S.B. Roll No……

POWER ELECTRONICS

4th Exam/ECE/ETV/ECE-II/6128/2961/Nov'18

Duration: 3Hrs. **M.Marks:75**

SECTION-A

Q1. Do as directed. **15x1=15**

a. An SCR contain _____ PN junctions.
b. An UJT is a _____ device.
c. A TRIAC can conduct in _____ directions.
d. The value of firing angle cannot be more than _____.
e. Full wave rectifier allows power flow in both directions (T/F).
f. GTO can be turned off by _____gate signal.
g. Power rating of UPS is given in _____.
h. GTO stands for _____.
i. Three Types of UPS are _____, _____and _____.
j. An inverter converts_____.
k. In normal operation, anode of SCR is kept _____ w. r. t cathode.
l. Dual converter can be operated in _____ quadrants.
m. Commutation can be classified as _____ and forced commutation.
n. A UJT after reaching the valley point goes to its saturation state. (T/F).
o. The series inverters are also known as_____ commutated inverters.

SECTION-B

Q2. Attempt any five questions. **5x6=30**

i. What are the different applications of UPS system?
ii. Explain working principle of inverter circuit with the help of block diagram.
iii. Explain any three methods of SCR triggering.
iv. What do you mean by heat sink? What is the necessity of heat sink?
v. Write difference between ON line And OFF line UPS system
vi. Draw and explain block diagram of dual converter.
vii. How SCR work as Switch?
viii. Write advantages and disadvantages of HVDC transmission system.

SECTION-C

Q3. Attempt any three questions. **3x10=30**

a. Explain the operation of UJT with the help of characteristics.
b. Write short note on the following. **(any two)**
    i. Gate turn off thyristor (GTO).
    ii. Cyclo converter.
    iii. Chopper.
c. Explain construction and working of SCR & draw its V-I characteristics. List some applications of SCR.
d. Describe the working of single phase full wave centre tap rectifier with the help of wave forms and circuit diagram.
e. Explain the working principle of parallel inverter with the help of circuit diagram.