

**GUJARAT TECHNOLOGICAL UNIVERSITY****BE - SEMESTER- VI (Old) EXAMINATION – WINTER 2019****Subject Code: 160902****Date: 16/12/2019****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 single phase half bridge inverter for RL load with necessary waveforms and diagram. **07**  
(b) Describe the working of series inverter with diagram and waveforms. **07**
- Q.2** (a) Explain with diagram working of single phase auto sequential commutated current source inverter with diagram and waveforms. **07**  
(b) Compare in detail the voltage source inverter and current source inverter. **07**
- OR**
- (b) Compare various PWM techniques used for inverter. **07**
- Q.3** (a) Explain working of Matrix converter with diagram. **07**  
(b) Explain working of single phase electronic tap changer used for transformer. **07**
- OR**
- Q.3** (a) Compare in detail cyclo converter with DC link converter. **07**  
(b) Discuss operation of three phase full wave controller with Y and  $\Delta$  connected loads. **07**
- Q.4** (a) Explain constant flux and constant current operation of induction motor. **07**  
(b) Draw and explain close-loop circuits for stator voltage control of induction motor. **07**
- OR**
- Q.4** (a) Discuss about self-controlled synchronous motor drive. **07**  
(b) Explain in detail selection of drive. **07**
- Q.5** (a) Write short note on HVDC. **07**  
(b) Explain static excitation system of an alternator. **07**
- OR**
- Q.5** (a) Explain v/f control of induction motor. **07**  
(b) Write short note on Battery charger. **07**

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