

**BIRLA INSTITUTE OF TECHNOLOGY, MESRA, RANCHI  
(END SEMESTER EXAMINATION)**

**CLASS: MBA  
BRANCH: MBA**

**SEMESTER : II  
SESSION : SP/2024**

**SUBJECT: MT407R1 MANAGEMENT OF MANUFACTURING SYSTEMS**

**TIME: 3 Hours**

**FULL MARKS: 50**

**INSTRUCTIONS:**

1. The question paper contains 5 questions each of 10 marks and total 50 marks.
  2. Attempt all questions.
  3. The missing data, if any, may be assumed suitably.
  4. Before attempting the question paper, be sure that you have got the correct question paper.
  5. Tables/Data handbook/Graph paper etc. to be supplied to the candidates in the examination hall.
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- Q.1 i) Explain your understanding of production and production systems with suitable examples. [10] 1 3  
ii) What are the significant recent trends in production management? Explain their importance.
- Q.2 i) What are the various deciding factors affecting facility location? Explain briefly. [10] 2 4  
ii) What is an exponential method of forecasting? For the data given in below table, apply exponential smoothing to forecast the demand for the next period,

Week	1	2	3	4
Demand	17	21	19	23

Assume  $\alpha = 0.2$

- Q.3 Explain your understanding of capacity and capacity planning. What are the various types of capacity planning? Provide suitable examples. [10] 3 4  
For the given data, estimate the capacity requirement in terms of the number of machines. Assume that only one type of machine is required,

Product	Annual Demand	Standard Processing time/unit (Hrs.)
A	300	4
B	400	6
C	500	3

- Q.4 i) Explain your understanding of Materials Management. What are its core activities? What are the 5Rs of Materials Management? [10] 4 3  
ii) Explain the objectives of **Plant Maintenance in Production Management**. What are the different types of plant maintenance?
- Q.5 i) What are the different types of Control charts? Briefly explain. [10] 2 3  
ii) What is a special cause and common cause of variation?  
iii) Briefly explain any 5 rules to detect special causes of variation  
iv) Name and briefly explain 7QC tools.

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