

T. Y. B. Tech. (Instrumentation)

INDUSTRIAL AUTOMATION AND CONTROL (BTINC602)

Question bank

UNIT-I

1. Draw and explain Architecture of Industrial Automation.
2. Draw and explain measurement systems.
3. What is sensor and explain any one type of sensor.
4. What are advantages and disadvantages in an automation.

UNIT-II

5. Define a temperature and explain its scales.
6. Draw and explain in details thermocouple.
7. Draw and explain in details RTD.
8. Draw and explain in details thermistor.
9. Draw and explain in details pyrometer.
10. Draw and explain McLeod Gauge.
11. Define a pressure and explain C shaped bourdon gauge.
12. Classify displacement transducer and explain any one.
13. Explain with figure orifice flow meter principle of operation.
14. Draw and explain venturi tube.
15. Explain with figure Pitot tube principle of operation.
16. Draw and explain venturi differential pressure transmitter (DPT).
17. Draw and explain level measurement using hydrostatic pressure.
18. Draw and explain bubbler level measurement system.
19. Draw and explain capacitive level measurement system.
20. What is a pH measuring system?
21. Explain in details signal Conditioning.
22. Write notes on estimation of errors.

UNIT-III

23. Explain PID control with its block diagram.
24. Explain manual method of tuning PID controller.
25. Draw and explain feed forward and ratio control.
26. Draw and explain cascade control.
27. Draw and explain override control.
28. Draw and explain selective control.
29. Draw and explain split range control.

UNIT-IV

- 30. Draw and explain architecture of PLC.
- 31. Explain in details relay ladder logic in PLC.
- 32. Explain in details scan cycle in PLC.
- 33. Explain in details sequence and logic control.

UNIT-V

- 34. Explain in details CNC Machine.
- 35. What are actuators? Explain any one of type of actuator.
- 36. Draw and explain flow control valve.
- 37. Draw and explain hydraulic actuator system.
- 38. Draw and explain components and symbols in hydraulic actuator system.

UNIT-V

- 39. Draw and explain basic components of pneumatic system.
- 40. Write short notes on screw compressor.
- 41. Write short notes on diaphragm compressor.
- 42. Write short notes on rotary vane compressors.
- 43. Draw and explain any one pneumatic controller in pneumatic system.
- 44. Write short notes on applications of pneumatic system.
- 45. Write short notes on Fieldbus.
- 46. Explain the foundation Fieldbus communications mode.
- 47. Explain in details production control systems.