marks | L3 | CO |
| Year  | 2015 | 2016                                                                                                                                                                                                                                                                                                                                                                                                                                                          | 2017 | 2018 | 2019 | 2020 |      |      |      |       |      |      |      |      |     |      |          |    |    |
| Sales | 1100 | 1000                                                                                                                                                                                                                                                                                                                                                                                                                                                          | 1150 | 1200 | 950  | 1050 |      |      |      |       |      |      |      |      |     |      |          |    |    |

\*\*\*\*\* BEST WISHES \*\*\*\*\*