GUJARAT TECHNOLOGICAL UNIVERSITY
BE - SEMESTER– V • EXAMINATION – WINTER 2016

Subject Code: 150203 **Date: 19/11/2016**

Subject Name: Power Electronics and Control Engineering

Time: 10:30AM – 01:00PM **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)**	Explain the construction and characteristics of the TRIAC.	**07**
	(b)	Explain Principles and Operation of SCR using two transistor model in detail.	**07**
Q.2	**(a)**	Define following (i)Holding current in SCR (ii) Latching current in SCR (iii) Symbol and V-I Characteristics of DIAC (iv) Stack pointer (v) Threshold voltage (vi) Strain gauge (vii) Analog and Digital signal	**07**
	(b)	Draw & explain torque-speed characteristics of DC motor.	**07**
		OR	
	(b)	Explain speed control of DC motor using SCRs.	**07**
Q.3	**(a)**	Explain the functions of following pins of 8085. (i) Address and Data Bus (ii) Control and status signals (iii) Power supply and clock frequency (iv) serial I/O ports.	**07**
	(b)	Draw and explain pin diagram of 8085.	**07**
		OR	
Q.3	**(a)**	Explain the following instructions with an example: CNZ, XCHG, ANA, LDA, RLC, JNC, HLT,	**07**
	(b)	Write a program to find the largest number in array of data using 8085 instructions.	**07**
Q.4	**(a)**	Write a short note on welding transformers.	**07**
	(b)	Explain the operation of dielectric heating and list the advantages of dielectric heating.	**07**
		OR	
Q.4	**(a)**	Explain construction and applications of thermocouples and strain gauges.	**07**
	(b)	Write short note on timers and sequential welding control.	**07**
Q.5	**(a)**	Explain the different modes of operation of thyristor with the help of its V-I characteristics.	**07**
	(b)	Draw the block diagram of PLC and describe each block in detail.	**07**
		OR	
Q.5	**(a)**	Write short note on Induction motor construction and working principle.	**07**
	(b)	Explain Digital to analog converters	**07**

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