BHARATI VIDYAPEETH INSTITUTE OF TECHNOLOGY
Question Bank (I-Test)

Course: Elements of Industrial Automation   **Abbreviation: EIA**

Course code: (22526)   **Program code: EE**
Semester: 5I

UNIT-I

Industrial Control Circuits (CO1)

(2 Marks)

1. State the benefits of automation.
2. Define automation and State its need.
3. List any two input and output devices used in conjunction with PLC.
4. Draw the symbol of following : push button, limit switch, proximity switch, pressure switch.
5. State the functions of proximity switch and pressure switch.
6. List all the input devices used in PLC.
7. List all the output devices used in PLC.
8. Define Industrial Control Circuit .
9. Draw the symbol of any four Industrial control circuits.
10. Draw the symbols of following components used in industrial control circuits. i) Fuse ii) Over load relay iii) Earthing iv) 3 Φ Induction Motor
11. Draw the symbol of MCB and DC motor.

(4 Marks)

12. Develop the control circuit for star-delta starter used for starting a 3 Φ Induction Motor.
13. Develop a control and power circuit for conveyer.
14. Develop control and power circuit for lifting magnet.
15. Develop control and power circuit for mill extruder.
16. Develop control and power circuit for Hoist Control.
17. Explain with block diagram the working of soft starter.

UNIT - II
PLC Fundamentals (CO2)

(2 Marks)

18. Draw the block diagram of PLC.
19. Define PLC and write the advantages of PLC.
20. State the function of stepper motor module in PLC.
21. Write the classification of PLC.

(4 Marks)

22. State the functions of following components in PLC i) Input module ii) CPU
23. Explain the function of following components of PLC
    a) CPU b) Memory   c) Power supply   d) Input Modules
24. Draw the block diagram of digital input module of PLC. State function of its blocks.
25. Draw the block diagram of analog input module of PLC. State function of its blocks.
26. Explain the block diagram and function of each part in PID controller module.
27. State the functions of PLC memory w.r.t. types, speed of execution.
28. Explain the functions of PID controller module and communication module
29. Draw the block diagram of digital output module of PLC and explain the function of each block.
30. Differentiate between modular and fixed PLC.
31. Compare micro and mini PLCs based on CPU type, no. of I/Os, speed and memory.
32. Identify the components of Analog output module. State the functions of any four of them.
33. Explain the functions of various components of the block diagram of PLC

UNIT - III

PLC Programming basics (CO3)

(2 Marks)

34. List different programming languages used with PLC.
35. State the components of Ladder diagram.
36. Draw a PLC wiring diagram for control of a lamp from 2 switches.

(4 Marks)

37. List arithmetic instructions of PLC. Explain any two instruction with example.
38. List comparison instructions of PLC. Explain any two instruction with example.
39. List Logical instructions of PLC. Explain any two instruction with example.