

**Total number of printed pages – 3**      **B. Tech**  
**PEME 6413**

**Eighth Semester Examination – 2008**

**RAPID PROTOTYPING**

**Full Marks – 70**

**Time : 3 Hours**

*Answer Question No. 1 which is compulsory  
and any **five** from the rest.*

*The figures in the right-hand margin  
indicate marks.*



1. Answer the following questions :      2 × 10
- (a) Define productivity.
  - (b) What do you mean by manufacturing ?
  - (c) Classify mass production and batch production.
  - (d) What is concurrent engineering ?

- (e) What are the different activities during post processing in Rapid prototyping ?
  - (f) What is “Voxel” ?
  - (g) Which process is called three Dimensional printing ?
  - (h) What is internal hatching ?
  - (i) What is photopolymer ?
  - (j) Show Graphically how cost varies with product development time ?
2. (a) Describe different manufacturing Systems.      5
- (b) Define Rapid prototyping. Explain its application to batch production.      5
3. Describe in detail the steps involved and process chain for rapid prototype development.      10
4. (a) What is GMP ? Justify rapid prototyping is a GMP.      5
- (b) What are the advantages of RP over other manufacturing Processes ?      5

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**Contd.**

5. Describe with neat diagram the process of Stereolithography with photo polymerization. 10
6. Describe with neat diagram the process of selective laser sintering. 10
7. Describe the process fused deposition modeling for manufacturing three dimensional objects with its advantages and disadvantages. 10
8. Write short notes on any *two* : 5 × 2
- (a) Surface skin film
  - (b) Laminated object manufacturing
  - (c) Flexible manufacturing system.

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