| Code No.: ME622PE | R20 | H.T.No. | | | 8 | R | | | | | | |
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**CMR ENGINEERING COLLEGE: : HYDERABAD**
**UGC AUTONOMOUS**
**IV–B.TECH–I–Semester End Examinations (Supply) - December- 2025**
**ADDITIVE MANUFACTURING**
**(MECH)**

**[Time: 3 Hours]** **[Max. Marks: 70]**

**Note:** This question paper contains two parts A and B.
Part A is compulsory which carries 20 marks. Answer all questions in Part A.
Part B consists of 5 Units. Answer any one full question from each unit. Each question carries 10 marks and may have a, b, c as sub questions.

**PART-A** **(20 Marks)**

1. a) Define RP? [2M]
   b) Give the Classification of RP. [2M]
   c) Write the features of LOM. [2M]
   d) Name the process parameters that influence FDM process. [2M]
   e) Name various RP software's. [2M]
   f) Write the difference between paid tooling and indirect tooling. [2M]
   g) Write a small note on STL view 3. [2M]
   h) Write a note on STL file repair. [2M]
   i) What are the most commonly used AM technology in aerospace application. [2M]
   j) How does jewellery industry make use of rapid tooling applications. [2M]

**PART-B** **(50 Marks)**

**2.** Describe the various phases in historical development of Rapid Prototyping? [10M]

**OR**

**3.** Interpret the following
   a. Limitations of Traditional Manufacturing process. [5M]
   b. Advantages of additive manufacturing process over traditional manufacturing process. [5M]

**4.** Enumerate the additive manufacturing techniques of Stereo- Lithography. [10M]

**OR**

**5.** Discuss about various FDM materials and applications of FDM. [10M]

**6.** What is rapid tooling? What is its need? Compare rapid tooling with conventional tooling. [10M]

OR

**7.** Discuss the process of making a rapid tool for spin casting. Assume your own example as product. [10M]

**8.** Explain the features of Velocity 2 and Rhino RP software's [10M]

**OR**

**9.** Write short notes on following:
   a. part building errors [4M]
   b. Errors in STL files [3M]
   c. Features of Mimics software [3M]

**10.** Describe how reverse engineering will be applied to rapid prototyping techniques. [10M]

**OR**

**11.** Express the following application domain of Additive manufacturing

a. Electronics [5M]

b. Machine Tools [5M]

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