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10ME837

Eighth Semester B.E. Degree Examination, Feb./Mar. 2022
Rapid Prototyping

Time: 3 hrs.

Max. Marks:100

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

PART – A

- 1
 - a. Define Rapid prototyping. Explain the need for time compression in product development with neat block diagram. (08 Marks)
 - b. Explain stereolithography process with a neat sketch. (08 Marks)
 - c. Classify the Rapid prototyping systems based on material addition process. (04 Marks)

- 2
 - a. Explain the working principle of Selective Laser Sintering with a neat sketch. (08 Marks)
 - b. Explain the working of Fusion Deposition Modelling with neat sketch. (08 Marks)
 - c. Distinguish between Stereolithography (SLA) and Selective Laser Sintering (SLS) systems. (04 Marks)

- 3
 - a. Explain the process of Solid Ground Curing (SGC) with neat sketch. (08 Marks)
 - b. Explain Laminated Object Manufacturing (LOM) process with a suitable sketch. (08 Marks)
 - c. Write a note on Laminated Object Manufacturing system parameters. (04 Marks)

- 4
 - a. Explain the working of sanders model maker. List the applications. (10 Marks)
 - b. Explain object Quadra system and Genisys Xs printer system with necessary sketches. (10 Marks)

PART – B

- 5
 - a. Differentiate between conventional tooling and Rapid prototyping Tooling. (04 Marks)
 - b. Explain Silicon Rubber tooling process with neat sketches. (08 Marks)
 - c. Write a note on Epoxy tools and 3D Keltool. (08 Marks)

- 6
 - a. Distinguish between soft tooling and hard tooling. (04 Marks)
 - b. Explain copper polyamide tooling technique. (08 Marks)
 - c. Explain sand casting tooling with necessary sketches. (08 Marks)

- 7

Write a note on :

 - a) STL File (05 Marks)
 - b) MAGICS and MIMICS software (05 Marks)
 - c) Communicator software (05 Marks)
 - d) Solid view software. (05 Marks)

- 8
 - a. Briefly explain the errors due to tessellation and errors due to slicing. (10 Marks)
 - b. Write a note on part building errors and part finishing errors. (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.