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10AU82

Eighth Semester B.E. Degree Examination, June/July 2017
Autotronics

Time: 3 hrs. Max. Marks:100

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

PART – A

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

b. Explain open loop and closed loop control system with suitable examples. **(10 Marks)**

2 a. Briefly explain the classification of transducers. **(06 Marks)**

b. What is hall effect? Explain the principle of hall effect with neat sketch. **(08 Marks)**

c. Explain capacitive type proximity sensor. **(06 Marks)**

3 a. Write a symbolic representation of thyristor and explain its characteristics. **(10 Marks)**

b. With a neat sketch. Explain the principle of working of permanent magnet DC motor. **(10 Marks)**

4 a. Define signal conditioning. What are the necessity for signal conditioning? **(04 Marks)**

b. Explain balance mode of wheat-store bridge and hence deduce the expression for change in output voltage. **(10 Marks)**

c. With block diagram, explain data acquisition system. **(06 Marks)**

PART – B

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

b. Compute the following :

i) $(654)_{10} = (\quad)_8$

ii) $(1101{\cdot}11)_2 = (\quad)_{10}$

iii) $(F9BD)_{16} = (\quad)_{10}$

iv) Add 10011 and 100

v) Sub 0011 from 1101. **(10 Marks)**

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

b. Write a note on machine language and assembly language. **(06 Marks)**

7 a. What are buses? Explain the main features and functions of a data bus, address bus and control bus. **(10 Marks)**

b. What is system clock and what are its functions? **(10 Marks)**

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

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

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