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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 wet 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)

Important Note : 1. On completing your answers, compulsorily draw diagonal cross lines on the remaining blank pages.  
2. Any revealing of identification, appeal to evaluator and/or equations written eg. 42+8 = 50, will be treated as malpractice.

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)

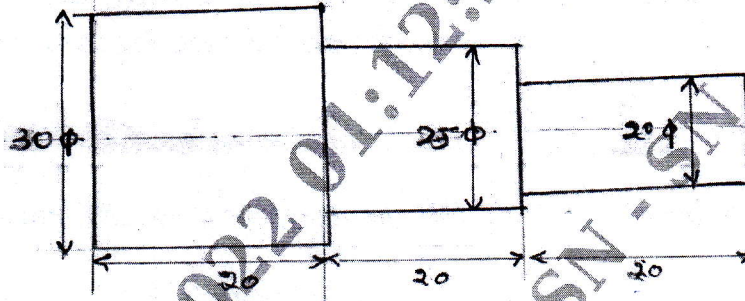


Fig.Q.9(b)

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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