

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

PAPER ID : 2501

Roll No.

--	--	--	--	--	--	--	--	--	--

**B. Tech.**

**(SEM. VI) THEORY EXAMINATION 2010-11**  
**MECHATRONICS**

*Time : 2 Hours*

*Total Marks : 50*

**Note : Attempt all questions.**

1. Attempt any four of the following : (3.5×4=14)
  - (a) Describe the technique used to measure displacement using a transducer. Discuss 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 : (3×4=12)
  - (a) Compare and contrast the direction control valve with the pressure control valve.

- (b) Explain the role of kinematic chain, cams and gear-train 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 alongwith field of its applications.
- (f) With the help of neat sketch, explain the working and application of Servo mechanism.

3. Attempt any two of the following : (6×2=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 : (6×2=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.