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10AU82

Eighth Semester B.E. Degree Examination, Aug./Sept.2020
Autotronics

Time: 3 hrs. Max. Marks:100

Note: ***Answer any FIVE full questions, selecting atleast TWO questions from each part.***

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.

PART – A

1 a. Define Mechatronics. Briefly explain the evolution of Mechatronics. **(10 Marks)**

b. With a neat block diagram explain Automatic Engine Control System. **(10 Marks)**

2 a. Briefly explain the classification of transducers. **(10 Marks)**

b. What is Hall effect? Explain the principle of Hall effect with neat sketch. **(10 Marks)**

3 a. Explain the principle of Brushless DC permanent magnet motor with a neat sketch. **(10 Marks)**

b. What is Darlington pair? With a neat circuit diagram explain. **(10 Marks)**

4 a. With a neat block diagram explain the working of data acquisition system. **(10 Marks)**

b. Explain with a neat diagram, Wheatstone network and hence deduce the expression for change in output voltage. **(10 Marks)**

PART – B

5 a. With the help of symbol and truth table explain AND, OR, NOR and NAND gates. **(10 Marks)**

b. (i) $(B2F8)_{16} = (\quad)_8$
(ii) $(10101.01101)_2 = (\quad)_8$
(iii) $(A267)_8 = (\quad)_2$
(iv) $(36109)_{10} = (\quad)_2$
(v) $(1111000100001010)_2 = (\quad)_{16}$ **(10 Marks)**

6 a. With a block diagram, explain the architecture of Intel 8085A processor. **(14Marks)**

b. What do you mean by addressing modes? Explain different types of addressing modes in Intel 8085A. **(06 Marks)**

7 a. Distinguish between Register and Flag. **(10 Marks)**

b. Write a short note on:
(i) Bus
(ii) Stack Pointer (SP) **(10 Marks)**

8 a. Explain with a suitable sketch any one general application of mechatronics in automobile. **(10 Marks)**

b. Explain temperature monitoring system with a block diagram. **(10 Marks)**

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