



- Notes :
1. All question carry marks as indicated.
  2. Answer **Three** question from Section A and **Three** question from Section B.
  3. Due credit will be given to neatness and adequate dimensions.
  4. Assume suitable data wherever necessary.
  5. Illustrate your answer necessary with the help of neat sketches.
  6. Use of pen Blue/Black ink/refill only for writing the answer book.

**SECTION – A**

1. a) Explain in brief the basic important steps of conceptual design process. 7  
b) Discuss the historical development related with rapid prototyping. 6
2. a) What is prototype? Why do you need a prototype? What are various types of prototype. 7  
b) What are main steps in making a prototype using rapid prototyping. 7
3. a) Describe the principle of the stereolithography process. 6  
b) Explain the importance of part orientation, support generation and slicing with reference to RPT. 7
4. a) Describe the process of laser sintering system with applications. 7  
b) Discuss the types of materials available for selective laser sintering process. 6
5. a) Explain the process of fused deposition modeling with neat sketch. 7  
b) Explain advantages, disadvantages and applications of fused deposition modeling process. 6

**SECTION – B**

6. a) Explain with sketches the degenerate facets and missing facets. 6  
b) Discuss the principle, process parameters of Laminated object manufacturing. 7
7. a) Explain the process of Ballistic particle manufacturing (BPM). 7  
b) What is rapid tooling? What are various process available in indirect tooling processes. 7
8. a) What is the common format used by RP systems? Describe the format and illustrate with an example. 7  
b) Explain the concept of Laser Engineering Net Shaping (LENS). 6
9. a) What are various commercial software used in rapid prototyping? Explain in details. 7  
b) Explain the direct method of rapid tooling. 6
10. a) What are various types of measuring devices commonly used in reverse engineering process? Explain. 7  
b) Discuss advantages, disadvantages and applications of laminated object manufacturing. 6

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