

Seat No.	
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**T.E. (Electronics & Telecom.) (Semester -VI) (Pre-Revised)
(Old) Examination, April - 2016**

INDUSTRIAL AND POWER ELECTRONICS

Sub. Code: 45695

Day and Date :Saturday, 23 - 04 - 2016

Total Marks : 100

Time :3.00 p.m. to 6.00 p.m.

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

SECTION-I

Q1) Solve any two: [16]

- a) Draw and explain characteristics of power MOSFET and power transistors.
- b) Explain dv/dt and di/dt protection circuit for SCR.
- c) Draw and explain construction & characteristics of GTO.

Q2) Solve any two: [16]

- a) Explain operation of PVT as a relaxation oscillator and explain PVT triggering circuits for SCR.
- b) Explain single phase full controlled converter with R.L load with neat circuit diagram and waveforms.
- c) Explain SCR turn off methods with waveforms
 - i) Class - A method
 - ii) Class - C method

P.T.O.

Q3) Solve any two:

- a) Derive expression for average and Rms voltage of half controlled converter with R load.
- b) Draw & Explain three phase full wave controlled converter with resistive load with waveforms.
- c) Explain with neat circuit diagram static circuit breakers & over voltage protectors for SCR.

SECTION-II

Q4) Solve any two:

[16]

- a) Explain with circuit diagram and waveforms operation of three phase bridge inverter.
- b) Explain how chopper can be used as d.c. motor speed controller.
- c) What are the harmonic reduction techniques for inverter output voltage? Explain any one.

Q5) Solve any two:

[16]

- a) Discuss in detail programmable logic controller.
- b) With the help of block schematic explain operation of UPS.
- c) Explain speed control of Induction motor using inverter.

Q6) Solve any three:

[18]

- a) SCADA system.
- b) SMPS.
- c) PLC programming.
- d) Discrete position sensors.
- e) Ultrasonic generators.

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