



- Notes :
1. Same Answer book must be used for each section.
 2. Due credit will be given to neatness and adequate dimensions.
 3. Assume suitable data wherever necessary.
 4. Diagrams and Chemical equation should be given wherever necessary.
 5. All questions carry marks as indicated.

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|------------|----|--|----------|
| 1. | a) | Elaborate the term thyristor. Give the list of thyristor family devices & explain DIAC & TRIAC devices. | 8 |
| | b) | Examine the two transistor model of SCR & derive an expression for anode current. | 8 |
| OR | | | |
| 2. | a) | Discuss the power MOSFET & IGBT. | 8 |
| | b) | What is commutation? Classify the commutation & discuss any two methods in briefly. | 8 |
| 3. | a) | Describe the working of type-C two quadrant choppers. | 8 |
| | b) | A full wave diode rectifier circuit using center tapped transformer has an rms input voltage of 200V from midpoint to each terminal load resistance is 2000Ω & forward resistance of diode is 500Ω . Assume that diode has infinite backward resistance. Find dc current, dc voltage, dc power, efficiency and voltage regulation. | 8 |
| OR | | | |
| 4. | a) | Discuss with neat diagram the operation of half bridge rectifier. | 8 |
| | b) | A dc chopper is supplying a resistive load, if the input & output voltages are 200V & 120V and chopping frequency is 800Hz. Find the period of conduction & blocking in each cycle. | 8 |
| 5. | a) | Elaborate the construction and working of DC motor. | 8 |
| | b) | Discuss the operation of brushless DC motor. | 8 |
| OR | | | |
| 6. | a) | Elaborate the working principle of position servo motor. | 8 |
| | b) | Why single phase induction motor is not self starting? Also give its solution for self starting. | 8 |
| 7. | a) | Elaborate Hall effect sensor based brushless d.c. motor drive. | 8 |
| | b) | Describe with neat circuit diagram the transistorized H-Bridge drive. | 8 |
| OR | | | |
| 8. | a) | Mention the different methods of speed control employed for DC series motor. | 8 |
| | b) | What are the advantages & disadvantages of armature resistance control of DC Shunt motor? | 8 |
| 9. | a) | What are the different methods of speed control of induction motor drive? Discuss it. | 8 |
| | b) | Discuss how solid state Relays are used for control of a.c. motor. | 8 |
| OR | | | |
| 10. | a) | Describe the operation of closed loop control of Induction motor. | 8 |
| | b) | Elaborate the neat block diagram & circuit diagram of variable frequency Drives. | 8 |
