

Roll No. 

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**Total No. of Pages : 02**
**Total No. of Questions : 08**

**M.Tech.(ME) (Sem.-2)**  
**OPERATIONS MANAGEMENT**  
**Subject Code : MME-508**  
**M.Code : 38209**

**Time : 3 Hrs.**
**Max. Marks : 100**
**INSTRUCTION TO CANDIDATES :**

1. Attempt any FIVE questions out of EIGHT questions.
2. Each question carries TWENTY marks.

1. a) Explain the Global business conditions of India in the present scenario. (10)  
b) Define the forecasting and explain the semi average and moving average methods of forecasting. (10)
2. a) Derive the mathematical expression for new forecast using exponential smoothing method of forecasting. (10)  
b) Explain the major factors affecting the process design. (10)
3. The demand for a product in last 10 years is given below. Forecast the demand for the 11<sup>th</sup> year by simple average and regression methods. Compare the forecasts with the historical data from 4<sup>th</sup> to 10<sup>th</sup> year data to find MAD, Bias, MAPE and SD in both the cases. Which method of forecasting would you recommend? (20)

| Year  | 1   | 2   | 3   | 4   | 5   | 6   | 7   | 8   | 9   | 10  |
|-------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Units | 110 | 130 | 147 | 150 | 177 | 164 | 161 | 170 | 187 | 180 |

4. Define the production control and explain functions of production planning and control. (20)
5. a) Explain various types of maintenance required to be earned out in industries. (10)  
b) Explain the Maintenance Planning and write its procedure. (10)

6. a) What is Standardization? Distinguish between Standardization and Specialisation. (10)
- b) Define Sampling inspection and explain multiple sampling plan with its advantages and limitations. (10)
7. "Rama & Sons" is engaged in the manufacturing of nail drivers. The management of firm thinks that sales of nails drivers logically be related to the amount spent on construction. If the construction volume is in Rs.100 million units and product sales are in Rs.10000 units. Find out:
- a) Is it worthy to consider the correlation between sales of nails and construction volume? (10)
- b) If the projected construction volume for the next month is Rs.3000000000, what would be sales volumes of the nails in rupees? (10)

| Month                                | 1   | 2   | 3   | 4    | 5    | 6    | 7    | 8    | 9    | 10   |
|--------------------------------------|-----|-----|-----|------|------|------|------|------|------|------|
| Nail driver sales *10 <sup>4</sup>   | 7.5 | 10  | 9   | 10.5 | 11.5 | 11   | 10.5 | 10   | 11.5 | 10.5 |
| Construction volume *10 <sup>8</sup> | 2   | 2.5 | 2   | 3.5  | 3.5  | 3    | 2.5  | 3    | 3    | 2.5  |
| Month                                | 11  | 12  | 13  | 14   | 15   | 16   | 17   | 18   | 19   | 20   |
| Nail driver sales *10 <sup>4</sup>   | 10  | 11  | 9   | 9    | 12.5 | 11.5 | 11.5 | 10.5 | 9.11 | 9    |
| Construction volume *10 <sup>8</sup> | 2.2 | 3   | 2.5 | 2    | 3.5  | 3    | 3    | 3    | 3    | 2    |

8. Write the short notes on the following :
- a) Quality Assurance (7)
- b) Supply chain Management (7)
- c) Operations Strategies (6)

**NOTE : Disclosure of Identity by writing Mobile No. or Making of passing request on any page of Answer Sheet will lead to UMC against the Student.**