

Exam.Code:1014

Sub. Code: 35205

2124

M.E. (Mechanical Engineering)

First Semester

MME-104: Rapid Manufacturing

Time allowed: 3 Hours

Max. Marks: 50

*NOTE: Attempt five questions in all, selecting atleast two questions from each Unit. All questions carry equal marks.*

x-x-x

### **UNIT - I**

1. Explain the principle and process of Additive Manufacturing. Discuss the two application levels of Additive manufacturing technology with examples.
2. Distinguish between rapid prototyping and rapid manufacturing. Explain the requirement of indirect processes with examples.
3. Explain the product development process using design thinking approach. Discuss five major product characteristics for successful design.
4. What do you mean by modular design? Discuss the guidelines of design for manufacturing.

### **UNIT - II**

5. Explain the principle and process of photopolymerisation. Explain working and applications of powder bed fusing process.
6. Discuss powder bed fusion based selective laser melting (SLM) process. How it is useful in producing more dense parts?
7. Discuss the principle of liquid based sheet stacking rapid manufacturing processes. Explain working and applications of steriolithography.
8. What is the meaning and need of post processing? Explain about various post processing operations used in rapid manufacturing.

x-x-x