

Sem-3 Automation & Robotics
Sub : Drives and Control Systems

Time : 3 Hrs.

M.M. : 60

SECTION-A

Note: Multiple Choice Questions. All Questions are compulsory. (6x1=6)

- Q.1 A UJT is a
- a) Current controlled device
 - b) Voltage controlled device
 - c) Relaxation oscillator
 - d) None of the above
- Q.2 A DIAC is used to
- a) Commutate a TRIAC
 - b) Trigger a TRIAC
 - c) To protect a TRIAC
 - d) None of the above
- Q.3 Which of these is not a Chopper type?
- a) Class A
 - b) Class B
 - c) Class AB
 - d) Class D
- Q.4 An inverter converts
- a) DC into variable DC
 - b) AC into DC

- c) DC into AC
 - d) AC into AC of different frequency
- Q.5 Armature control method is used in DC Motors to get
- a) Constant speed
 - b) Speed above normal speed
 - c) Speed below normal speed
 - d) Both B & C
- Q.6 UPS stands for
- a) Uninterruptible power supply
 - b) Unwanted power supply
 - c) Unused power supply
 - d) Uninstall power supply

Section-B

Note: Objective/Completion type questions. All questions are compulsory. (6x1=6)

- Q.7 An SCR has _____ junctions.
- Q.8 Define Holding Current.
- Q.9 Uncontrolled Rectifiers contain thyristors in circuits. (True/False)
- Q.10 Series Inverter uses _____ type of Commutation.
- Q.11 What components are used to build an Electric Drive?
- Q.12 In On-line UPS, the inverter is _____ all the time.

Section-C

Note: Short answer type Question. Attempt any Eight questions out of Ten Questions. (8x4=32)

- Q.13 Explain the working of DIAC.
- Q.14 What is Commutation? Explain any one method of Commutation.
- Q.15 Explain the working of Single Phase Half Wave Controlled Rectifier with Resistive Load.
- Q.16 What is the need of a Free Wheeling Diode?
- Q.17 Explain the working principle of Series Inverter.
- Q.18 What are the applications of Dual Converter?
- Q.19 Explain the working of DC Chopper drive in Regenerative Braking Mode.
- Q.20 What are the advantages and disadvantages of AC drivers?
- Q.21 Explain on-line UPS with the help of diagram.
- Q.22 Write a short note on SMPS.

Section-D

Note: Long answer questions. Attempt any Two question out of Three Questions. (2x8=16)

- Q.23 Explain the construction and working of SCR.
- Q.24 What is Chopper? Explain types of Choppers in details.
- Q.25 Explain the working principle of Single Phase Full Wave Converter Drive with the help of suitable diagram.