Suggestions:

1. With sketches, explain NC, CNC and DNC machine tool.
2. Why is CNC machining necessary?
3. What is the difference between NC and CNC machine?
4. What is tool compensation in a CNC machine?
5. What is interpolation with respect to CNC machining?
6. Why cutter compensation is provided in CNC programming?
7. Write any four G codes as well as M codes.
8. What are the different types of power drives in the CNC machine?
9. With sketches explain the difference between NC and CNC Machine.
10. Explain Canned Cycle in CNC Programming.
11. Draw the cross sectional view of a stepper motor/ DC motor/ induction motor and explain the working principle.
12. Write the advantages and disadvantages of stepper motor.
13. With block diagram of a servo system, explain the working principle of a servo motor.
14. Drawing a block diagram, explain the operation of a Closed Loop System.
15. Define sensor and transducer.
16. Name the various specifications of a sensor/transducer system.
17. Write the detail classification of sensors in view of their applications in manufacturing.
18. With sketches, explain in short the working principle of a potentiometer/LVDT/strain gauge/pneumatic sensor/tachogenerator/ strain gauge as force sensor/strain gauge as pressure sensor/turbine meter.
19. Why signal conditioning is important?
20. What is pulse width modulation?
21. Name the application areas of the fluid power system.
22. What are the advantages of a fluid power system?
23. With diagram describe the basic components of a hydraulic system
24. Compare between hydraulic and pneumatic Systems.
25. Compare mechanical, electrical, pneumatic and hydraulic power system.
26. Write the Pascal's law.
27. What is a hydraulic jack?
28. What are the different types of control valves in a hydraulic system?
29. With a diagram explain the basic components of a pneumatic system.
30. With proper constructional diagram, explain the working principle of any two combinations of 4-ports 3-position directional control valve.
31. What is the difference between single and double acting cylinder.
32. Drawing the constructional diagram explain the working principle of relief valve/ flow control valve/pressure reducing valve.
33. Draw a hydraulic cylinder sequencing circuit and explain the working principle.
34. Draw an automatic cylinder reciprocating system and explain the working principle.
35. Draw and explain the meter in and the meter out circuit.
36. Explain the working function of a accumulator in a hydraulic circuit.
37. What are the different types of automation systems and explain them.
38. With a diagram compare the different types of automation.
39. What are the reasons behind automation?

40. What are the disadvantages of doing automation?