



Reg. No. : .....

Name : .....

**Seventh Semester B.Tech. Degree Examination, May 2014**  
**(2008 Scheme)**

**08.702 : MECHATRONICS (MPU)**

Time : 3 Hours

Max. Marks : 100

**PART – A**



Answer **all** questions from Part – A.

1. Define the terms stability and resolution.
2. Explain a closed loop control system.
3. Differentiate between absolute and incremental encoders.
4. Explain the working of a tactile sensor.
5. Model a series connected resistor inductor circuit with output voltage  $V_L$  and input voltage  $V$ .
6. Describe a CCD camera.
7. What is brushless motor ?
8. Show the basic building block of fluid system.
9. What is harmonic drive ?
10. Describe various types of pressure control valves.

**(10×4=40 Marks)**

**PART – B**

Answer **one full** question from **each** Module in Part – B.

**Module – I**

- |        |   |    |
|--------|---|----|
| 11. a) | Explain the methods of high temperature measurement.  | 10 |
| b)     | Explain the working of LVDT.                          | 10 |
| 12. a) | Describe about resolvers and synchros.                | 10 |
| b)     | Describe about different methods of MEMS fabrication. | 10 |

**Module – II**

- |        |  |    |
|--------|--|----|
| 13. a) | Explain about thermal and mechanical system building blocks. | 10 |
| b)     | Explain the working of hydrostatic bearings.                 | 10 |
| 14. a) | With block diagram explain the architecture of a PLC.        | 10 |
| b)     | Explain ladder logic diagrams of PLC.                        | 10 |

**Module – III**

- |        |   |    |
|--------|---|----|
| 15. a) | Explain the working of AC motor.                                | 8  |
| b)     | Explain various image processing techniques.                    | 12 |
| 16. a) | Explain various types of range finders.                         | 8  |
| b)     | Explain with neat diagram an automatic car park barrier system. | 12 |

**(3×20=60 Marks)**