

- Q.26 Write any five differences between online UPS and OFF line UPS.
  - Q.27 Describe the working of class-D Chopper.
  - Q.28 List five advantages of SMPS over conventional power supply
  - Q.29 Define commutation. Explain natural commutation.
  - Q.30 Explain any two methods of triggering of an SCR.
  - Q.31 Explain the working of step down chopper with the help of circuit diagram.
  - Q.32 Define cycloconverter. Write any two applications of cycloconverters.
  - Q.33 Explain the two transistor analogy of SCR.
  - Q.34 What do you mean by an Electric drive ? Write any three differences between AC Drives & DC Drives
  - Q.35 List out any five instructions for maintenance and care of Lead Acid batteries.

## **SECTION-D**

**Note:** Long answer type questions. Attempt any two questions out of three questions. (2x10=20)

- Q.36 Explain the construction, working and V-I characteristics of SCR with suitable diagram.

Q.37 Explain the working of current source series inverter with the help of circuit diagram. Write three applications of Inverters.

Q.38 Explain the slip power recovery scheme of an induction motor with the help of neat diagram.

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# **5th Sem./ Electrical Engg. Power Station Engg., Elect & Elty Engg**

**Subject:- Industrial Electronics and Control of drives**

Time : 3 Hrs.

M.M. : 100

## **SECTION-A**

**Note:** Multiple choice questions. All questions are compulsory (10x1=10)

- Q.1 Which terminal does not belong to the SCR ?

  - a) Anode
  - b) Gate
  - c) Base
  - d) Cathode

Q.2 The value of anode current required to maintain the conduction of an SCR even though the gate signal is removed is called as

  - a) Holding current
  - b) Latching current
  - c) Switching current
  - d) Peak anode current

Q.3 The thyristor turn-off requires that the anode current

  - a) Falls below the holding current
  - b) Falls below the latching current
  - c) Rises above the holding current
  - d) Rises above the latching current

Q.4 Choppers converter

  - a) AC to DC
  - b) DC to AC
  - c) DC to DC
  - d) AC to AC

Q.5 A Cyclo converter is a \_\_\_\_\_

- a) One stage power converter
- b) One stage voltage converter
- c) One stage frequency converter
- d) None of the mentioned

Q.6 Among the following, the most suitable method to turn on the SCR device is the

- a) Gate triggering method
- b) Dv/Dt triggering method
- c) Forward voltage triggering method
- d) Temperature triggering method

Q.7 SCRs are connected in parallel to fulfill the \_\_\_\_\_ demand.

- a) High voltage      b) High current
- c) Size                d) Efficiency

Q.8 A step down choppers can be used in

- a) Electric traction    b) Electric Vehicles
- c) Machine tools      d) All of these

Q.9 SPMS are based on the \_\_\_\_\_ principle.

- a) Phase control      b) Integral Control
- c) Chopper             d) MOSFET

Q.10 Dual converters provide

- a) Two Quadrant operation
- b) Three Quadrant operation
- c) four Quadrant operation
- d) None of the mentioned

## SECTION-B

**Note:** Objective type questions. All questions are compulsory. (10x1=10)

Q.11 Darw symbol of TRIAC

Q.12 Expand UJT.

Q.13 In which quadrant Class D chopper operates?

Q.14 The heart of inverter is the \_\_\_\_\_

Q.15 Define the term SCR.

Q.16 On-line UPS System is \_\_\_\_\_ reliable than Off -Line UPS.

Q.17 A Dual Converter consists of two fully controlled converters connected in \_\_\_\_\_

Q.18 A Cyclo-converter is an \_\_\_\_\_ power converter. (AC/DC)

Q.19 Field control method is used in DC motors to get the speeds \_\_\_\_\_ Normal speed

Q.20 Single Phase DC drives converts AC signal in to DC signal (True/False)

## SECTION-C

**Note:** Short answer type questions. Attempt any twelve questions out of fifteen questions. (12x5=60)

Q.21 Draw and explain V-I characteristics of UJT.

Q.22 Draw and Explain block diagram of dual converter.

Q.23 Discuss the working of single phase half wave controlled rectifier with resistive load.

Q.24 Explain the single phase dual Converter.

Q.25 Describe the battery charger used in UPS.