CBCS SCHEME

USN | | | | | | | | | | |

15ME82

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)**

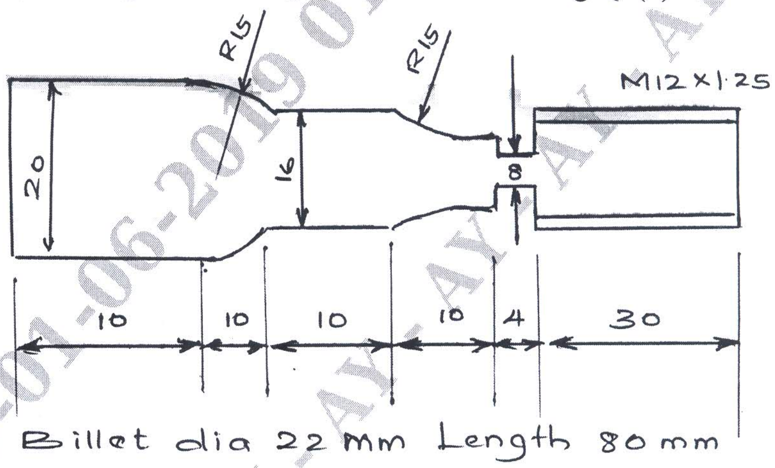

Fig.Q9(b)

OR

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

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