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BANGALORE - 560 037

10ME837

Eighth Semester B.E. Degree Examination, June/July 2018

Rapid Prototyping

Time: 3 hrs.

Max. Marks:100

Note: Answer any FIVE full questions, selecting at least TWO questions from each part.

PART – A

- 1 a. Explain RP wheel depicting the major aspects of RP. (06 Marks)
b. Explain rapid prototyping process chain. (04 Marks)
c. Explain stereolithography process taking process parameters into account. (10 Marks)
- 2 a. Explain in detail the selective laser sintering. (10 Marks)
b. Sketch and explain FDM process, adding the process parameters. Also add a note on FDM materials. (10 Marks)
- 3 a. Explain LOM adding principle of operation and applications. (10 Marks)
b. Explain in detail SGC. Also state the advantages and limitations of it. (10 Marks)
- 4 Write short note on the following:
a. Thermal Ink-jet printer
b. Genisys Xs printer HP system
c. Multijet modeling
d. Object quadra system (20 Marks)

PART – B

- 5 a. Define RP tooling. Explain aluminium filled epoxy tooling. (08 Marks)
b. Explain rapid solidification tooling process. (06 Marks)
c. Explain cast Kirksite, taking materials and design considerations. (06 Marks)
- 6 a. Explain Quick cast process. (07 Marks)
b. Explain Direct Metal laser sintering process. (07 Marks)
c. Give the detailed comparisons between soft tooling and hard tooling. (06 Marks)
- 7 a. Write short notes on the following:
i) STL File
ii) Magics software
iii) Mimics software
iv) Magics communicator (16 Marks)
b. List and briefly explain other important software tools for RP. (04 Marks)
- 8 a. Explain the factors influencing part accuracy. (10 Marks)
b. Explain the factors which determine part building and part finishing in RP models. (10 Marks)

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Important Note : 1. On completing your answers, compulsorily draw diagonal cross lines on the remaining blank pages.
2. Any revealing of identification, appeal to evaluator and /or equations written eg. 42+8 = 50, will be treated as malpractice.