

GUJARAT TECHNOLOGICAL UNIVERSITY
PDDC SEMESTER V – EXAMINATION – SUMMER 2017

Subject Code: X50903**Date: 04/05/2017****Subject Name: Power Electronics-II****Time: 02.30PM to 05.00PM****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 120° conduction of three phase inverter connected with Δ connected resistive load. **07**
- (b) Discuss 1-phase parallel inverter. **07**
- Q.2** (a) Explain SVPWM technique. Discuss their advantages over other PWM techniques. **07**
- (b) How the 5th and 7th harmonics can be eliminated using selected harmonic elimination technique? **07**
- OR**
- (b) Explain hysteresis band PWM technique. Compare it with sine PWM technique. **07**
- Q.3** (a) Discuss 3-phase full wave controller with 'Y' connected R-L load. **07**
- (b) Discuss 3-phase current source inverter (CSI). Compare it with VSI. **07**
- OR**
- Q.3** (a) Explain operation of AC voltage controller with PWM control. **07**
- (b) Explain basic principle of matrix converter. **07**
- Q.4** (a) Explain load commutated cycloconverter. **07**
- (b) Discuss V/f induction motor drive in closed loop configuration. **07**
- OR**
- Q.4** (a) Explain output harmonics in cycloconverter. **07**
- (b) Explain slip power recovery control in 3-phase wound rotor IM drive. **07**
- Q.5** (a) Explain self controlled synchronous motor drive using load commutated thyristor inverter. **07**
- (b) Explain application of power electronics in FACTS devices. **07**
- OR**
- Q.5** (a) Explain self controlled synchronous motor drive using cycloconverter. **07**
- (b) Explain static excitation system of alternators. **07**
