

- Q.29 Discuss the hydraulic controller.  
 Q.30 What are the process instrumentation symbol?  
 Q.31 What is control valve?  
 Q.32 Explain the colour coding of line.  
 Q.33 Sketch the instrumentation drawing of a power plant.  
 Q.34 What is PCB layout designing.  
 Q.35 What is the blow up diagram?

### **SECTION-D**

- Note:** Long answer type questions. Attempt any two questions out of three questions. (2x10=20)
- Q.36 What is installation procedure of instrument  
 Q.37 Draw the schematic diagram of following  
     (i) Shuttle valve  
     (ii) Pneumatic relay  
     (iii) Single acting cylinder  
 Q.38 Discuss balloon symbol and electronic symbol in detail.

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### **4th Sem / Branch : Instrumentation & Control Subject:- Instrumentation Drawing**

Time : 3Hrs. M.M. : 100

### **SECTION-A**

**Note:** Multiple choice questions. All questions are compulsory (10x1=10)

- Q.1 Motor is used to convert electrical energy into mechanical energy,  
     a) True                          b) False  
     c) Both A & B                   d) None of the Above
- Q.2 Which type of PCB requires minimum soldering on component side in order to avoid replacement oriented difficulties.  
     a) Single side PCB              b) Double side PCB  
     c) Both A & B                   d) None of these
- Q.3 The power source in pneumatic system is \_\_\_\_\_  
     a) Compressor                   b) Valve  
     c) Air receiver                  d) Muffler
- Q.4 What is hydro power plant?  
     a) Mechanical energy from the stagnant water current  
     b) Electrical energy from the moving water currents

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- c) Electrical energy from the water current  
 d) Mechanical energy from the water current
- Q.5 PFD expand as process \_\_\_\_\_  
 a) Flow diagram      b) Fast data  
 c) Flow data      d) None of these
- Q.6 Which of the following is not used to fix drawing sheet on the board?  
 a) Clips      b) Thread  
 c) Drawing pins      d) None of these
- Q.7 PCB's should be fabricated with \_\_\_\_\_ layers  
 a) Only one      b) Odd Number of  
 c) Even Number of      d) None of these
- Q.8 Write the unit capacitor  
 a) Volt      b) Farad  
 c) Ohm      d) Watt
- Q.9 Which of the following is a type of power plant?  
 a) Thermal power plant  
 b) Hydro power plant  
 c) Nuclear power plant  
 d) All of these
- Q.10 Voltage is measured by  
 a) Ammeter      b) Voltmeter  
 c) Wattmeter      d) Ultimeter
- Q.11 A group of cell is known as \_\_\_\_\_ battery  
 a) True      b) False  
 c) Both (a) & (b)      d) None of the above

## SECTION-B

- Note:** Objective type questions. All questions are compulsory. (10x1=10)
- Q.11 What is resistance?  
 Q.12 Draw the symbol of voltmeter  
 Q.13 Define plug  
 Q.14 Draw the symbol of valve  
 Q.15 What is flow chart?  
 Q.16 Expand PCB.  
 Q.17 What is hydraulic system?  
 Q.18 Write the unit of capacitor?  
 Q.19 Draw the symbol of ballon.  
 Q.20 What is single side of PCB?

## SECTION-C

- Note:** Short answer type questions. Attempt any twelve questions out of fifteen questions. (12x5=60)
- Q.21 What is tandem valve ?  
 Q.22 Draw the line symbol.  
 Q.23 Write the difference between wiring diagram and schematic diagram.  
 Q.24 What is hydraulic system?  
 Q.25 Draw the diagram of power plant in form of flow chart.  
 Q.26 Explain double side PCB.  
 Q.27 Write a short note on Plug.  
 Q.28 Draw the sketch of PI controller.