

Register No.:

903

April 2023

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. List out the comparisons of transistors BJT, IGBT, MOSFET.
2. Define pulse gate signal triggering.
3. Draw the circuit diagram and waveforms of single phase half controlled bridge converter with resistive load.
4. Define chopper and mention its uses.
5. Mention the different types of methods for obtaining sine wave output from an inverter.
6. Define battery bank and mention its types.
7. Compare PLC circuit and hardwired circuit.
8. Write about AND logic function used in PLC.
9. List types of electric motors.
10. Define sensor and its types.

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PART – B

- 11 A) With the diagram explain synchronized UJT triggering circuit.
(OR)
B) Explain the operation of GTO and state its advantages and disadvantages over thyristor.
- 12 A) With the diagram explain single phase fully controlled bridge converter with R load and RL load.
(OR)
B) Explain the principles of operation of single phase AC chopper with diagram.
- 13 A) With the diagram explain the operation of parallel inverter using IGBT.
(OR)
B) Compare ON line UPS and OFF line UPS. (4)
With the diagram explain McMurray inverter. (10)
- 14 A) Explain the various types of arithmetic functions used in PLC.
(OR)
B) Explain the evolution of PLC interface with GSM and the evolution of PLC.
- 15 A) Explain the construction and working of stepper motor and its applications.
(OR)
B) (i) Discuss briefly about potential field path planning. (7)
(ii) Explain briefly about direct drives. (7)