

MODEL QUESTION PAPER

**SIXTH SEMESTER B.Tech Degree Examination
(2013 Scheme)**

13.606.6 ADVANCED MANUFACTURING PROCESSES (MPU) (Elective II)

Time 3 Hrs

Max Marks : 100

PART A

Answer ALL questions. Each Question carries 2 marks

1. Indicate any two advantages of rapid solidification process
2. Indicate the areas where powder metallurgy fabrication has application?
3. Point out the advantages of investment casting
4. Explain the applications of thermoforming
5. Explain the need for pre sintering
6. Define rapid prototyping
7. Differentiate between blow and rotational moulding
8. Indicate the areas where MEMS has application?
9. State different etching methods in MEMS
10. Explain the principle of SCREAM

(2 x 10 = 20 marks)

PART B

Answer any one question from each module (20x4=80 marks)

MODULE I

- 11 (a). Indicate the significance of investment casting Illustrate the process (10 Marks)
- (b). Draw a flow chart representing each stage of PM fabrication and explain the processes CIP and HIP (10 marks)

OR

- 12 Illustrate the processes slush casting and squeeze casting. Explain the advantages, limitations and areas of application (20 marks)

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MODULE II

- 13 Explain the following processes in Plastic processing;
a) Injection moulding b) Rotational moulding
c) Blow moulding d) Extrusion (20 marks)

OR

- 14 (a). Explain the finishing operations of sintered parts in detail (10 Marks)
(b). Explain pressure-less compaction methods (10 Marks)

MODULE III

- 15 Explain the following processes in composite processing;
a) Filament winding b) Compression moulding (20 marks)

OR

- 16 (a) Explain selective laser machining (10marks)
(b) Illustrate stereo lithography process and explain the applications (10 marks)

MODULE IV

- 17 a) Explain the method of Silicon crystal growing and wafer preparation (10marks)
b) Explain the silicon micro machining by single step plasma etching and give important applications (10marks)

OR

- 18 a) Discuss lithography diffusion and ion implantation (10marks)
a) Explain the LIGA micro fabrication process (10marks)