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| Seat No. |  |
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**T. E. (Electronic & Telecommunication Engineering) (Part - I)**  
**(Semester - V) Examination, May- 2017**

**POWER ELECTRONICS (Revised)**

**Sub. Code : 66317**

**Day and Date : Thursday, 18 - 05 - 2017**

**Total Marks : 100**

**Time : 10.00 a.m. to 01.00 p.m.**

- Instructions :**
- 1) All questions are compulsory.
  - 2) Figures to the right indicate full marks.
  - 3) Assume suitable data if necessary.

**SECTION - I**

**Q1) Solve any two :**

**[16]**

- a) Draw and explain construction & characteristics of IGBT.
- b) Draw and explain operating modes of SCR.
- c) Explain TRIAC as fan speed regulator with circuit diagram and waveforms.

**Q2) Solve any two :**

**[16]**

- a) Explain with circuit diagram & waveform Class - C commutation method.
- b) With circuit diagram explain UJT Firing circuit. Explain why line synchronization is takes place.
- c) With circuit diagram & waveforms explain three phase fully controlled converter with resistive load.

**Q3) Write notes on any three.**

**[18]**

- a) Ratings of power devices.
- b) Static & dynamic equalizing circuit.
- c) Class - B commutation of SCR
- d) SCR protection circuits

**P.T.O.**

**SECTION - II****Q4)** Solve any two :**[16]**

- a) Explain principle and operation of three phase inverter.
- b) Mention harmonic elimination methods in inverter. Explain PWM technique for harmonics reduction in inverter with waveform.
- c) Explain basic principle of D.C.Chopper. How current limit control technique works.

**Q5)** Solve any two :**[16]**

- a) Mention output voltage control techniques in inverter. Explain any one in detail.
- b) Explain SMPS and its applications.
- c) Discuss principle of operation of Induction heating & its applications.

**Q6)** Write notes on any three.**[18]**

- a) Static circuit breakers.
- b) Soft start method.
- c) Block diagram of PLC.
- d) Jones chopper.

