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15ME753

Seventh Semester B.E. Degree Examination, Feb./Mar. 2022 Mechatronics

Time: 3 hrs.

Max. Marks: 80

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

Module-1

- 1 a. Define mechatronics and explain the design of mechatronics in brief. (08 Marks)
b. Explain the mechatronics as multidisciplinary scenario with neat sketch. (08 Marks)

OR

- 2 a. Explain Eddy current proximity sensor with neat sketch. (08 Marks)
b. Explain hall effect sensor with neat sketch. (08 Marks)

Module-2

- 3 a. Define microprocessor and explain μ p 8085 A architecture with block diagram. (10 Marks)
b. Differentiate microprocessor and microcontroller. (06 Marks)

OR

- 4 a. Explain the different registers used in microprocessor 8085 A in brief. (08 Marks)
b. Explain Micro controller with block diagram. (08 Marks)

Module-3

- 5 a. Explain the programming and basic concept of ladder diagram. (08 Marks)
b. Define robot and explain the parts of robot in brief. (08 Marks)

OR

- 6 a. Explain the concept of PLC with neat block diagram. (08 Marks)
b. Explain the latching concept of PLC in brief. (08 Marks)

Module-4

- 7 a. Explain any one mechanical actuations system with neat sketches. (06 Marks)
b. Write a note on : i) Servo motor ii) AC motor. (10 Marks)

OR

- 8 a. Explain Solenoids and Relays in brief. (08 Marks)
b. Explain mechanical switches in brief. (08 Marks)

Module-5

- 9 a. Write a note on : i) Pressure relief valve ii) Pressure reducing valve. (10 Marks)
b. Explain double acting hydraulic cylinder with neat sketch. (06 Marks)

OR

- 10 a. Explain meter in hydraulic circuit with neat sketch. (08 Marks)
b. Explain cylinder sequencing circuit with neat diagram. (08 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.