

Code No.: ME622PE

R20

H.T.No.

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CMR ENGINEERING COLLEGE: : HYDERABAD
UGC AUTONOMOUS

IV-B.TECH-I-Semester End Examinations (Regular) - November- 2023
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 post processing. [2M]
- b) Define additive manufacturing. [2M]
- c) What are the steps involved in LOM process. [2M]
- d) What are the advantages of FDM method. [2M]
- e) State few applications of Rapid tooling investment casting. [2M]
- f) What is indirect Rapid Tooling? [2M]
- g) Name any four different types of data formats. [2M]
- h) Name various software used in rapid prototyping. [2M]
- i) Write the Benefits of 3D printing for Automotive. [2M]
- j) Write a short note how 3D printing is used in medical field. [2M]

PART-B

(50 Marks)

2. Describe the five steps involved in a general RP process chain. Which steps do you think are likely to be iterated? [10M]
- OR**
3. What is solid based RP? Write the methods in solid based RP Processes. [10M]
4. What are the critical factors that influence the performance and functionalities of the LOM process? [10M]
- OR**
5. Comparison between Binder jet and stereo lithography 3D techniques. [10M]
6. Briefly explain the principle and process details in Selective Laser Sintering (SLS) and its applications with neat sketch. [10M]
- OR**
7. What are the advantages and disadvantages of SLS over other RP processes? [10M]
8. Briefly explain the process of 3D keltool. [10M]
- OR**
9. How does the STL file format store a 3D model? Explain in details. [10M]
10. What are the typical RP applications in engineering and analysis? Briefly describe each of them and illustrate them with examples. [10M]
- OR**
11. Explain the applications of RP in aerospace industry. [10M]
