

CBCS SCHEME

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Eighth Semester B.E. Degree Examination, June/July 2019

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. Briefly explain the process chain of additive manufacturing. (08 Marks)
- b. Explain discrete particle system. (08 Marks)

OR

- 2 a. Explain the steps involved in property enhancement using thermal techniques. (08 Marks)
- b. Write any eight applications of AM in Aerospace, Automobile, Medical and general engineering. (08 Marks)

Module-2

- 3 a. With a neat sketch explain the working of hydraulic piston motors. (08 Marks)
- b. With a simple pneumatic circuit explain the supply air throttling system. (08 Marks)

OR

- 4 a. Classify Direct Current motors. With a neat sketch, explain the working of a DC motor. (08 Marks)
- b. Explain the working of diode in a circuit with neat sketches. (08 Marks)

Module-3

- 5 a. How polymers are classified? (02 Marks)
- b. Explain polydispersity and molecular weight distribution in polymers. (06 Marks)
- c. Write a short note on compression moulding of polymers with a neat sketch. (08 Marks)

OR

- 6 a. List out the mechanical methods of powder production systems. Explain any one with a neat sketch. (08 Marks)
- b. What are the stages of liquid phase sintering? Explain any one stage. (08 Marks)

Module-4

- 7 a. Explain the bottom up and top down methods of synthesis. (08 Marks)
- b. Explain the mechanical grinding methods of creating nano structures. (08 Marks)

OR

8 a. With a neat sketch, explain the working of transmission electron microscopy.. (08 Marks)
b. Explain the working principles of Atomic force microscopy. (08 Marks)

Module_5

9 a. List out the advantages of CNC machines over NC machines. (08 Marks)
b. Write a part programming for the component shown in the Fig.Q9(b). (08 Marks)

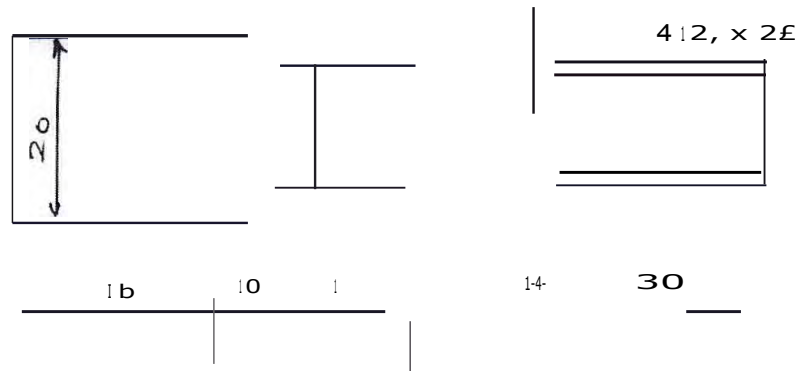


Fig.Q9(b)

OR

10 a. Write down the benefits of automation. **(08 Marks)**
b. Explain the different levels of automation with examples. **(08 Marks)**