Q.27 Write the different sources of errors.

Q.28 Explain in brief radiation level detector with neat diagram.

Q.29 Explain Air purge system for level measurement with neat diagram.

Q.30 Explain in brief the working inclined tube manometer.

Q.31 Explain with neat diagram working of resistance thermometer detector.

Q.32 Explain oxygen analyzer in brief.

Q.33 Explain PH meter and its applications.

Q.34 Explain feed forward control system in brief.

Q.35 Explain the working of valve positioner.

## SECTION-D

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

Q.36 Classify various types of process control system. Explain the working of feed back control system with neat diagram.

Q.37 Explain with block diagram the concept and component of automatic control system.

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



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**6th Sem / Chem, P & P, Chem Engg. (Spl.Paint Tech.), Chem Engg ( Spl Polymer Tech)**

**Subject:- Process Instrumentation & Control**

Time : 3Hrs. M.M. : 100

## SECTION-A

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

Q.1 The performance of capacitance level indicator is affected by dirt, becomes its changes

a) Area of the plate

b) distance between to plates

c) dielectric constant

d) none of the above

Q.2 Optical level detector uses

a) sound b) gamma rays

c) light d) none

Q.3 On Farhreneit scale, the interval between lower and upper fixed point is divided into

a) 180 equal parts b) 100 equal parts

c) 200 equal parts d) 90 equal parts

Q.4 Which device is used for calibrating pressure gauges

a) Manometer
b) diaphragm
c) bellows
d) dead weight pressure test

Q.5 The difference between gauge and absolute pressure is

a) vacuum b) atmospheric pressure
c) zero d) none of the above

Q.6 PH of acidic solution is

a) greater than 7 b) equal to 7
c) less than 7 d) Zero

Q.7 In feed-back control system

a) input has control over output
b) input has no control over output
c) both a & b
d) None

Q.8 Set-point of a system is also called.

a) manipulated variable b) desired variable
c) controlled variable d) disturbance

Q.9 One bar is equal to

a) 1.013 atm b) 10.13 atm
c) 101.3 atm d) 1013 atm

Q.10 Which of the following is a contact pyrometer.

a) optical pyrometer b) radiation pyrometer
c) resistance pyrometer d) infrared pyrometer



## SECTION-B

**Note:** Objective type questions. All questions are compulsory. (10x1=10)

Q.11 Write the SI unit of dynamic viscosity.

Q.12 Define precision.

Q.13 Define drift.

Q.14 Define sensitivity.

Q.15 Define calibration.

Q.16 Define speed of response.

Q.17 Define laplace function of a control system.

Q.18 Define set-point

Q.19 For what purpose manometers are used in industry.

Q.20 Define span.

## SECTION-C

**Note:** Short answer type questions. Attempt any twelve questions out of fifteen questions. (12x5=60)

Q.21 Explain different types of static Errors.

Q.22 Explain value actuator in brief.

Q.23 Explain Orsat analyzer

Q.24 Define strip chart recorder in brief.

Q.25 Describe the working of optical pyrometer in brief.

Q.26 Describe the working of thermocouple in brief.