No. of Printed Pages : 4
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220532

3rd Sem. / Chemical

Subject :Process Instrumentation & Control

Time : 3 Hrs. M.M. : 60

SECTION-A

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

Q.1 Component of a process control is?

a) measuring element
b) controller
c) final control element
d) all of these

Q.2 Radiation pyrometer is based on which law?

a) Stefan-Boltzmann's law
b) Boyle's law
c) Charle's law
d) Avagadro's law

Q.3 The ice point on Fahrenheit scale is designated as?

a) 0 °F b) 32 °F
c) 100 °F d) 212 °F

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

Q.23 Describe the principle, construction and working of a bimetallic thermometer in detail with the help of a neat diagram.

Q.24 Discuss with the help of a neat diagram construction, working & advantages of strip chart recorder.

Q.25 Explain the concept of automatic process control in detail by selecting suitable example along with associated neat diagram.

Q.4 The instrument which has wider limits of error is?

a) thermocouple
b) resistance thermometer
c) thermister
d) constant volume gas thermometer

Q.5 Manometer is device used for measurement of?

a) temperature b) viscosity
c) pressure d) velocity

Q.6 Which of the following is a type of registering instrument?

a) energy meter b) pyrometer
c) thermometer d) venturimeter

SECTION-B

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

Q.7 What is thermo emf?

Q.8 Write the name of an undesirable static characteristic of an instrument.

Q.9 What is reproducibility?

Q.10 Define Gauge Pressure.

Q.11 What are transducers?

Q.12 Write the name of an indirect method for measurement of liquid level.

SECTION-C

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

Q.13 Describe the any two static characteristic of an instrument in brief.

Q.14 What are advantages and disadvantages of thermocouples?

Q.15 Discuss inclined U-tube manometer in brief.

Q.16 What is difference between self-operated and power-operated instruments?

Q.17 Explain the principle of optical pyrometer in brief.

Q.18 Discuss the need & importance process instrumentation.

Q.19 What is difference between feed forward and feedback control system?

Q.20 Discuss the different types of pressure in brief.

Q.21 Describe the oxygen analyzer in brief.

Q.22 Explain the sight glass method for measurement of level in brief.

SECTION-D