

GUJARAT TECHNOLOGICAL UNIVERSITY**BE - SEMESTER-VII(NEW) EXAMINATION – SUMMER 2019****Subject Code: 2170906****Date: 10/05/2019****Subject Name: Advanced Power Electronics****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) Compare switching voltage regulator with linear voltage regulator. **03**
(b) Explain half bridge converter. **04**
(c) Discuss operation of Buck converter in continuous and discontinuous mode. **07**
- Q.2** (a) Explain boost switching regulators. **03**
(b) Explain fly back converter. **04**
(c) Discuss operation of Push pull converter type switched mode dc power supply along with necessary waveforms. **07**
- OR**
- (c) Explain zero current switching resonant converters. **07**
- Q.3** (a) Explain different types of HVDC link. **03**
(b) Give comparison of HVAC and HVDC transmission. **04**
(c) Discuss the equipments required for HVDC systems. **07**
- OR**
- Q.3** (a) What is the need of resonant converter? Give Classification of resonant converters **03**
(b) Give comparison between ZCS and ZVS. **04**
(c) Explain zero voltage switching resonant converter. **07**
- Q.4** (a) What is the importance of reactive power compensation? **03**
(b) Give comparison of SVC and STATCOM. **04**
(c) Explain the working principle of FC-TCR. **07**
- OR**
- Q.4** (a) State the advantages of FACTS devices. **03**
(b) State advantages and limitation of SSSC. **04**
(c) Explain the working principle of TSC-TCR. **07**
- Q.5** (a) What is the difference between isolated and non-isolated dc power supply. **03**
(b) Discuss the principle of series compensation and state various methods for series compensation. **04**
(c) Explain operating principal of STATCOM. **07**
- OR**
- Q.5** (a) What is the application of Multipulse Converters? **03**
(b) Explain operation of diode clamped multilevel inverter. **04**
(c) Draw the transformer connections for 18 pulse converter. Explain Y-Z2 transformer connection used for multipulse converter. **07**
