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Roll No.....

180962/170962

6th Sem,

Branch : Electrical Engg.

Sub. : Industrial Electronics & Control of drives (IECD)

Time : 3 Hrs. **M.M. : 100**

SECTION-A

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

Q.1 An SCR is a _____ switch. (CO-1)

a) Unidirectional b) Bidirectional

c) Three directional d) Four directional

Q.2 Inverter coverts (CO-5)

a) AC to DC b) DC to AC

c) DC to DC d) AC to AC

Q.3 A cyclo-converter is a _____ (CO-7)

a) One stage power converter

b) One stage voltage converter

c) One stage frequency converter

d) None of the above

Q.4 SCRs are connected in parallel to fulfill the _____ demand. (CO-1)

a) High voltage b) High current

c) Size d) Efficiency

Q.5 If the firing angle in an SCR rectifier is decreased, the output is (CO-4)

a) Increased b) Decreased

c) Maximum d) Remain unaffected

Q.6 The most suitable method to turn on the SCR device is (CO-1)

a) Gate Triggering Method

b) Forward Voltage Triggering Method

c) Temperature Triggering Method

d) dv/dt triggering Method

Q.7 Which method is used to control the speed of DC shunt motor above normal speed? (CO-3)

a) Armature voltage control method

b) Flux control method

c) Both option (1) & (2)

d) None of the above

Q.8 Static UPS requires (CO-5)

a) Only Rectifier

b) Only Inverter

c) Both Rectifier & Inverter

d) None of the above

Q.9 A DIAC is turned on by (CO-1)

a) Breakover voltage b) Gate Current

c) Gate Voltage d) None of the above

Q.10 A DC Chopper controls the average voltage across the DC motor by controlling. (CO-3)

a) Input voltage b) Field current

c) Line current d) Duration of Ton & Toff

Section B

Note: Objective types Questions. All Questions are compulsory. (10x1=10)

Q.11 List any one application of TRIAC. (CO-2)

Q.12 Draw symbol of DIAC. (CO-1)

Q.13 Define Electric drive. (CO-7)

Q.14 Write the purpose of freewheeling diode. (CO-4)

Q.15 Define commutation. (CO-1)

Q.16 Define trickle charging. (CO-6)

Q.17 Write two applications of cyclo-converter. (CO-7)

Q.18 In which quadrant class D chopper operates (CO-3)

Q.19 Name any one device that belongs to Thyristor family. (CO-1)

Q.20 Write full form of SMPS. (CO-6)

Section-C

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

Q.21 Draw the VI Characteristics of UJT and explain it working. (CO-1)

Q.22 Explain two transistor analogy of an SCR. (CO-1)

Q.23 Explain the circuit diagram for single phase, half controlled full wave rectifier. (CO-4)

Q.24 Explain the working of step down chopper with the help of circuit diagram. (CO-3)

Q.25 Define cycloconveter. Describe basic principle of its operation. (CO-7)

Q.26 Explain fan speed control circuit using Triac.(CO-2)

Q.27 Describe the concept of protection of thyristor. (CO-1)

Q.28 Describe briefly the slip control of AC drive. (CO-7)

Q.29 Draw and explain the block diagram of dual converter. (CO-7)

Q.30 Define UPS and explain the working of an line UPS. (CO-5)

Q.31 Explain the importance of heat sink and criterion of selection for thyristor. (CO-1)

Q.32 List five instructions for maintenance and care of Lead Acid batteries. (CO-6)

Q.33 List five advantages of SMPS over conventional power supply. (CO-7)

Q.34 Write a short note on CVT. (CO-7)

Q.35 Define commutation. Explain natural commutation. (CO-1)

Section-D

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

Q.36 Draw VI characteristics of SCR. Explain the construction and working of SCR. (CO-1)

Q.37 Explain the working of a current source series inverter with the help of circuit diagram. Write the drawbacks of series inverter. (CO-7)

Q.38 Explain the speed control method for DC motor using dual converter with proper circuit diagram. (CO-3)