

GUJARAT TECHNOLOGICAL UNIVERSITY**BE - SEMESTER-VIII (OLD) EXAMINATION – WINTER 2018****Subject Code: 180907****Date: 29/11/2018****Subject Name: Advanced 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) State the types of HVDC system and explain each in brief **07**
(b) Discuss the merits of HVDC transmission line over HVAC transmission line. **07**
- Q.2** (a) Explain the 3- ϕ six pulse controlled converter with necessary waveforms and derivation. **07**
(b) Explain the equivalent circuit diagram of HVDC system with derivation. **07**
OR
(b) Explain the operation of HVDC-VSC. **07**
- Q.3** (a) Explain the effect of source impedance on the working of six pulse controlled converter with necessary waveforms and derivation. **07**
(b) Explain Inverter Extinction Angle control. **07**
OR
- Q.3** (a) Explain the necessity of compounding both converter & inverter stations with constant current control. **07**
(b) Discuss power reversal characteristic of HVDC link. **07**
- Q.4** (a) Discuss the advantages of FACTS in brief. **07**
(b) Explain working of TCR with static characteristics. **07**
OR
- Q.4** (a) Compare the technical performance of Different SVC's **07**
(b) Explain midpoint compensation with necessary derivation. **07**
- Q.5** (a) Explain mechanical switched capacitor thyristor controlled reactor. **07**
(b) Explain thyristor controlled transformer compensator. **07**
OR
- Q.5** (a) Explain the working of synchronous condenser. **07**
(b) Explain the working of UPFC. **07**
