Exam.Code:1014
Sub. Code: 35205

2125
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 Part.

x-x-x

PART-A

Q-1	*(a)*	With the help of a neat diagram, explain the concept of rapid manufacturing.	*6*
	(b)	What are the advantages and disadvantages of rapid manufacturing?	*4*
Q-2	*(a)*	What is modular and non-modular design? Give an example.	*4*
	(b)	Discuss the concept of design for modularity. What are the 05 elements of modular design?	*6*
Q-3		Discuss in detail the processing steps, parameters, advantages, and applications of computer-integrated manufacturing.	*10*
Q-4	*(a)*	What are the 03 stages of reverse engineering?	*4*
	(b)	Discuss the 06 steps of reverse engineering with suitable examples.	*6*

PART-B

Q-5	*(a)*	Discuss the operating mechanism of multi-head powder-based fusion processes with suitable examples.	*6*
	(b)	What are solid-based rapid manufacturing processes? Explain with a suitable example.	*4*
Q-6		What is the basis of material selection in stereolithography? Also, comment on the techno-economic analysis for the stereolithography process.	*10*
Q-7	*(a)*	Where is green rapid manufacturing to be used?	*5*
	(b)	Discuss the market competitiveness aspect for various rapid manufacturing processes.	*5*
Q-8		Write a note on the following:	
	(a)	Systems approach in rapid manufacturing	*5*
	(b)	Vat polymerization	*5*

x-x-x