

Seat No.	
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T.E. (E & Tc) Part-III (Semester- VI)
Examination, December - 2015
INDUSTRIAL & POWER ELECTRONICS
Sub. Code : 45695

Day and Date : Friday, 04-12-2015.

Total Marks : 100

Time : 02.30 pm. to 05. 30 p.m.

- Instructions :
- 1) All questions are compulsory.
 - 2) Figures to right indicate full marks.
 - 3) Assume suitable data if necessary.
 - 4) Use of Non- programmable calculator is allowed.

SECTION - 1

Q1) Solve any two:

[16]

- a) Draw and explain Forced commutation circuits of SCR.
- b) Explain over voltage & over current protection circuits for SCR.
- c) Draw & explain working of Power MOSFET and Power transistors.

Q2) Solve any two;

[16]

- a) Explain in detail single phase half wave controlled converter with RL load with neat circuit diagram and waveforms.
- b) Explain with neat circuit diagram Zero voltage switch & over voltage protectors for SCR.
- c) With neat circuit diagram & waveforms explain three phase full wave controlled rectifier for resistive load.

P.T.O.

Q3) Write short notes (any three):

[18]

- a) Integral cycle triggering.
- b) Series & parallel connections of SCRs.
- c) Firing circuit for Triac using Diac.
- d) Use of freewheeling diode in controlled rectifiers.

SECTION - II

Q4) Solve any Two:

[16]

- a) Discuss the principle of operation of three phase bridge inverter.
- b) What are Harmonics reduction techniques for Inverter output voltage. Explain any one.
- c) Explain speed control of DC motor using Chopper.

Q5) Solve any Two;

[16]

- a) Draw and Explain Speed control of Induction motor using slip power control.
- b) Discuss Kramer system of three phase AC motor control.
- c) Draw and Explain PLC architecture.

Q6) Solve any Two:

[18]

- a) Compare between different types of UPS. Also Explain on line UPS with neat Sketch.
- b) Draw and Explain basic switched mode power (SPMS) with its advantages and disadvantages.
- c) Write a short on modern three phase drive.

