Register No.:

1882

October 2024

Time – Three hours
(Maximum Marks: 100)

[N.B. 1. Answer all questions under Part-A. Each question carries 3 marks.

2. Answer all the questions either (A) or (B) in Part-B. Each question carries 14 marks.]

PART – A

1. Draw the symbol of GTO and its V-I characteristics.

2. Distinguish between holding current and latching current of SCR.

3. Write the applications of phase-controlled rectifier.

4. Define surge current rating.

5. What is meant by FM control in a DC chopper?

6. Mention the merits of 120° mode of operation of an inverter.

7. List the advantages of three-phase semi converter DC motor drives.

8. Draw the block diagram of closed loop control of DC drives.

9. What is static VAR compensation?

10. Draw the circuit diagram of single phase cycloconverter.

[Turn over.....

PART – B

11. (a) Draw the symbol, circuit, characteristics of a MOSFET and explain its operation.

(Or)

(b) Explain class C and class D commutation circuits.

12. (a) Explain about the working of single phase dual converter with RL load with neat circuit diagram.

(Or)

(b) Discuss about the operation of three phase fully controlled bridge converter with RL load with necessary diagrams.

13. (a) Explain the working of Morgan chopper circuit with a neat sketch.

(Or)

(b) Explain the working of modified Mc Murray full bridge inverter with a neat diagram.

14. (a) Explain the methods of speed control of DC motor with necessary waveforms.

(Or)

(b) Explain the operation of DC to DC converter using IGBTs.

15. (a) Explain how speed is controlled in an induction motor by stator voltage control method.

(Or)

(b) Explain the operation of micro computer based PWM control of induction motor with a block diagram.
