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# B.M.S. College of Engineering, Bengaluru-560019

**Autonomous Institute Affiliated to VTU**

## June 2025 Semester End Main Examinations

**Programme: B.E.** **Semester: VI**
**Branch: Mechanical Engineering** **Duration: 3 hrs.**
**Course Code: 20ME6DEDIM** **Max Marks: 100**
**Course: Digital Manufacturing**

**Instructions**: 1. Answer any FIVE full questions, choosing one full question from each unit.
2. Missing data, if any, may be suitably assumed.

**Important Note:** Completing your answers, compulsorily draw diagonal cross lines on the remaining blank pages. Revealing of identification, appeal to evaluator will be treated as malpractice.

| | | UNIT - I | *CO* | *PO* | Marks |
|---|---|---|---|---|---|
| 1 | a) | Define Digital Manufacturing, with the appropriate block diagram. | *CO1* | *PO1* | **10** |
| | b) | Explain the Architecture of Digital Manufacturing system. | *CO1* | *PO1* | **10** |
| | | **OR** | | | |
| 2 | a) | Discuss the operational modes of Digital Manufacturing with a sketch. | *CO1* | *PO1* | **10** |
| | b) | Explain the concept of Product Marketing Scale, Product Quality Management, Collaborative Product Production and Control. Describe also the Collaborative Product Design and Simulation method. | *CO1* | *PO1* | **10** |
| | | **UNIT - II** | | | |
| 3 | a) | Explain Assembly and Parametric modelling. | *CO1* | *PO1* | **10** |
| | b) | Explain the Wire frame and Surface representation schemes. | *CO4* | *PO1* | **10** |
| | | **OR** | | | |
| 4 | a) | Explain the three types of 3D Modelling schemes in CAD. | *CO2* | *PO1* | **10** |
| | b) | Describe the applications of CAD Design Models. | *CO2* | *PO1* | **10** |
| | | **UNIT - III** | | | |
| 5 | a) | List and explain the need for Reverse Engineering. | *CO2* | *PO1* | **10** |
| | b) | List and explain the Reverse Engineering Hardware. | *CO2* | *PO2* | **10** |
| | | **OR** | | | |
| 6 | a) | Explain the work flow of Computer Aided Manufacturing? | *CO3* | *PO2* | **10** |
| | b) | Explain the role and process of component modelling in Computer Aided Manufacturing. | *CO3* | *PO2* | **10** |
| | | **UNIT - IV** | | | |
| 7 | a) | Explain with sketch the working of Sanders model market. | *CO2* | *PO1* | **10** |
| | b) | Discuss the working principle of Genisys Xs printer with sketch. | *CO2* | *PO1* | **10** |
| | | **OR** | | | |

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|---|---|---|---|---|---|---|
| | 8 | a) | List and explain the benefits of Virtual Manufacturing. | *CO4* | *PO1* | **10** |
| | | b) | Explain the tools used in Virtual Manufacturing. | *CO4* | *PO2* | **10** |
| | | | **OR** | | | |
| | | | **UNIT - V** | | | |
| | 9 | a) | Explain the types of product data in PLM. | *CO7* | *PO1* | **10** |
| | | b) | What is product life cycle management system, briefly explain with a sketch. | *CO7* | *PO2* | **10** |
| | | | **OR** | | | |
| | 10 | a) | Explain the essential role of Product Information Model in PLM? | *CO7* | *PO2* | **10** |
| | | b) | Describe the core functionalities of PLM systems. | *CO7* | *PO2* | **10** |

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