

Register No.:

588

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. Draw the symbol of float switch and write the uses of float switch.
2. What is electronic timer?
3. What is meant by dynamic braking in DC motor?
4. Write a note on DOL starter.
5. Write about the automatic control of water pump?
6. Discuss the merits of using a control supply with grounded and ungrounded neutral.
7. Write the types of automation.
8. List out any three PLCs available.
9. Write short notes on timer instruction.
10. What is meant by distributed control system?

PART – B

11. (a) (i) Explain the construction and working of Push button. (7)
(ii) Explain the construction and working of Selector switch. (7)
(Or)
(b) (i) What is the basic principle of contactor? (4)
(ii) Explain the construction and working of a solenoid type contactor with a neat sketch. (10)

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12. (a) (i) Explain about dynamic braking. (7)
(ii) Draw control circuit for jogging a dc motor in both the directions of rotation. (7)

(Or)

- (b) Explain the control circuit for the operation of secondary frequency acceleration starter.

13. (a) Draw the control circuit of an elevator and explain its sequence of operation.

(Or)

- (b) Write the general procedure for troubleshooting in control circuits.

14. (a) Explain working principle of operation of PLC with block diagram.

(Or)

- (b) (i) List six distinct advantages that PLCs offer over conventional relay-based control systems. (7)
(ii) How the I/O modules connect to the processor in a modular-type PLC configuration? Explain. (7)

15. (a) Explain the ladder logic diagram for DOL starter and draw the hardwire circuit.

(Or)

- (b) Explain the terms program and programming language as they apply to a PLC.