Seat No.	

SE -463

Total No. of Pages : 2

T.E. (Electronics & Telecomm. Engg.) (Part - III) (Semester -V) Examination, November - 2018
POWER ELECTRONICS (Revised)
Sub. Code : 66317

Day and Date : Wednesday, 28- 11 - 2018 **Total Marks : 100**

Time : 10.00 a.m. to 01.00 p.m.

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

SECTION-I

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

a) Explain construction, working and V-I characteristics of SCR.

b) Explain with neat diagram dv/dt and di/dt protection circuit for SCR.

c) Explain different ratings of power devices.

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

a) Explain operation of UJT as a relaxation oscillator with characteristics and explain UJT triggering circuits for SCR.

b) Draw the circuit diagram of 3-ϕ full wave controlled rectifier with R-load? Explain operation of full wave controlled rectifier with waveforms.

c) A single phase full-wave controlled rectifier with R-Load is connected to 230V, 50Hz supply. If delay angle is 90° find out. (R = 20Ω)

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

iii) Harmonic factor iv) I_{dc}

Q3) Write note of any three. **[18]**

a) Class - C commutation of SCR.

b) Series & parallel connection of SCRs.

c) PUT as relaxation oscillator.

d) Effect of free-wheeling diode.

e) IGBT

P.T.O.

SECTION - II

Q4) Solve any two [16]

a) Explain with help of circuit diagram and waveforms three phase inverter.

b) Explain with diagram speed control of D.C. motor uisng chopper.

c) Explain output voltage control techniques in inverter.

Q5) Solve any two [16]

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

b) Draw and explain block schematic of PLC.

c) With suitable circuit diagram and waveforms explain the working of step down D.C. chopper.

Q6) Solve any three [18]

a) SMPS

b) Harmonic elimination technique

c) Jones chopper

d) Static circuit breaker

e) PLC-Programming

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