Seat No.	

SJ – 786

Total No. of Pages : 2

T.E. (Electronics & Telecommunication) (Part - I) (Semester - V) Examination, November - 2016

POWER ELECTRONICS (Revised)

Sub. Code : 66317

Day and Date : Thursday, 24 - 11 - 2016 **Total Marks : 100**

Time : 02.30 p.m. to 05.30 p.m.

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

SECTION - I

Q1) Solve any two : **[16]**

a) Draw and explain construction & V-I characteristics of SCR.

b) Explain dv/dt and di/dt protection circuits for SCR.

c) Explain necessity and ratings of SCR in series & parallel connections of SCR with circuit diagram.

Q2) Solve any two : **[16]**

a) With the help of circuit diagram & waveform explain single phase fullwave controlled rectifier with inductive load.

b) Mention different turn on method of SCR. Explain PVT triggering circuit with waveforms.

c) The single phase half-wave controlled rectifier is connected to 230V, 50Hz supply. If delay angle is 45° find out.

i) V_{dc} ii) V_{rms}

iii) Harmonic factor iv) Displacement factor

P.T.O.

Q3) Write notes on any three. [18]

a) Power ratings of SCR.

b) Class-A commutation of SCR.

c) GTO

d) Effect of free wheeling diode

SECTION - II

Q4) Solve any two : [16]

a) Explain with help of circuit diagram & waveforms single phase bridge inverter.

b) With the help of circuit diagram & waveforms, explain morgan's chopper.

c) Explain output voltage control techniques of inverter.

Q5) Solve any two : [16]

a) Explain principle of operation of dielectric heating and its applications.

b) Explain with circuit diagram & waveforms three phase bridge inverter.

c) Explain with circuit diagram speed control of DC series motor using chopper.

Q6) Writes notes on any three : [18]

a) PLC-Architecture & Applications

b) SMPS

c) Static circuit breakers

d) SCADA-Architecture & Applications

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