CBCS SCHEME

15ME82

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Eighth Semester B.E. Degree Examination, July/August 2022
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 Additive manufacturing process chain with a neat sketch.   **(08 Marks)**
    b.   Explain stereolithiography process with a neat sketch.   **(08 Marks)**

OR

2   a.   List out the post processing technique of additive manufacturing parts. Explain any three techniques.   **(08 Marks)**
    b.   Explain the application of additive manufacturing.   **(08 Marks)**

Module-2

3   a.   With a neat sketch, explain the working of hydraulic motors.
         i) Gear Motor   ii) Balanced vane motor.   **(08 Marks)**
    b.   With Torque – speed curve, explain compound motor.   **(04 Marks)**
    c.   List advantages and disadvantages of DC motors.   **(04 Marks)**

OR

4   Explain briefly with neat diagrams the following : i) Thyristors ii) Triacs iii) Diodes
         iv) Shape memory alloy.   **(16 Marks)**

Module-3

5   a.   List out the polymers used for Additive manufacturing process, with a neat sketch explain polymer processing by wet spinning technique.   **(08 Marks)**
    b.   Explain with neat sketch compression moulding of polymers.   **(08 Marks)**

OR

6   a.   Explain the various steps involved in production of a power metallurgy component. **(08 Marks)**
    b.   Explain the applications of powder metallurgy components.   **(08 Marks)**

Module-4

7   a.   Explain with a neat sketch the sol – gel process.   **(08 Marks)**
    b.   With a neat sketch explain flame assisted ultrasonic spray phyrolysis process. **(08 Marks)**

OR

8   a.   Explain with a neat sketch Transmission Electron Microscopy.   **(08 Marks)**
    b.   With a neat sketch, explain Electron probe Micro Analyzer. List its advantages and disadvantages.   **(08 Marks)**

Module-5

9   a.   List out the advantages of CNC machines over NC machine.   **(06 Marks)**
    b.   Explain briefly the various strategies for automation and process improvement.   **(10 Marks)**

OR

10 a.   Explain with a block diagram the levels of automation.   **(10 Marks)**
    b.   Distinguish between continuous and discrete control in manufacturing industries. **(06 Marks)**

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