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15ME82

Eighth Semester B.E. Degree Examination, Feb./Mar. 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 the steps involved in post processing of additive manufacturing process in brief. **(08 Marks)**
b. Explain the laminated object manufacturing process with sketch. **(08 Marks)**

OR

2 a. Explain direct metal laser sintering process with neat sketch. **(08 Marks)**
b. Explain the applications of additive manufacturing process in brief. **(08 Marks)**

Module-2

3 a. Explain electric DC motor with sketch. **(10 Marks)**
b. Explain relay in brief. **(06 Marks)**

OR

4 a. Explain regenerative hydraulic circuit with sketch. **(08 Marks)**
b. Explain shape memory alloy in brief. **(08 Marks)**

Module-3

5 a. Explain the steps involved in powder metallurgy. **(08 Marks)**
b. Distinguish between dry spinning and net spinning in brief. **(08 Marks)**

OR

6 a. Explain scanning electron microscope with sketch. **(08 Marks)**
b. Explain sintering process in powder metallurgy. **(08 Marks)**

Module-4

7 a. Explain the wet chemical synthesis in material technology. **(08 Marks)**
b. Explain chemical vapour condensation process in nanomaterial technology. **(08 Marks)**

OR

8 a. Explain scanning probe microscope. **(08 Marks)**
b. Explain transmission electron microscope. **(08 Marks)**

Module-5

9 a. Distinguish NC and CNC machines. **(08 Marks)**

b. Write a manual part program for the profile as shown in the Fig.Q.9(b). **(08 Marks)**

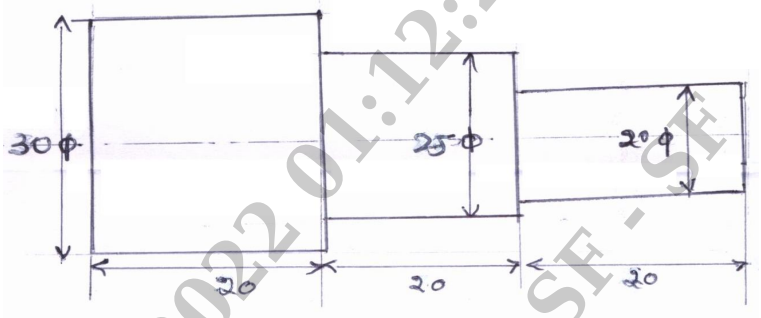

Fig.Q.9(b)

OR

10 a. Explain the principles and strategies of automation. **(08 Marks)**

b. Distinguish continuous and discrete control in automation. **(08 Marks)**

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