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P.E.S. College of Engineering, Mandya - 571 401

(An Autonomous Institution affiliated to VTU, Belagavi)

Eighth Semester, B.E. - Mechanical Engineering

Semester End Examination; May / June - 2019

Additive Manufacturing Process

Time: 3 hrs

Max. Marks: 100

Note: Answer FIVE full questions, selecting ONE full question from each unit.

UNIT - I

- 1 a. Explain three types of CAD models used as virtual prototype. 8
- b. Describe generic process of additive manufacturing form CAD to part. 12
- 2 a. Discuss different motions given to elevator table / platform of Stereolithography machine during part building process. 8
- b. With the help of sketches, describe solid ground curing process. 12

UNIT - II

- 3 a. Enumerate merits and demerits of Selective Laser Sintering process. 12
- b. Describe the LENS process with a neat sketch. 8
- 4 a. What are the advantages and disadvantages of LOM process? 8
- b. What are the applications of LOM parts? 4
- c. Explain FDM process with a neat sketch. 8

UNIT - III

- 5 a. Distinguish between Concept modeler and AM machine. 5
- b. Explain Thermo jet printer with a neat sketch. Also mention its merits and demerits. 10
- c. With the help of neat sketch, explain Z-Corportion-3D printer. 5
- 6 a. Explain the fabrication of models using JP system 5 and list its applications. 12
- b. Describe sanders model maker with a neat sketch. 8

UNIT - IV

- 7 a. Describe classification of Rapid tools. 8
- b. Sketch and explain 3D Keltool process. 12
- 8 a. Explain DTM rapid tool process and discuss about various materials used in this process. 12
- b. Explain direct AIM Stereolithography tooling and its merits and demerits. 8

UNIT - V

- 9 a. Describe the process of making medical model using AM technique and also list the benefits of medical models. 12
- b. Discuss about limitations of AM in medical modelling. 8
- 10 a. What are the application of AM in automotive industry? 10
- b. Discuss the merits of AM in Aeronautical industry. 10