

Code No.: ME722PE

R20

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**CMR ENGINEERING COLLEGE: : HYDERABAD
UGC AUTONOMOUS**

**IV- B. TECH-I-Semester End Examinations (Supply) - April- 2024
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) What is additive manufacturing? [2M]
- b) Explain the fundamentals of rapid prototyping? [2M]
- c) List out the detailed specifications of SGC process. [2M]
- d) What is the principle of LOM? [2M]
- e) Interpret the use of power based RP system. [2M]
- f) What is 3D printing? [2M]
- g) Why CAD model need to be convert in STL file in RP? [2M]
- h) Explain about 3D doctor. [2M]
- i) Write any two GIS applications in RP system. [2M]
- j) Write any two applications of RP. [2M]

PART-B

(50 Marks)

2. What is rapid prototyping? Explain about the historical development of rapid prototyping in detail. [10M]

OR

3. a) Discuss about various rapid prototyping processes in detail. [5M]
- b) Explain the real time applications of rapid prototyping. [5M]
4. Explain the construction and working principle of SLA with a neat sketch. Also, write the advantages and disadvantages of SLA. [10M]

OR

5. Explain the construction and working principle of LOM with a neat sketch. Also, write the advantages and disadvantages of LOM. [10M]
6. Discuss about 3D printing, and write the advantages, disadvantages of 3D printing. [10M]

OR

7. a) Distinguish between conventional tooling and rapid tooling. [5M]
- b) Illustrate about direct AIM tooling. [5M]
8. Discuss about rapid prototyping software's used in manufacturing. [10M]

OR

9. a) Distinguish between solid view and view export. [5M]
- b) Explain about the procedure for STL files repair. [5M]
10. Describe the applications of Biomedical engineering in rapid prototyping. [10M]

OR

11. Explain the following applications of RP: [10M]
 - i. Forensic Science.
 - ii. Jewelry Industry.
