

978

**October 2016**

Time – Three hours  
(Maximum Marks: 75)

**[N.B: (1) Answer any fifteen questions in PART – A and division (A) or division (B) of each question in PART – B.**

**(2) Each question carries 1 (one) mark in PART – A and 12 (twelve) marks in PART – B.]**

PART – A

1. What is meant by sequence inter locks?
2. What is single phasing?
3. What is ON delay timer?
4. State the use of bimetallic strip.
5. What is the disadvantage of dynamic braking control?
6. What do you mean by definite time acceleration?.
7. What is meant by de-acceleration protection?
8. At what speed, the motor tends to run when the field coil opens?
9. List the advantages of DOL starter.
10. Which motor is started by secondary frequency acceleration starter?
11. What is the difference between automatic and semi-automatic star-delta starter?
12. Write the applied voltage at start in percentage in terms of normal rated voltage.
13. What is the function of output module?
14. Give any two advantages of PLC over the relay logic.
15. Write the two types of commonly used programming terminals in PLC.
16. Define PLC scan.
17. Name any two trouble spots in a control circuit.
18. What is the difference between batch type and continuous type of electrical oven?

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19. What are the different motions through which weights in the defined area are picked up and shifted to any desired position?
20. Write any three applications of conveyor system.

PART - B

21. (A) With neat sketch, explain DC series current relay and permanent magnet type latching relay.

(Or)

- (B) Explain with neat sketch, the principle of operation of pneumatic timer.

22. (A) Explain with neat control circuit diagram, the speed control of DC motor using UJT and SCR.

(Or)

- (B) Draw and explain the circuit for field acceleration protection with definite time starting.

23. (A) Draw and explain the control circuit for a simple two speed two winding 3 phase cage motor.

(Or)

- (B) Explain with control circuit for dynamic braking applied to 3 phase cage induction motor.

24. (A) Explain the working of DOL starter using PLC ladder diagram.

(Or)

- (B) Explain with sketches the process of input scan, program scan and output scan.

25. (A) Explain air compressor and its control circuit.

(Or)

- (B) Explain over head crane and its control circuit.