Q.20 Classify various types of measuring instruments.

Q.21 Explain working of oxygen analyzer in detail.

Q.22 Describe float type level indicator for liquid level measurement.

SECTION-D

Note: Long answer type questions. Attempt any two questions out of three questions. (2x8=16)

Q.23 Explain the principle, construction and working of capacitive pressure transducer with neat and clean diagram. Also write its advantages and disadvantages.

Q.24 Classify various types of process control system. Explain feedforward control system in detail with its block diagram, advantages and disadvantages.

Q.25 Explain in detail any two of the following:

a) Pressure gauge level detector

b) Bimetallic thermometer

c) Well type manometer

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3rd Sem / Chemical Engineering

Subject:- Process Instrumentation & Control

Time : 3Hrs. M.M. : 60

SECTION-A

Note: Multiple choice questions. All questions are compulsory (6x1=6)

Q.1 The largest range of values of a measured variable to which the instrument does not respond is called

a) Reproducibility b) Dead zone

c) Drift d) Accuracy

Q.2 Thermocouple employees two

a) Dissimilar metal strips

b) Similar metal strips

c) Similar metal wires

d) Dissimilar metal wires

Q.3 _____ is the dynamic characteristic of an instrument

a) Precision b) Drift

c) Dead zone d) Fidelity

Q.4 Optical level defector uses

a) Sound b) Gamma rays

c) Light d) None

Q.5 Orsat Analyzer is used for measuring the concentration of

a) Oxygen b) Carbon dioxide

c) Carbon monoxide d) All of these

Q.6 On Fahrenheit's scale, the interval between lower and upper fixed point is divided into

a) 180 equal parts b) 100 equal parts

c) 80 equal parts d) 90 equal parts

SECTION-B

Note: Objective/Completion type questions. All questions are compulsory. (6x1=6)

Q.7 1 atmosphere = _____ mmHg

Q.8 Give one example of a manual instrument.

Q.9 Give full form of RTD.

Q.10 Define accuracy.

Q.11 Resolution is the static characteristics of an instrument. (True/False)

Q.12 What is lag?

SECTION-C

Note: Short answer type questions. Attempt any eight questions out of ten questions. (8x4=32)

Q.13 Discuss about primary and secondary elements of an instrument.

Q.14 Convert 273 Kelvin into

a) Celsius b) Fahrenheit

Q.15 Draw neat and labeled diagram of dead weight piston gauge.

Q.16 Discuss about optical pyrometer in detail.

Q.17 What are the advantages of automatic process control?

Q.18 Draw well labeled diagram of ultrasonic level indicator.

Q.19 Explain various inputs used in process control.