

GUJARAT TECHNOLOGICAL UNIVERSITY**BE - SEMESTER-VI (OLD) EXAMINATION – WINTER 2018****Subject Code:160902****Date: 15/12/2018****Subject Name: Power Electronics - II****Time: 02:30 PM TO 05:00 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 with 120 degree mode of conduction with necessary waveform and circuit. **07**

(b) Explain in brief: Matrix Converter. **07**

Q.2 (a) What is PWM technique? Explain space vector PWM technique. **07**

(b) Explain single phase full wave controller with diagram and waveform. Derive RMS output voltage equation. **07**

OR

(b) Draw and explain parallel inverter in RL load with wave form. **07**

Q.3 (a) Write short note on V/F control of induction motor. **07**

(b) Explain the close loop speed control of synchronous motor drive operating on Cycloconverter. **07**

OR

Q.3 (a) Give comparison between AC drives and DC drives. **07**

(b) Explain slip power recovery control and rotor resistance control for induction motor. **07**

Q.4 (a) What is FACTS device? Explain any one in detail. **07**

(b) Compare the following. **07**
(1) VSI and CSI
(2) Cycloconverter and DC link inverter

OR

Q.4 (a) Enlist various types of HVDC systems & discuss any one in brief. **07**

(b) Discuss induction heating and RF heating in detail. **07**

Q.5 (a) Explain single phase to single phase Cycloconverter with wave form and diagram. **07**

(b) Write short notes on classification of inverter. **07**

OR

Q.5 (a) Write short note on three phase Cycloconverter. **07**

(b) Discuss on – off control based single phase AC voltage controller with necessary diagrams. **07**
