Integral University, Lucknow

I Mid Semester Examination 2014-2015

Mechatronis (IEME-024)

Year : Pre Final Year Mechanical Engineering

Maximum Marks: 15   Time : 90 Minutes

Note : Attempt any three problem. All problems carry equal marks. Make diagram & data sets where it is needed.

1. Explain key elements of mechatronics system in detail.

2. Explain working of Zener diode with appropriate circuit diagrams & applications of it.

3. Minimize the boolean expression with the help of two 4*1 multiplexer.

$$F(X,Y,Z) = \sum(1,2,4,6,7)$$

4. Explain the working of the adder combinational circuit.

5. Write down basic difference of the sequential & combinational circuits.

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II Mid Semester Examination 2014-2015

Mechatronis (IEME-024)

Year : Pre Final Year Mechanical Engineering

Maximum Marks: 15   Time : 60 Minutes

Note : Attempt any three problem. All problems carry equal marks. Make diagram, data sets & put mathematical equations where it is needed.

1. Write a short note on Bode Plot. Draw the bode plot of the following
$$G(s) = \frac{10000}{s(1 + 0.1s)(1 + 0.01s)}$$

2. Find whether the system is stable or unstable if characteristic equation is represented as
$$M(s) = \{s^5 + 2s^4 + 3s^3 + 4s^2 + 3s + 2\}$$

3. Write a short notes on SR flip-flop.

4. Explain any one type of temperature measuring instrument with it's working.

5. Write in detail about the transfer function, order of the system & stability of the system.

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Make Up Test 2014-2015

Mechatronis (IEME-024)

Year : Pre Final Year Mechanical Engineering

Maximum Marks: 15   Time : 60 Minutes

Note : Attempt any three problem. All problems carry equal marks. Make diagram, data sets & put mathematical equations where it is needed.

1. Write a short note on Bode Plot. Draw the bode plot of the following

$$G(s) = \frac{1000}{s(1 + 0.1s)(1 + 0.01s)}$$

2. Write a short notes on D flip-flop.
3. Explain any one type of pressure measuring instrument with it's working.
4. Write in detail zener diode, it's working & associated graphs.