

GUJARAT TECHNOLOGICAL UNIVERSITY**BE - SEMESTER- V(OLD) EXAMINATION – SUMMER 2019****Subject Code:150203****Date:31/05/2019****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) Draw and explain SCR construction in detail. Also draw and explain SCR V-I characteristics with different operation modes. **07**
(b) Explain speed control of DC motor using SCRs. **07**
- Q.2** (a) Explain the construction and characteristics of the TRIAC. **07**
(b) Explain the principle and operation of SCR with two transistor analogy. **07**
- OR**
- (b) Explain construction & characteristics of UJT with neat diagram. **07**
- Q.3** (a) Explain variable reactance method for current control in welding process. **07**
(b) Write short note on thermocouples and strain gauge. **07**
- OR**
- Q.3** (a) Explain the basic principle of operation of induction heating and list the advantages of induction heating. **07**
(b) Draw & explain torque-speed characteristics of DC motor. **07**
- Q.4** (a) Draw & explain architecture of microprocessor 8085. Also explain function of various pins. **07**
(b) Draw and explain memory classification. **07**
- OR**
- Q.4** (a) Explain following instruction with example (i) LDA(ii) JNZ(iii) CMP(iv) LXI(v) STAX(vi) RRC (vii) LHLD **07**
(b) Explain the programming registers model and flag register in detail. **07**
- Q.5** (a) Explain Digital to analog converters. **07**
(b) Explain ladder diagram and ignitron contactors. **07**
- OR**
- Q.5** (a) Draw the block diagram of PLC and describe each block in detail. **07**
(b) Explain Analog to digital converters. **07**
