

- Q.29 Describe block diagram of process control system.
  - Q.30 Define unit step & sinusoidal input.
  - Q.31 Define valve actuator & positioner.
  - Q.32 Describe oxygen analyzer in brief.
  - Q.33 Explain strip chart recorder in brief.
  - Q.34 Explain the working principle of inclined tube manometer.
  - Q.35 Define orsat analyzers.

## **SECTION-D**

**Note:** Long answer type questions. Attempt any two questions out of three questions. (2x10=20)

- Q.36 Explain with neat diagram the working principle of optical pyrometer.

Q.37 Describe the working principle of any one vacuum measuring instrument with neat diagram.

Q.38 What is thermistor P. Explain with a neat sketch the construction and working of a thermistor.

No. of Printed Pages : 4

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**Branch : Ceramic Engg / P & P  
Subject:- Process Instrumentation and control**

Time : 3Hrs.

M.M. : 100

## **SECTION-A**

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

- Q.1 The base unit in S.I. system are

  - a) Metre, Kilogram, Second, ampere, Kelvin, Cantela, Mole
  - b) Metre, Kilogram, Second, Ampere, Kelvin, Cantela
  - c) Metre, Kilogram, Second, Ampere, Kelvin
  - d) Metre, Kilogram, Second, Ampere

Q.2 Ultra sonic level measurement works on the principle of generating

  - a) Light
  - b) Sound
  - c) Both
  - d) None

Q.3 In pressure gauge level indicator pressure gauge is mounted at

  - a) Top of the tank
  - b) Lowest level of the tank
  - c) Both top & lowest level
  - d) None

- Q.4 Ph of acidic solution is  
 a) Greater than 7      b) Less than 7  
 c) Equal to 7      d) None
- Q.5 One torr is defined as  
 a) One mm Hg      b) One inch Hg  
 c) One atmosphere      d) One kilo pascal
- Q.6 A capacitance pressure transducer indicates change in pressure by changing the  
 a) Voltage      b) frequency  
 c) Capacitance      d) Alternating current
- Q.7 Optical level detector uses  
 a) Light      b) Sound  
 c) Speed      d) None
- Q.8 Contactless temperature detector is called  
 a) RTD      b) Thermocouple  
 c) Pyrometer      d) Thermistor
- Q.9 Span is  
 a) Low & High value  
 b) Low value  
 c) High value  
 d) Difference between high and low value
- Q.10 Set-point of a system is also called  
 a) Manipulated variable  
 b) Desired variable  
 c) Controlled variable  
 d) Disturbance

## SECTION-B

- Note:** Objective type questions. All questions are compulsory. (10x1=10)
- Q.11 Define drift.  
 Q.12 Define calibration.  
 Q.13 Define sensitivity.  
 Q.14 Define repeatability.  
 Q.15 Convert 100°C into °F.  
 Q.16 Define set-point.  
 Q.17 Define range.  
 Q.18 Define manipulated variable.  
 Q.19 Write any two temperature measuring instrument.  
 Q.20 Define precision.

## SECTION-C

- Note:** Short answer type questions. Attempt any twelve questions out of fifteen questions. (12x5=60)
- Q.21 Define PH meter and its applications  
 Q.22 What are the instrumental and environmental errors? How can they be avoided?  
 Q.23 Explain U-tube manometer with neat diagram.  
 Q.24 Explain air purge system used for measuring level.  
 Q.25 Define feed back control system.  
 Q.26 Define in brief the working of a thermo couple.  
 Q.27 Write the advantages and disadvantages of filled system thermometer.  
 Q.28 Explain in brief the working principle of capacitive pressure transducers.