

GUJARAT TECHNOLOGICAL UNIVERSITY**BE- Vth SEMESTER-EXAMINATION – MAY/JUNE - 2012****Subject code: 150203****Date: 04/06/2012****Subject Name: Power Electronics & Control Engineering****Time: 02:30 pm – 05:00 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) Explain the principle and operation of SCR with two transistor analogy. **07**
(b) Explain the phase control using Triac. **07**
- Q.2** (a) Explain DC motor in detail. **07**
(b) Explain matching of speed-torque characteristics of motor and load. **07**
- OR**
- (b) Explain variable speed AC motor drives. **07**
- Q.3** (a) Describe timing and sequential control in welding process. **07**
(b) Explain variable reactance method for current control in welding process. **07**
- OR**
- Q.3** (a) What is the basic principle of induction heating? Show the relation between depth of heat penetration and power requirement. **07**
(b) What is the basic principle of dielectric heating? Show the relation between depth of heat penetration and power requirement. **07**
- Q.4** (a) Explain the functions of following pins of 8085. **07**
(i) Address and Data Bus (ii) Control and status signals (iii) Power supply and clock frequency (iv) serial I/O ports.
(b) Describe memory read machine cycle in 8085. **07**
- OR**
- Q.4** (a) (i) Explain any one Data transfer instructions. **07**
(ii) Explain any two Arithmetic instructions.
(iii) Explain any two Logical instructions.
(b) Describe memory write machine cycle in 8085. **07**
- Q.5** (a) Explain construction and application of thermocouples and strain gauges. **07**
(b) What is Digital to Analog converters? Explain any one type of Digital to Analog converter. **07**
- OR**
- Q.5** (a) What is Analog to digital converters? Explain any one type of Analog to digital converter. **07**
(b) How to control speed of DC shunt motor using SCRs? **07**
