

Register No.:

573

October 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. Define power MOSFET.
2. Why is pulse triggering preferred for SCR?
3. State the importance of flywheel diode.
4. Define constant frequency control of chopper.
5. Define SMPS and state its applications.
6. Define Inverter and mention its uses.
7. Mention the advantages of PLCs over relays.
8. What is an AND logic in PLC?
9. Define optical sensor and its applications.
10. Write a short note on non-traditional actuators.

[Turn over.....

PART - B

11. (a) Explain the various types of gate triggering circuit of SCR.  
(Or)  
(b) Explain the operation of IGBT with a neat diagram.
12. (a) Explain the principles of operation of DC chopper with diagram.  
(Or)  
(b) With the diagram explain single phase fully controlled bridge converter with R load and RL load.
13. (a) With the diagram explain the operation of single phase inverter with resistive load.  
(Or)  
(b) Explain ON-line and OFF-line UPS with block diagram.
14. (a) Explain various types of digital input and output modules used in PLC.  
(Or)  
(b) Explain about ladder programming and steps involved in applications circuit used in PLC.
15. (a) Explain the types of electric motors used in robots.  
(Or)  
(b) Explain the sensors for Navigation and localization.

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