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GUJARAT TECHNOLOGICAL UNIVERSITY ME - SEMESTER-IV (NEW) EXAMINATION - SUMMER - 2017

Subject Code:2740801 Date: 03/05/2017

Subject Name: RAPID PROTOTYPING AND TOOLIN
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Time:02:30 pm to 05:00 pm Total Marks: 70

Instructions:

- 1. Attempt all questions.
- 2. Make suitable assumptions wherever necessary.
- 3. Figures to the right indicate full marks.
- **Q.1** (a) Enlist the typical applications for which the RP processes are more preferable. 07 (b) Enlist various models for part orientation determination and explain any one in 07 detail. **Q.2** Discuss about the types of resins normally use in various RP processes. 07 Sketch the various scan patterns use in stereolithography. Write their advantages and 07 disadvantages too. OR (b) What are the functions of a support structure and describe the three functional **07** areas of support structure. 0.3 (a) Write the short note on the microstereolithography. 07 **(b)** Explain the working principle of powder bed fusion processes with sketch. 07 OR (a) Write the applications of extrusion-based processes. 07 Q.3 **(b)** Discuss any one proposed model for printing process. 07 Write advantages and disadvantages of laminated object manufacturing (LOM) 0.4 (a) 07 process. **(b)** Explain any two soft rapid toolings methods. 07 OR Explain the working principle of "laser engineered net shaping (LENS)" process 0.4 (a) 07 with neat sketch. **(b)** What do you mean by rapid toolings? Write its typical applications. 07 **Q.5** Write the criteria for selection of reverse engineering system. 07 Explain any two part building errors occur in SLA/SLS and how these errors can 07 **(b)** be minimize? OR (a) Write the medical applications of RP. **Q.5** 07

(b) Discuss the various errors occurs in processing stage of SLA/SLS.

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