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EEN-021

(Following Paper ID and Roll No. to be filled in your Answer Book)

PAPER ID : 121658

Roll No.

B. Tech.

(SEM VI) THEORY EXAMINATION 2015

MECHATRONICS

Time : 2 Hours]

[Total Marks : 50

Note: Attempt all questions:

1. Attempt any four of the following: (3.5x4=14)
 - (a) Describe the technique used to measure displacement using a transducer. Dismiss about the instrument in detail.
 - (b) Describe the instrumentation used for sensing proximity Where is such arrangement used?
 - (c) Describe a pressure transducer in detail.
 - (d) How is the level of liquid measured?

(e) With the help of a schematic diagram explain the data acquisition system. Also discuss its fields of application.

(f) What are the roles of filtering and amplification of signals in signal & conditioning?

2. Attempt any four of the following: (3x4=12)

(a) Compare and contrast the direction control valve with the pressure control valve.

(b) Explain the role of kinematic chain, cams and gear-tram in the working of a mechanical actuation system.

(c) Write about dampers and its types bringing about the difference between them.

(d) Compare the static switches with solenoid operated switches in detail.,

(e) What do you understand by Electric Drive system? Explain its working along with field of its application.

(f) With the help of neat sketch, explain the working and application of Servomechanism.

3. Attempt any two of the following: (6x2=12)

(a) Explain the pin diagram of a Microprocessor.

(b) What do you understand by Microcontrollers ? How do they differ from Microprocessor?

(c) Discuss about PLC in detail.

4. Write detailed notes on any two of the following: 6x2=12

(a) Control of Industrial Robots

(b) Control of Automobile Engines.

(c) What are the functions of NC machine? Discuss about its operating principle in detail.

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