

- Q.26 Explain the basic construction of UJT with a diagram.
 - Q.27 Define construction and applications of SCR with diagrams.
 - Q.28 Explain any five methods of triggering SCR.
 - Q.29 Write a short note on SMPS.
 - Q.30 Differentiate between Step-up and step-down chopper.
 - Q.31 How can the speed of a DC motor be controlled using a chopper?
 - Q.32 Explain about constant V/f operation.
 - Q.33 What are the main disadvantages of cycloconverters?
 - Q.34 Compare two modes of duel converter.
 - Q.35 Write a short note on "stabilizers".

SECTION-D

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

- Q.36 Draw and Explain V-I Characteristics of SCR.

Q.37 Explain the working and diagram of

 - Single phase half wave controlled rectifier with resistive load.
 - Single phase half wave controlled rectifier with R-L load with load free wheeling diode.

Q.38 Explain the working of Current source inverter with a diagram. Give applications to CSI.

No. of Printed Pages : 4 120953/030953/105853
Roll No.

**5th Sem / Elect, Power Station Engg., Elect & Eltx Engg.
Subject:- Industrial Electronics and Control of Drives**

Time : 3 Hrs. M.M. : 100

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SECTION-A

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

- Q.1 SCR is a _____ layer and _____ terminal device.

a) 3,3 b) 4,4

c) 4,3 d) 3,4

Q.2 A 3 phase full wave fully controlled converter is a _____ pulse converter.

a) 3 b) 6

c) 12 d) 2

Q.3 Class E-Chopper operates in

a) First quadrant

b) Second quadrant

c) All four quadrants

d) Both first, and second quadrant

Q.4 Field control, method is used in d.c motors to get

a) speed above normal speed

b) speed below normal speed

c) Both a and b

d) None of the above

- Q.5 ADIAC has _____ semiconductor layers.
 a) Four b) Two
 c) Three d) None of the above
- Q.6 In rectifiers, load current flow is
 a) Unidirectional b) Bidirectional
 c) Non directional d) Either A or B
- Q.7 _____ can be used as a dc static switch
 a) GTO
 b) Transistor
 c) Both GTO and Transistor
 d) TRIAC
- Q.8 SMPS are based on the _____ principle.
 a) Phase control b) Integral control
 c) Chopper d) MOSFET
- Q.9 AN inverter converts
 a) dc into variable dc
 b) ac into dc
 c) dc into ac
 d) ac into ac with different frequency
- Q.10 The duty cycle of a chopper is given by
 a) $\frac{T_{on}}{T_{off}}$ b) $\frac{T_{off}}{T_{on}}$
 c) $\frac{T_{off}}{T_{on} + T_{off}}$ d) $\frac{T_{on}}{T_{on} + T_{off}}$

SECTION-B

- Note:** Objective type questions. All questions are compulsory. (10x1=10)
- Q.11 Class-D chopper operates in the first and second quadrant. (True/False)
- Q.12 The full form of UPS is _____.
- Q.13 What is Firing angle?
- Q.14 A current source inverter has a large _____ in series with the source.
- Q.15 What is a cycloconverter?
- Q.16 A rectifier converter _____ to _____.
- Q.17 Define inverter.
- Q.18 Expand UJT.
- Q.19 Write any two applications of TRIAC.
- Q.20 SCR is a _____ (unidirectional / bidirectional) device.

SECTION-C

- Note:** Short answer type questions. Attempt any twelve questions out of fifteen questions. (12x5=60)
- Q.21 Write any five instructions for maintenance and care of lead acid batteries.
- Q.22 Explain the controlling techniques of the chopper.
- Q.23 Give merits and demerits of VSI and CSI?
- Q.24 Explain different types of choppers according to quadrants.
- Q.25 Explain turn ON and Turn OFF of the SCR with Diagram.