

SECTION-D

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

- Q.23 Discuss feed backward control system with the help of a suitable example along with neat block diagram for the system?
- Q.24 What is significance of pH? Discuss construction and working of a pH meter with the help of a neat diagram in detail?
- Q.25 Describe the principle, construction and working of a resistance thermometer in detail with the help of a neat diagram?

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Roll No.

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**3rd Sem / Branch : Chemical
Sub.: Process Instrumentation & Control**

Time : 3Hrs.

M.M. : 60

SECTION-A

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

- Q.1 Thermocouple wire can be insulated by?
- a) Teflon
 - b) Asbestos
 - c) Fibre class
 - d) All of these
- Q.2 An abrupt input to a control followed by an immediate return to the initial position?
- a) Ramp input
 - b) Step input
 - c) pulse input
 - d) Sinusoidal input
- Q.3 The 50°C temperature is depicted on Kelvin scale as?
- a) 50 K
 - b) 223 K
 - c) 273 K
 - d) 323 K
- Q.4 Fidelity is which type of characteristic of an instrument?
- a) Desirable static characteristic
 - b) Undesirable static characteristic

- c) Desirable dynamic characteristic
 - d) Undesirable dynamic characteristic
- Q.5 Pyrometer is device used for measurement of?
- a) Temperature b) Level
 - c) Pressure d) Volume
- Q.6 The thermometer bulb of mercury in glass thermometer is which of the following type of element?
- a) Primary element
 - b) Secondary element
 - c) Manipulating element
 - d) Functioning element

SECTION-B

Note: Objective/Completion type questions. All questions are compulsory. $(6 \times 1 = 6)$

- Q.7 Define accuracy of an instrument?
- Q.8 What is span of an instrument?
- Q.9 Define the pH?
- Q.10 What is static pressure?
- Q.11 Write the name of a desirable dynamic characteristic of an instrument?
- Q.12 What are recording instruments?

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SECTION-C

Note: Short answer type questions. Attempt any eight questions out of ten questions. $(8 \times 4 = 32)$

- Q.13 What is difference between static characteristics & dynamic characteristics of an instrument?
- Q.14 Explain the working of bimetallic thermometer in brief?
- Q.15 Discuss the different types of measurement in brief?
- Q.16 What are the advantages of automatic process control?
- Q.17 Describe principle of float actuated level meter in brief?
- Q.18 Explain the different types of system input in brief?
- Q.19 What are the advantages and disadvantages of circular chart recorder?
- Q.20 Discuss the principle of ultrasonic level detectors in brief?
- Q.21 Discuss principle of optical pyrometer in brief?
- Q.22 Define and discuss different variables used in a control system?

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