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220953

5th Sem / Electrical , IC

Subject : Industrial Electronics and Control of Drives

Time : 3 Hrs. M.M. : 60

SECTION-A

Note: Multiple choice questions. All questions are compulsory (6x1=6)

Q.1 A TRIAC is a _____ switch (CO1)

a) Unidirectional b) Mechanical
c) Bidirectional d) Four directional

Q.2 The SCR is turned off when the anode current falls below (CO1)

a) Break over voltage
b) Forward current rating
c) Latching current
d) Holding current

Q.3 A cycloconverter is a (CO3)

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

Q.4 If firing angle is an SCR is decreases , the output is (CO2)

a) Increased b) Decreased
c) Maximum d) Remain unaffected

Q.5 Which method is used to control the speed of DC shunt motor above normal speed? (CO4)

a) Armature voltage control method
b) Flux control method
c) Both option (a) & (b)
d) None of the above

Q.6 UPS stands for (CO5)

a) Unipolar Power Supply
b) Uninterrupted polar Supply
c) Uninterrupted Power Supply
d) None of the above

SECTION-B

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

Q.7 Name any two members of the thyristor family. (CO1)

Q.8 Define chopper. (CO3)

Q.9 What is an Electric Drive? (CO4)

Q.10 Expand SMPS. (CO5)

Q.11 Define Commutation. (CO1)

Q.12 Define Controller Rectifier. (CO2)

SECTION-C

Note: Short answer type questions. Attempt any eight questions out of ten questions. (8x4=32)

Q.13 Draw symbol and V-I characteristics of DIAC. (CO1)

Q.14 Explain the different methods of triggering of an SCR. (CO1)

Q.15 Explain UJT as a Relaxation oscillator. (CO1)

Q.16 Difference between on -line UPS and off-line UPS. (CO5)

Q.17 What is step down chopper? Explain its working. (CO3)

Q.18 Explain the working of single phase half wave controlled rectifier with resistive Inductive (R-L) Load with proper circuit diagram and voltage current waveforms.

Q.19 Explain single-phase full-controlled full wave rectifier. (CO2)

Q.20 What do you mean by inverter? What are its different applications? (CO3)

Q.21 Draw and explain the Block Diagram of an Electric Drive. (CO4)

Q.22 Draw Block Diagram of SMPS. (Co5)

SECTION-D

Note: Long answer type questions. Attempt any two questions out of three questions. (2x8=16)

Q.23 Explain the construction, working principle, and V-I characteristics of SCR. (CO1)

Q.24 Explain the working principle of single-phase to single-phase cycloconverter. (CO3)

Q.25 Write a short note on any two:

a) Heat sink for thyristor (CO1)

b) Power converter for electric vehicle charging. (CO5)

c) Concept of freewheeling diode. (CO2)