

CBCS Scheme

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15MA63

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

Additive Manufacturing

Time: 3 hrs.

Max. Marks: 80

Note: Answer any FIVE full questions, choosing one full question from each module.

Module-1

- 1 a. Explain in detail the difference between Additive manufacturing and CNC machining. (12 Marks)
b. Explain in brief the solid sheet system process. (04 Marks)

OR

- 2 a. Explain the benefits of Additive manufacturing in detail. (04 Marks)
b. Explain in detail Liquid polymer system, Discrete particle system and Molten material system. (12 Marks)

Module-2

- 3 List and briefly explain the Generic process of Additive manufacturing in detail, with a neat sketch. (16 Marks)

OR

- 4 a. Explain in detail the conversion of CAD model to STL. (06 Marks)
b. Explain in brief the following :
i) Removal and clean up ii) Post Processing iii) Conceptualization and CAD (10 Marks)

Module-3

- 5 Explain in detail the Additive Manufacturing unique capabilities. (16 Marks)

OR

- 6 Explain in detail any four build related factors when considering the set up of Additive Manufacturing. (16 Marks)

Module-4

- 7 a. Explain in brief the following with respect to the selection methods for a part :
i) Decision theory ii) Approaches to Feasibility (08 Marks)
b. Explain in detail the production planning and control involved in the manufacturing of Additive manufacturing part. (08 Marks)

OR

- 8 a. Explain in detail the two types of support materials used in Additive manufacturing. (08 Marks)
b. Explain in brief the following : i) Error source ii) Model pre processing. (08 Marks)

Module-5

- 9 a. Explain any four instance where AM models can be applied for Medical Applications. (08 Marks)
b. Explain in detail how Additive manufacturing can be used to build patterns for investment and vacuum casting. (08 Marks)

OR

- 10 a. Explain briefly how Additive manufacturing models can be used for Engineering analysis. (12 Marks)
b. Explain in brief the role of Additive manufacturing in building functional prototypes. (04 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.