709 Register No.:

November 2022

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. What is meant by triggering of SCR?
2. Draw the structure of power MOSFET and IGBT.
3. State the advantages and disadvantages of Jones chopper.
4. Define line commutation and its types.
5. Define the requirement of an inverter.
6. Define ON line UPS.
7. State the advantages of PLC over relay logic.
8. Write about the ADD arithmetic function used in PLC.
9. Define thermal sensor and its applications.
10. State the selection criteria for actuators.

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PART – B

11. (a) Explain the working principle and VI characteristics of power MOSFET with neat diagram.

(Or)

(b) Explain the working principle of MOSFET with neat diagram and explain op-to isolator.

12. (a) With the diagram explain the operation of single phase AC chopper.

(Or)

(b) Explain the importance of flywheel diode and the operation of single phase fully controlled bridge converter with resistive load.

13. (a) With the diagram explain the operation of single phase full bridge inverter with RL load.

(Or)

(b) Explain the various method of obtaining sine wave output from an inverter.

14. (a) Draw and explain the ladder diagram for conveyor control.

(Or)

(b) Explain the various types of function used in PLC.

15. (a) Explain the case study on choice of sensors and actuators for maze solving robot.

(Or)

(b) Explain the case study on choice of sensors and actuators for self-driving cars.
