

- Q.25 Define  
 a) Surges                      b) Power failure  
 c) Harmonic distortion d) Sag
- Q.26 Explain Regenerative braking mode with diagram.
- Q.27 Give principle of operation of HVDC Transmission.
- Q.28 Explain the working of Automatic Battery Charger.
- Q.29 Explain the working principle of series Inverter.
- Q.30 Explain working principle of single phase half wave converter drives.
- Q.31 What are the advantages and disadvantages of AC drives?
- Q.32 Explain working principle of Cycloconverter. Controlled AC drives.
- Q.33 Explain the working of single phase fully controlled full wave bridges rectifier.
- Q.34 Explain the working of off-line UPS.
- Q.35 What are the application of TRIAC based circuits?

#### SECTION-D

- Note:** Long answer type questions. Attempt any two questions out of three questions. (2x10=20)
- Q.36 What is Triggering? What are the methods of Triggering? Explain gate Triggering.
- Q.37 What is Chopper? Explain types of Choppers in detail.
- Q.38 Explain speed control modes of DC motor using chopper drive.

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#### 5th Sem / IC, EI Subject:- Power Electronics

Time : 3Hrs.

M.M. : 100

#### SECTION-A

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

- Q.1 Inverter converts  
 a) DC power to DC Power  
 b) DC Power to AC Power  
 c) AC Power to AC Power  
 d) AC Power to DC Power
- Q.2 Field Control method is used in DC motors to get  
 a) Speed above normal speed  
 b) Speed below normal speed  
 c) Both A & B  
 d) None of the above
- Q.3 Class A-Chopper operates in  
 a) First quadrant  
 b) Second quadrant  
 c) All four quadrants  
 d) Both first and Second quadrants
- Q.4 Under voltage for an extended period of time causing equipment to malfunction is known as  
 a) Sag                              b) Surge  
 c) Brownout                      d) Power Failure

- Q.5 Which terminal does not belong to the SCR?  
 a) Anode                      b) Gate  
 c) Base                      d) Cathode
- Q.6 MOSFET is a  
 a) Current controller device  
 b) Both first and second quadrant  
 c) Both A & B  
 d) Power controlled device
- Q.7 TRIAC is equivalent to  
 a) Two SCRs connected in parallel  
 b) Two SCRs connected in anti-parallel  
 c) One SCR, one Diode connected in anti parallel  
 d) One diode, one SCRs connected in anti parallel
- Q.8 A fully controlled rectifier circuit contains  
 a) SCRs  
 b) Only diodes  
 c) Mixture of SCRs and diodes  
 d) None of these
- Q.9 Class - E chopper can operate in  
 a) 1st and 2nd quadrant    b) 2nd and 3rd quadrant  
 c) 1st and 4th quadrant    d) All the four quadrant
- Q.10 The output of regulated power supply  
 a) Changes when into AC supply changes  
 b) Remain constants irrespective of change in input AC change  
 c) Changes when output load current Changes  
 d) Changes when both input as supply and output load current Change

## SECTION-B

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

- Q.11 SCR is a Fully Controlled Switch (True/False)
- Q.12 The cathode of the SCR is always at negative potential w.r.t anode (True/False)
- Q.13 A rectifier converters \_\_\_\_\_ to \_\_\_\_\_.
- Q.14 What is slip power?
- Q.15 Give applications of dual converter?
- Q.16 Draw the symbol of DIAC.
- Q.17 SCR has \_\_\_\_\_ terminals.
- Q.18 The series inverter uses \_\_\_\_\_ type of commutation.
- Q.19 The speed of motor increases with the increase in \_\_\_\_\_.
- Q.20 In on-line UPS, the inverter is \_\_\_\_\_ all the time.

## SECTION-C

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

- Q.21 What is an inverter? What are its different types?
- Q.22 Explain the following terms related to SCR.  
 a) Latching current    b) Holding current  
 c) Forward dv/dt rating    d) PIV rating
- Q.23 Give the working principle and V-I characteristics of DIAC.
- Q.24 Explain the operation of Dual converter in circulating mode with diagram.