

Seat No.: _____

Enrolment No. _____

GUJARAT TECHNOLOGICAL UNIVERSITY
M. E. - SEMESTER – I • EXAMINATION – WINTER 2012

Subject code: 712804N

Date: 10-01-2013

Subject Name: Rapid Prototype and Tooling (Inter Disciplinary Elective - I)

Time: 02.30 pm – 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) Define and discuss product development cycle and compare product development cycle with product life cycle. **07**
(b) Discuss influence of innovation on product development. Suggest ways and means to incorporate customer needs? **07**
- Q.2** (a) Explain the role of virtual prototyping and rapid prototyping in product development. **07**
(b) Explain the term prototyping and its impact on cost quality and time. **07**
OR
(a) List and explain then factors influencing product prototyping. **07**
- Q.3** (a) Explain briefly physical prototype design procedure. **07**
(b) Explain liquid based RP process. **07**
OR
(a) Explain use of models for product and prototype design and evaluation. **07**
(b) Explain Steriolithography and states its limitation **07**
- Q.4** (a) Explain powder based RP process (laser sintering, 3D injection and direct laser deposition process **07**
(b) Explain fully FDM process. **07**
OR
(a) Discuss what is meant by ballistic particle manufacturing. **07**
(b) Explain Factors influencing rapid tooling. **07**
- Q.5** (a) explain virtual reality and virtual prototyping. **07**
(b) explain modeling of physical system(include physical example. **07**
OR
(a) Discuss role of FEA in RP process optimization **07**
(b) Discuss non contact type reverse engineering methods. **07**
