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10AU82

Eighth Semester B.E. Degree Examination, July/August 2021
Autotronics

Time: 3 hrs.

Max. Marks: 100

Note: Answer any FIVE full questions.

- 1 a. Define Mechatronics. Briefly explain the Evolution of Mechatronics. (10 Marks)
b. Explain Open loop and Closed loop control system with suitable examples. (10 Marks)
- 2 a. Briefly explain the working of the following proximity sensor with suitable sketch.
i) Inductive type ii) Capacitive type. (10 Marks)
b. What is Hall Effect? Explain the principle of Hall Effect with neat sketch. (10 Marks)
- 3 a. What is Bouncing in Mechanical switches? How Bouncing can be prevented. (08 Marks)
b. Explain the speed control of a DC motor using solid state switch, using suitable block diagram. (08 Marks)
c. Write a note on Stepper Motors. (04 Marks)
- 4 a. Define Signal Conditioning. What are the necessity for Signal Conditioning? (04 Marks)
b. Explain Balance mode of wheat-stone bridge and hence deduce the expression for change in output voltage. (10 Marks)
c. With block diagram, explain Data Acquisition System. (06 Marks)
- 5 a. Explain the basic laws of Boolean algebra. (08 Marks)
b. Write the symbols and truth tables for two inputs :
i) AND gate ii) OR gate iii) NAND gate. (09 Marks)
c. How Negative integers are represented in Binary system? Narrate with suitable example. (03 Marks)
- 6 a. Explain with neat sketch, the Internal architecture of Intel 8085 microprocessor. (10 Marks)
b. What is meant by Instruction Set? How are they grouped? Explain in brief. (10 Marks)
- 7 a. With a neat block diagram, explain Micro processor timing and Control unit. (10 Marks)
b. What is Clock? Why clock is necessary in a microprocessor? Draw the ideal and non-ideal clock. (10 Marks)
- 8 a. Explain Temperature Monitoring System with a block diagram. (10 Marks)
b. Explain with a suitable sketch any one general application of Mechatronics in Automobile. (10 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.