

Seat No.: _____

Enrolment No. _____

GUJARAT TECHNOLOGICAL UNIVERSITY
B E Sem-VI Examination May 2011

Subject code: 160902

Subject Name: Power Electronics-II

Date:17/05/2011

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 half bridge and full bridge topology of inverter. **07**
(b) Explain 3 phase inverter operation for 180° . **07**
- Q.2** (a) Give comparison between current source inverter and voltage source inverter. **07**
(b) What is PWM? Explain SPWM techniques. **07**
- OR**
- (b) Explain space vector pulse modulation techniques. **07**
- Q.3** (a) Explain inverter operation for 120° . **07**
(b) Explain basic principle of cyclo-converter with circuit diagram and wave form? **07**
- OR**
- Q.3** (a) Explain three phase to single phase cycloconverter. **07**
(b) Explain the basics of Matrix converter. **07**
- Q.4** (a) Give the comparison between On/Off control and phase control of A.C voltage controller. **07**
(b) Explain full wave controller with R-L load. Draw the necessary wave-form. **07**
- OR**
- Q. 4** (a) Explain slip-power recovery by Static Scherbius method for speed control of induction motor. **07**
(b) Explain application of converter in HVDC transmission. **07**
- Q.5** (a) Explain V/f control of induction motor drives? Give its merits and demerits. **07**
(b) Explain the method of rotor resistance control using static device for wound rotor motor. **07**
- OR**
- Q.5** (a) Explain the stator voltage control of induction motor drives. **07**
(b) Explain McMurray inverter with each mode of operation. Give its limitation. **07**
