

Total No. of Questions :6]

P30

SEAT No. :

[Total No. of Pages :2

Oct./TE/ Insem. - 144

T.E. (Electrical)

**POWERELECTRONICS
(2015 Course) (Semester - I)**

Time : 1 Hour]

/Max. Marks :30

Instructions to the candidates:

- 1) *Attempt any one question from Q.1 or Q.2, Q.3 or Q.4, Q.5 or Q.6.*
- 2) *Neat diagrams must be drawn wherever necessary.*
- 3) *Assume suitable data, if necessary.*

Q1) a) Draw neat diagram explain class C Commutation of thyristor. **[5]**

b) Explain with neat circuit diagram operation of R-C triggering circuit of Thyristor. **[5]**

OR

Q2) a) Describe the different modes of operation of SCR with the help of V - I characteristic. **[5]**

b) With construction diagram explain working of GTO. **[5]**

Q3) a) List different voltage control techniques of Chopper. Elaborate Time Ratio Control (TRC) method. **[5]**

b) Write short note on class E Chopper. **[5]**

OR

Q4) a) Draw and explain output and transfer characteristics of MOSFET. **[5]**

b) Write a short note on necessity of input filter. **[5]**

P.T.O.

Q5) a) With neat output voltage waveforms explain rectification and inversion mode of operation of single phase fully controlled converter with RL load. **[5]**

b) Describe working of single phase semi converter with RL load. Draw waveforms of load voltage, load current. **[5]**

OR

Q6) a) Describe working of single phase circulating type of dual converter with output voltage waveform. **[5]**

b) Derive expression for average output voltage and rms output voltage of a single phase fully controlled converter with RL load (Assume continuous conduction) **[5]**

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