Seat No.:	Enrolment No.

Subject code: X 70905

GUJARAT TECHNOLOGICAL UNIVERSITY PDDC - SEMESTER - VII • EXAMINATION - WINTER 2012

Date: 01/01/2013

Subject Name: Advanced Power Electronics - I 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. (a) What is the difference between multilevel and multi pulse converter? 0.1 07 **(b)** Explain five level cascaded H-bridge multilevel inverter. **07 Q.2** (a) What do you mean by switch mode power supply? Explain fly-back **07** type switch mode power supply. **(b)** Explain forward type converter for switch mode power supply. **07 (b)** Explain series resonance inverter with bi-directional switches. 07 0.3 (a) Explain basic of parallel resonance inverter. 07 **(b)** Explain class-E resonance inverter with circuit diagram. **07** 0.3 (a) Explain the phenomena of zero current switching resonance converters. 07 **(b)** Explain basics of zero voltage switching resonance converter. **07 Q.4** Which static devices are you preferred for multilevel inverter? Give (a) 07 your reasons. **(b)** Give comparison between all the multilevel topology. 07 "In cascaded H bridge multilevel inverter all switches are not utilized **Q.4** fully and not of the same voltage rating" explain this statement. **(b)** What difficulties arise with flying capacitor type of multilevel inverter? 07 **Q.5** What is the necessity of phase shifting transformer in multi-pulse (a) converter? (b) Explain the Idealized six pulse converters with resistive load. 07 (a) Explain the working and operation of BLDC motor drives. **Q.5** 07 **(b)** Explain basic principle of operation of switch reluctance motor drive. 07
