No. of Printed Pages : 4 181043/171043
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4th Sem. / Eltx.
Sub : Power Electronics

Time : 3 Hrs. M.M. : 100

SECTION-A

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

Q.1 The latching current is _____than the holding current. (CO2)

a) Lower b) Higher
c) Same as d) Negative of

Q.2 The minimum value of anode current below which it must fall to completely turn-off the device is called as the (CO2)

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

Q.3 SPMS are based on the _____principle. (CO6)

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

Q.4 A TRIAC is a _____Switch. (CO5)

a) Bidirectional b) Unidirectional
c) Mechanical d) None of the above

Q5. A thyristor (SCR) is a (CO1)

a) P-N-P device b) N-P-N Device
c) P-N-P-N device d) P-N device

Q.6 In practice the output from the rectifier has (CO4)

a) AC component only b) DC component only
c) AC + DC component d) None of the mentioned

Q.7 An SCR is a (CO1)

a) four layer, four junction device
b) four layer, three junction device
c) four layer, two junction device
d) three layer, single junction device

Q.8 Choppers convertes (CO7)

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

Q.9 SMPS is used for

a) Obtaining controlled ac power supply
b) Obtaining controlled dc power supply
c) Storage of dc power
d) Switch from one source to another

Q.10 A cycloconverter is a _____. (CO7)

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

SECTION-B

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

Q.11 What is stand by ups? (CO6)

Q.12 Define Inverter. (CO7)

Q.13 Commutation is the process to turn _____ the SCR. (CO2)

Q.14 List two merits of HVDC system. (CO5)

Q.15 Name any method of speed control of D.C. motor. (CO5)

Q.16 Draw the Symbol of TRIAC? (CO2)

Q.17 Expand MOSFET. (CO2)

Q.18 Expand GTO. (CO2)

Q.19 Write any two applications of chopper. (CO7)

Q.20 Classify Choppers. (CO7)

SECTION-C

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

Q.21 Explain the control of constant V/F operations. (CO2)

Q.22 Describe any two types of choppers. (CO7)

Q.23 How heat sinks are selected when using with thyristors-based circuit? (CO2)

Q.24 Explain the features of power transistor. (CO2)

Q25 Explain the operation of SCR by two transistor analog of SCR. (CO1)

Q.26 Draw the VI characteristics of SCR. (CO2)

Q.27 Explain the working principle of parallel invertor. (CO7)

Q.28 Draw the circuit diagram and V-I characteristic of DIAC. Explain it. (CO2)

Q.29 Draw the circuit for single phase bridge type fully controlled rectifier with R-L load. Explain it with input and output waveforms. (CO4)

Q.30 Describe the working of any one types of UPS. (CO6)

Q.31 Compare the features of type A and C type choppers. (CO7)

Q.32 List advantages of HVDC system. (CO5)

Q.33 Explain the principle of step-down chopper. (CO7)

Q.34 Construct the circuit of UJT as relaxation oscillator. Explain the circuit with the help of waveforms. (CO3)

Q.35 Draw the circuit diagram for battery charger using SCR. (CO5)

SECTION-D

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

Q.36 Explain the principle of operation of TRIAC with the neat and clean circuit diagram and V-I characteristic. (CO2)

Q.37 Explain the operation of fully controlled Bridge type full wave rectifier with their neat and clean circuit diagrams and waveforms. (CO2)

Q.38 Explain the concept of HVDC in detail. (CO5)