Seat No.:	Enrolment No.

GUJARAT TECHNOLOGICAL UNIVERSITY BE – SEMESTER-VIII • EXAMINATION – SUMMER • 2014

Subject Code: 180304 Date: 27-05-2014 **Subject Name: Electronics System Design** Time: 10.30 am - 01.00 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 static & dynamic characteristics of SCR. 7 Explain two transistor analogy of SCR. 7 В Q.2 Explain class-C commutation with suitable waveform. What happen if commutation failure Α occurs in class- C. If handling current and voltage rating are more than individual rating of SCR than which В configuration of SCR are used? Explain in detail. 7 В Explain the construction & working of a Servomotor. 7 Q.3 Explain class- E resonant inverter in detail. Α В Explain series & parallel resonant inverter in detail. 7 Q.3 Explain the difference between a DC motor & Stepper motor. Also explain the advantages 7 Α and disadvantages of a stepper motor. Explain Half Step, Full Step and Micro Stepping operation of a Stepper motor 7 В Q.4 Write a short note on Solenoid & Solenoid Valves 7 Α Write a short note on UPS В 7 OR Q.4 Write a detailed note on various drive circuits used for Stepper Motors 7 A Explain Electromagnetic Compatibility & Electromagnetic Interference in detail. Also 7 В explain the basic difference between them. Q.5 Enlist and explain the different turn-on method of SCR in detail. Which one is good and A why? Enlist & Explain the different types of power Diode, explain the performance parameter of В power diode in detail. OR Enlist & Explain the control strategy of converter. explain the step-up convertor in detail Q.5 A 7 7 write a short notes on В 1. IGBT

2. Step-Down Convertor