Reg. No. : | | | | | | | | | | | |

K 4402

B.E./B.Tech. DEGREE EXAMINATION, MAY/JUNE 2009.

Eighth Semester

Mechatronics Engineering

MH 1005 — RAPID PROTOTYPING

(Regulation 2004)

Time : Three hours | Maximum : 100 marks

Answer ALL questions.

PART A — (10 × 2 = 20 marks)

1. What is the need for time compression in product development?

2. What is conceptual desing?

3. Is it possible to make a functional model in rapid modeling?

4. What is DMLS?

5. What are demerits of FDM?

6. Write two applications of LOM.

7. What is difference between 2D and 3D printing?

8. What is JP system?

9. What is Mimics?

10. What is selective laser sintering.

PART B — (5 × 16 = 80 marks)

11. (a) (i) What is re-engineering? Explain. (8)

(ii) How is a prototype of a product made? Explain. (8)

Or

(b) (i) Write the importance of product life cycle. (6)

(ii) Explain the strategy of displaying the prototype model of a new product "2 wheeler – TVS pept". (10)

12. (a) Describe stereo lithography process with applications. (16)

Or

(b) Describe Direct Metal Laser Sintering (DMLS) process with machine details. (16)

13. (a) Describe Fusion Deposition Modeling (FDM) with machine details. (16)

Or

(b) Describe Laminated Object Manufacturing (LOM) with machine details. (16)

14. (a) Describe solid ground curing process with applications and machine details. (16)

Or

(b) Describe difference between Sander's model maker and object Quadra system. (16)

15. (a) Describe difference between Laser Engineering Net Shaping (LENS) and Ballistic Particle Manufacturing (BPM) process. (16)

Or

(b) What are the advantages of software for RP-STL files in medical field? Discuss their applications. (16)

———————