

Seat No.: _____

Enrolment No. _____

GUJARAT TECHNOLOGICAL UNIVERSITY

BE - SEMESTER-VI (OLD) - EXAMINATION – SUMMER 2017

Subject Code: 160902

Date: 12/05/2017

Subject Name: Power Electronics - II

Time: 10:30 AM to 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 the working of three phase inverter for 120° conduction mode with necessary waveforms and diagram. **07**
(b) Describe single phase Mac Murray inverter with diagram and waveforms. **07**
- Q.2** (a) Explain space vector PWM method with diagram and compare it with sinusoidal PWM method. **07**
(b) Compare in detail the voltage source inverter and current source inverter. **07**
- OR**
- (b) Explain single phase full wave controller with diagram and wave forms. Derive the equation of RMS output voltage. **07**
- Q.3** (a) Explain load commutated cyclo converter with diagram and waveforms. **07**
(b) Explain operation of matrix converter with diagram. **07**
- OR**
- Q.3** (a) Explain single phase to single phase cyclo converter with diagram and waveforms. **07**
(b) Explain three phase full wave controller with Y and Δ connected loads. **07**
- Q.4** (a) Explain the selection criteria for AC drive and DC drive. **07**
(b) Describe the close loop speed control of induction motor with functional diagram. **07**
- OR**
- Q.4** (a) Give brief description on slip power recovery control and rotor resistance control for induction motor. **07**
(b) Explain with diagram application of load commutated inverter for speed control of synchronous motor. **07**
- Q.5** (a) Describe static excitation system of alternator with diagram. **07**
(b) Explain Active filter with block diagram and compare with passive filter. **07**
- OR**
- Q.5** (a) Discuss Induction heating and RF heating in detail. **07**
(b) Discuss constant flux and constant current operation of induction motor. **07**
