Seat No.: _____ Enrolment No._____

GUJARAT TECHNOLOGICAL UNIVERSITY

BE - SEMESTER–V EXAMINATION – WINTER 2015

Subject Code: 150203 **Date:08/12/2015**

Subject Name: Power Electronics and Control Engineering

Time: 10:30am to 1:00pm **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 & explain various methods to turn on SCR.	**07**
	(b)	Explain the construction and characteristics of the TRIAC.	**07**
Q.2	**(a)**	Explain following instructions with example. (i) STA (ii) ORA (iii) ADD (iv) LXI (v) LDAX (vi) RLC (vii) MVI	**07**
	(b)	Draw & explain torque-speed characteristics of DC motor.	**07**
		OR	
	(b)	Explain leading & trailing tube circuits.	**07**
Q.3	**(a)**	Explain speed control of DC motor using SCRs.	**07**
	(b)	Explain construction & characteristics of UJT with neat diagram.	**07**
		OR	
Q.3	**(a)**	Explain resistance welding system with necessary diagram.	**07**
	(b)	Explain V-I characteristics of 3-phase Induction motor.	**07**
Q.4	**(a)**	Explain the basic principle of operation of induction heating and list the advantages of induction heating.	**07**
	(b)	Draw the pin diagram of microprocessor 8085.	**07**
		OR	
Q.4	**(a)**	Explain the operation of dielectric heating and its high frequency power supply for dielectric heating.	**07**
	(b)	Explain the programming registers model and flag register in detail.	**07**
Q.5	**(a)**	What is Analog to digital converters? Explain successive-approximation type A/D converter in detail with its advantages.	**07**
	(b)	Explain thermocouple in brief.	**07**
		OR	
Q.5	**(a)**	Draw the block diagram of PLC and describe each block in detail.	**07**
	(b)	Draw the circuit diagram of ignitron contactor & explain its working. Where it is used?	**07**

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