

Code: 19ME4601C

III B.Tech - II Semester – Regular Examinations – JUNE 2022

**ADDITIVE MANUFACTURING
(MECHANICAL ENGINEERING)**

Duration: 3 hours

Max. Marks: 70

Note: 1. This question paper contains two Parts A and B.

2. Part-A contains 5 short answer questions. Each Question carries 2 Marks.

3. Part-B contains 5 essay questions with an internal choice from each unit. Each question carries 12 marks.

4. All parts of Question paper must be answered in one place.

PART – A

1. a) Define the Additive Manufacturing.
- b) Write the Applications of Vat Photopolymerization process.
- c) What is the principle of LOM?
- d) What are the applications of Selective laser sintering?
- e) Write the Principle of Electron Beam Based metal Deposition Process.

PART – B

UNIT – I

2. Explain briefly the Classification of Additive Manufacturing Processes. 12 M

OR

3. Explain the steps in Additive Manufacturing briefly . 12 M

UNIT – II

4. Explain the Micro-Stereolithography process with sketch. 12 M

OR

5. Explain the Two-Photon Vat Photopolymerization process with sketch. 12 M

UNIT-III

6. Describe the Fusion Deposition Modelling process with sketch. 12 M

OR

7. Explain the Ultrasonic consolidation process with sketch. 12 M

UNIT – IV

8. a) Write the Principle of Electron Beam Melting. 6 M
b) Explain the Electron Beam Melting process with sketch. 6 M

OR

9. Describe the Selective laser Sintering process with sketch. 12 M

UNIT – V

10. Explain the Direct Energy Deposition AM process with sketch. 12 M

OR

11. Explain the Laser Engineered Net Shaping (LENS) process with sketch. 12 M