

SECTION-D

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

- Q.23 Draw and explain construction, working and V-I characteristics of TRIAC? (CO1)
- Q.24 Design a battery charger circuit using SCR? (CO2)
- Q.25 Explain working of offline UPS with the help of relevant block diagram? (CO5)

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3rd Sem / Automation & Robotics

Subject : Drives and Control Systems

Time : 3 Hrs.

M.M. : 60

SECTION-A

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

Q.1 TRIAC have _____ number of terminals:(CO1)

- a) 1
- b) 2
- c) 3
- d) 4

Q.2 An SCR is a _____ device. (CO3)

- a) Unidirectional
- b) Bidirectional
- c) Tri directional
- d) Both (a) and (b)

Q.3 T in UJT stands for: (CO1)

- a) Terminal
- b) Transformer
- c) Test
- d) Transistor

Q.4 In a 3 phase full wave full controlled rectifier _____ SCR are used. (CO2)

(00)

(4)

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(1)

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- a) 2 b) 3
c) 6 d) 16

Q.5 Which of the following is not a choice of material for heat sink? (CO1)

- a) Copper b) Plastic
c) Aluminum d) Alloy of Aluminum

Q.6 A chopper converts _____ into _____. (CO3)

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

SECTION-B

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

Q.7 Define inverter? (CO3)

Q.8 Expand UPS? (CO5)

Q.9 In Resistance based triggering, firing angle can be up to 90°. (T/F) (CO1)

Q.10 Define firing angle? (CO2)

Q.11 What is duty cycle in a chopper? (CO3)

Q.12 List two suitable power sources for an inverter? (CO3)

SECTION-C

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

Q.13 Explain series and parallel operation of SCR? (CO1)

Q.14 Write a note on VFD? (CO4)

Q.15 List 4 applications of SMPS? (CO5)

Q.16 What is triggering? List its types and explain any one in details? (CO1)

Q.17 Explain working of series inverter with the help of neat sketch? (CO3)

Q.18 Describe working of single-phase Dual converter using suitable circuit diagram? (CO3)

Q.19 Explain single phase full wave half-controlled rectifier with waveform and circuit diagram? (CO2)

Q.20 Write a note on SCR specifications/ratings? (CO1)

Q.21 Compare flux control and voltage control method of DC motor Speed control? (CO4)

Q.22 Explain two transistor analogy of SCR? (CO1)