S.B. Roll No……

INDUSTRIAL ELECTRONICS AND CONTROL OF DRIVES
5th Exam/Elect/EEE/2528/Nov'18

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

SECTION-A

Q1. Fill in the blanks. **15x1=15**

a. The numbers of PN junctions in a UJT are _____.
b. Dual converters can be used to achieve _____ braking.
c. The main application of cyclo converter circuit is found in _____ traction.
d. For wide speed control _____ drives are used.
e. In a thyristor holding current is less than_____.
f. SCR stands for _____.
g. Maintenance cost of electric control system is ____ in comparison to conventional systems.
h. The efficiency of full wave rectifier is always _____ than the efficiency of half wave rectifier.
i. The three terminals of SCR are known as _____.
j. A device which converts dc power into ac power at desired voltage and frequency is called ____.
k. A cyclo converter converts input power at one frequency to _____.
l. A diac is used to trigger _____.
m. SCRs are connected in parallel to enhance _____.
n. In class E chopper can operate in _____ quadrants.
o. The power rating of a UPS is given in _____.

SECTION-B

Q2. Attempt any six questions. **6x5=30**

i. Explain the working of single phase full wave controlled rectifier using a centre tapped transformer feeding RL load.
ii. What is commutation? Discuss different types of commutation.
iii. Draw and explain V-I characteristics of an SCR.
iv. What do you understand by back up time of a UPS? What are the factors which can increase back up time?
v. Differentiate between steps up and step down chopper.
vi. Why a dual converter is called so?
vii. Explain briefly the speed control of a dc series motor using chopper.
viii. What are the main advantages of ac drives over dc drives?

SECTION-C

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

a. What are the different methods of triggering SCR?
b. What is cyclo converter? Explain with the help of a circuit diagram a single phase cyclo converter using centre tapped transformer.
c. Explain the advantages and disadvantages of HVDC transmission system
d. i) Why a heat sink is required with a thyristor?
   ii) Why a freewheeling diode is called so?
e. i) Draw and explain the working of a full wave single phase half controlled bridge rectifier.
   ii) Write short notes on care and maintenance of lead acid battery.