

End Semester Examinations - 2015-16 Even Semester - May 2016

14ME2024 Mechatronics

Set A

Time : 3 hrs
Total Marks: 100

1. With an example explain the working principle of pneumatic, linear and rotary actuators.
OR
2. Describe the mechatronics, measurement and various control system with neat sketch.
3. Explain in detail the performance terminologies used in transducers.
OR
4. Elaborate with neat sketch the working principle of servomotor and stepper motor.
5. Give a detailed account of LED blinking and voltage measurement using ADC.
OR
6. Draw the architecture of 8085 microprocessor and explain its operating principle.
7. Develop a PLC ladder logic diagram for the applications stated below.
 - a) A motor and its lubricating pump motor are both running. Lubrication for main motor bearings is required during motor coast down time. After the main motor is shut off the lubricating pump remains ON for a time corresponding to coast down time of 20 sec. (10 Marks)
 - b) Draw a PLC ladder logic for the following segments (10 Marks)
 1. When switch S1 is turned ON, light A goes ON
 2. 8 secs after A light, light B also goes ON
 3. Both lights OFF whenever switch 1 is open.**OR**
8. With a neat sketch draw architecture of a PLC and explain its working principle.
9. Explain in detail the concepts of analog to digital and digital to analog conversion.

Wishing you All the Best