



CBCS SCHEME

17ME82

Eighth Semester B.E. Degree Examination, June/July 2023 Additive Manufacturing

Time: 3 hrs.

Max. Marks: 100

Note: Answer any FIVE full questions, choosing ONE full question from each module.

Module-1

- 1 a. Enumerate difference between AM and CNC. (10 Marks)
b. Briefly explain the application of AM in field aerospace and automobile. (10 Marks)

OR

- 2 a. Write a detail steps involved in selection method followed for an AM. (10 Marks)
b. Write a note on laminated object manufacturing with a neat sketch along with advantage, disadvantage and applications. (10 Marks)

Module-2

- 3 a. With a neat sketch, explain the double acting cylinders. (10 Marks)
b. Briefly explain design of pneumatic circuit. (10 Marks)

OR

- 4 a. Explain with neat sketch diagram of DC shunt motors. (10 Marks)
b. Briefly explain about piezoelectric actuators. (10 Marks)

Module-3

- 5 a. Explain various mechanical power production techniques. (10 Marks)
b. With a neat diagram explain : i) Gasatomization ii) Vacuum atomization. (10 Marks)

OR

- 6 a. With a neat diagram, explain : i) Dry spinning ii) Wet spinning. (10 Marks)
b. Define power metallurgy and name steps involved in power metallurgy, write advantages and disadvantages. (10 Marks)

Module-4

- 7 a. With a neat sketch explain briefly scanning electron microscope. (10 Marks)
b. With a neat sketch describe electron probe micro-analyzer. (10 Marks)

OR

- 8 a. With a neat sketch explain x-ray powder diffraction. (10 Marks)
b. With a neat diagram, briefly describe Atomic force microscope. (10 Marks)

Module-5

- 9 a. Enumerate various advantages and disadvantages and applications of CNC machines. (10 Marks)
b. Explain role of part programmer's job and various NC part programming languages. (10 Marks)

OR

- 10 a. Explain various levels and advanced automation. (10 Marks)
b. Explain : i) USA principle ii) Ten strategies. (10 Marks)

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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.