

GUJARAT TECHNOLOGICAL UNIVERSITY
BE - SEMESTER-IV EXAMINATION – SUMMER 2016

Subject Code:142002**Date:10/06/2016****Subject Name:Basic Mechatronics****Time:10:30 AM to 01:00 PM****Total Marks: 70****Instructions:**

1. Attempt all questions.
2. Make suitable assumptions wherever necessary.
3. Figures to the right indicate full marks.

- Q.1** (a) State the advantages and disadvantages of Mechatronics Systems. **07**
(b) With neat sketch explain variable displacement Vane Pump. **07**
- Q.2** (a) What is a Control System? Briefly explain types of control systems with an example of each control system. **07**
(b) Write short note on bourdon tube pressure gauge. **07**
- OR**
- (b) Write a short note on LVDT. **07**
- Q.3** (a) Explain different types of Gears with neat sketch. **07**
(b) Derive equation for mathematical model of PMDC (Permanent Magnet DC) motor. **07**
- OR**
- Q.3** (a) With neat sketch discuss types of cams and followers. **07**
(b) With neat sketch explain working and construction of DC Stepper Motor. **07**
- Q.4** (a) What is an encoder? Explain any one encoder with neat sketch. **07**
(b) List types of Robot Configuration. Explain any one with neat sketch. **07**
- OR**
- Q.4** (a) Explain half-wave and full-wave rectifiers with circuit diagrams. Also draw the waveforms. **07**
(b) Compare NC machine with CNC machine. **07**
- Q.5** (a) Explain different types of buses in Microprocessor. **07**
(b) Explain Anti-Lock Braking System (ABS) as Mechatronics System. **07**
- OR**
- Q.5** (a) Explain different types of memories in Microprocessor. **07**
(b) Explain Digital Camera as Mechatronics System. **07**
