## CT Inst. of Engg., Mg

Roll No. Total No. of Pages: 02

Total No. of Questions: 08

M.Tech. (ME) (Sem.-2<sup>nd</sup>)
MECHATRONICS

Subject Code: MME-510

Paper ID : [E0413]

Time: 3 Hrs.

Max. Marks: 100

## INSTRUCTION TO CANDIDATES :

- 1. Attempt any FIVE questions out of EIGHT questions.
- 2. Each question carry TWENTY marks.
- 1. (a) What is a control system? Differentiate between microcontroller based controller and PC based controller.
  - (b) Distinguish between Robot and SPM. List there applications.
- 2. What is electro-hydraulic actuation system? Where it is used and why? Give-some electro-hydraulic valves.
- (a) Differentiate between absolute and incremental encoder with neat sketch.
  - (b) What is strain gauge? How it is used for force and displacement measurement?
- 4. Discuss the following:
  - (I) Karnaugh maps
  - (II) Multiplexers
  - (III) Voltage regulator
  - (IV) Ball screw and nut

- 5. (a) Explain the function of stepper motor and its
  - (b) Differentiate between servo and non servo mo
- 6. (a) What is DAC and what are its applications?
  - (b) What is interfacing? What do you understa ports?
- 7. What is microcomputer structure? Discuss its con-
- 8. Write short note on:
  - I) Serial communication
  - II) Neural networks
  - III) Mosfet drives
  - IV) PLC

