

Total No. of Questions : 6]

SEAT No. :

P53

Oct./TE/Insem.-171

[Total No. of Pages : 2

T.E. (Electronics)

POWER ELECTRONICS AND APPLICATIONS

(2015 Course) (Semester - I) (304201)

Time : 1 Hour]

[Max. Marks : 30

Instructions to the candidates:

- 1) *Answer Q1 or Q2, Q3 or Q4, Q5 or Q6.*
- 2) *Neat diagrams must be drawn wherever necessary.*
- 3) *Assume suitable data if necessary.*

Q1) a) Explain Microprocessor based control circuit for Power electronics Applications. [6]

b) Discuss Isolation of Gate and Base drive using Pulse transformer. [4]

OR

Q2) a) Discuss two transistor analogy of SCR and derive Anode current equation. [6]

b) Compare IGBT and MOSFET. [4]

Q3) a) Explain Synchronized UJT triggering for SCR with circuit diagram and waveform. [6]

b) Write a short note on: [4]

i) Selenium diode

ii) MOV

OR

P.T.O.

Q4) a) Draw and explain construction and static characteristics of IGBT in detail. [6]

b) Explain operation and need of snubber circuit for SCR. [4]

Q5) a) Explain Single phase fully controlled bridge Rectifier R-L load for $\alpha = 135$ degree with circuit diagram and load voltage waveform. [6]

b) Explain any four Applications of controlled rectifiers. [4]

OR

Q6) a) Explain protection of power devices for voltage and current transients. [6]

b) Explain the use of semiconductor fuses for over current protection. [4]

