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Roll No.

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5th Sem : Eltx, IC Mechatromincs, GE

Subject:- Power Electronics

Time : 3Hrs.

M.M. : 100

SECTION-A

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

- Q.1 The most commonly used method for firing a SCR is the
a) Radiation triggering b) Gate triggering
c) Voltage triggering d) Thermal triggering
- Q.2 The value of Holding Current of SCR is
a) Equal to one fourth of the value of its latching current
b) Is slightly less than the value of its latching current
c) Is slightly more than value of its latching current
d) Equal to the value of its latching current
- Q.3 A DIAC is used to
a) Commutate a TRIAC
b) Trigger a TRIAC
c) To protect a TRIAC
d) None of the above
- Q.4 A Single Phase Full Wave Fully Controlled Bridge uses

- a) 4 SCRs b) 6 SCRs
c) 2 SCRs d) 8 SCRs

Q.5 Which of these is not a chopper type ?

- a) Class A b) Class B
c) Class AB d) Class D

Q.6 A rectifier converts

- a) Dc into variable DC
b) AC to DC
c) DC into AC
d) AC into AC of different frequency

Q.7 A class C chopper operate in

- a) 1st and 2nd quadrant b) 2nd and 3rd quadrant
c) 1st and 4th quadrant d) All the four quadrant

Q.8 A Cycloconverter is

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

Q.9 Field control method is used in DC Motors to get

- a) Speed above normal speed
b) Speed below normal speed
c) Both (a) and (b)
d) None of the above

Q.10 UPS stands for

- a) Uninterruptible power supply
b) Unwanted power supply
c) Unused power supply
d) Uninstall power supply

SECTION-B

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

- Q.11 An SCR has _____ junctions.
- Q.12 Define Latching current.
- Q.13 Draw the symbol of SCR.
- Q.14 Define commutation
- Q.15 The Uncontrolled Rectifiers contain Thyristors in circuits. (True/False)
- Q.16 A Cycloconverter, consists of _____ and _____ group of Thyristors
- Q.17 In a Dual Converter, one converter operates as _____ and other as _____
- Q.18 Type A Chopper is used for obtaining which type of mode?
- Q.19 What components are used to build an Electric Drive?
- Q.20 HVDC Transmission Lines stands for _____

SECTION-C

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

- Q.21 Explain the V-I characteristics of DIAC.
- Q.22 Explain the working of UJT as Relaxation Oscillator.
- Q.23 What is Commutation? Explain any one method of Commutation.
- Q.24 Why a Heat Sink is required for a Thyristor?
- Q.25 Explain the working of Single Phase Half Wave Controlled Rectifier with Resistive Load.

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- Q.26 What are the advantage of free wheeling Diode?
- Q.27 What is Chopper? Explain the working of Step down chopper.
- Q.28 Differentiate between Class A and Class B Chopper
- Q.29 What are the advantages and disadvantages of Cycloconverter?
- Q.30 What is an Inverter? Explain the working of Series Inverter.
- Q.31 Explain the working of DC Chopper drive in Regenerative Braking Mode.
- Q.32 What are the disadvantages of DC Drives?
- Q.33 Explain working principle of HVDC Transmission lines.
- Q.34 Explain On-line ups with the help of diagram.
- Q.35 Write a short note on MOSFET.

SECTION-D

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

- Q.36 Explain the construction and working of SCR.
- Q.37 Draw and explain the working of Dual converter. Also write its applications.
- Q.38 Explain the working principle of Single Phase Full Wave Converter Drive with the help of Suitable diagram.

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