POWER ELECTRONICS → (5th Sem) (ETC)

Question Bank

chapter-1

short questions (2 marks)

1. Define latching current & holding current.
2. Write the full form of GTO & IGBT.
3. Define firing angle (α), conduction angle (β) & extinction angle (γ).
4. Differentiate betn DIAC & TRIAC.
5. Differentiate betn Transistor & SCR.
6. Differentiate betn Diode & SCR.
7. Write the application of power electronics.
8. Define Snubber ckt.
9. Differentiate betn Natural Commutation & forced Commutation.
10. Define Delay time & rise time.
11. Define Spread time.
12. Define firing.

~~5 marks~~ Long question

1. Describe briefly different Turn ON Methods of SCR.
2. Explain the operation & construction of IGBT & its application.
3. Explain the construction, operation of SCR & draw its V-I characteristics curve.
4. With neat ckt diagram & waveform explain about RC-firing of SCR.
5. With neat ckt diagram & waveform explain about R-firing of SCR.
6. Explain the operation & construction of TRIAC & its application
7. Explain the operation & construction of DIAC & its application
8. Explain synchronous triggering / Ramp triggering with neat ckt diagram.
9. Explain Gate characteristics of SCR.

(10) ~~Explain~~ with neat ckt diagram, explain the load Commutation.

(11) With neat ckt diagram explain the Resonant pulse Commutation.

(12) Explain the over voltage & over current protection of SCR.

(13) Explain Snubber ckt.

(14) ~~Explain the constrac~~

~~chapter-2~~

Chapter-2.

Short question

1. Write down the need of a freewheeling diode in a ckt.
2. Define chopper.
3. Define duty cycle.
4. Define TRC.
5. Define dual Converter.
6. Define Controlled rectifier.
7. Write the application of Controlled rectifier.

Long question

1. With neat ckt diagram explain the working of step-down chopper.
2. With neat ckt diagram explain the working of step-up chopper.
3. Explain with ckt diagram & waveform of the operation of single-phase half wave Controlled Converter with resistive load. ~~/R-L load~~.
4. Explain with ckt diagram & waveform of the operation of single phase half wave Controlled Converter with R-L load.
5. Explain with neat ckt diagram & waveform of the operation of single phase fully Controlled Converter with resistive load. /R-L load.

6. Explain the different chopper configuration.

Chapter-3

Short question & long question

1. Define inverter & write any two applications of inverter.
2. Differentiate betn Series inverter & parallel inverter.
3. Define cycloconverter & write any two application of cycloconverter.
4. Explain the operation of single phase half bridge voltage source inverter with resistive load.
5. Draw the diagram of a single phase to single phase step down cyclo-converter (mid-point) with pure Resistive load & explain & draw its waveform
6. Explain the working of single-phase step-up cycloconverter.
7. Explain the working of single phase step-down cycloconverter.

Chapter-4

1. Define UPS & explain the working of on-line & off-line UPS system.
2. Define SMPS & mention any two of its advantages over voltage regulator.
3. Draw the block diagram of SMPS & explain its operation.
4. Explain the battery charger ckt using SCR with the help of a diagram.
5. Explain the speed control of dc shunt motor using converter.

Chapter-5

1. Draw the symbol for NO, NC & Output coil.
2. Define PLC & list down any two application of PLC.
3. Explain different parts of PLC by drawing the block diagram & also explain the purpose of each part of PLC.
4. Draw the ladder diagram of AND, OR, NAND, NOR & EXOR gates.
5. Define SCADA system.
6. Explain Timers i) TON ii) T. OFF iii) Retentive timer in PLC.
7. Explain Counter i) CTU ii) CTD in PLC.
8. Write two advantage of PLC.
9. Draw the ladder diagram of i) DOL starter & star-Delta starter, ii) Stair-case lighting iii) Traffic light control iv) Temperature Controller.