

GUJARAT TECHNOLOGICAL UNIVERSITY**BE - SEMESTER-V- EXAMINATION – SUMMER 2016****Subject Code: 150203****Date: 09/05/2016****Subject Name: Power Electronics & Control Engineering****Time: 02:30 PM to 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) List and explain various methods to turn on SCR. **07**
 (b) Explain working principle and operation of dielectric heating. **07**

- Q.2** (a) Explain working principle and operation of induction heating. **07**
 (b) List out the differences between SCR and Transistor. **07**

OR

- (b) Explain characteristic and working of UJT in detail. **07**

- Q.3** (a) Explain timing and sequential control in welding. **07**
 (b) Explain the working of TRIAC in detail. **07**

OR

- Q.3** (a) Explain the concept of speed control of DC motor using SCRs. **07**
 (b) Explain magnetic energy storage welder and capacitor energy storage welder. **07**

- Q.4** (a) Classify and explain the instruction set of 8085 microprocessor according to their functionalities. **07**
 (b) Draw and explain memory classification. **07**

OR

- Q.4** (a) Explain flag register of microprocessor 8085 in detail. **07**
 (b) Explain the following instructions with an example **07**
 STA, JZ, CMP, DCR, XCHG, RLC, HLT

- Q.5** (a) Explain successive-approximation type A/D converter and Dual slope A/D converter **07**
 (b) 1. Write an assembly language program to move 16 bits data from memory locations C020H & C021H to register pair BC. **03**
 2. Add the content of memory locations F000H & F001H and place the result in memory location F002H. Increment the result by 2. **04**

OR

- Q.5** (a) Explain Programmable Logic Controller in detail. **07**
 (b) Sixteen bytes of data are stored in memory locations at C050H to C05FH. Write an assembly language program to transfer the block of data to new memory locations at C070H. **07**
