

(45 & A-17)

SEAT No. _____

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SARDAR PATEL UNIVERSITY

B.Sc. Industrial Chemistry

(Semester -6TH) EXAMINATION

4th April 2018, Wednesday

Course No. : US06CICH05

(Industrial Instrumentation and Process Control)

Total Marks: 70

Time: 10:00am to 1:00pm

Q.1 Answer the given multiple choice questions.

[10]

1. The type of instrument which carry information from the point of measurement to some remote point is _____ type.
a) Signaling b) Registering c) Transmitting d) Indicating
2. Instruments which require external power supply is known as _____ operated instrument.
a) Power c) Manually
b) Self d) All of the above
3. The low expansion metal generally used in bimetallic strip are
a) Invar b) Brass c) Nickel d) None of these
4. Flexible circular disc used in pressure measurement are
a) Bellows c) Diaphragm
b) Spring d) None of these
5. Sight Glass method is used for measurement of _____
a) Pressure b) Level c) Density d) Temperature
6. Circular plate with a hole in it is
a) Orificemeter b) Venturimeter c) Pitot tube d) None of these
7. Triangular notch is used to measure
a) Open channel flow b) Closed conduit flow c) Both of these d) None of these
8. The curvilinear chart paper is used in _____ recorder.
a) strip chart b) circular chart c) Both (a) and (b) d) None of these.
9. The instruments which indicates result as numeric value is
a) Digital b) Analog c) Both (a and (b) d) None of these
10. The constant supply of air is required in
a) Pneumatic transmission c) Both a and b
b) Electrical transmission d) None of these

Q.2 Attempt any Ten.

[20]

- i. Explain direct measurement and Indirect measurement.
- ii. Write the principle of solid expansion thermometer.
- iii. Define : Precision and Dead Time lag.
- iv. Write classification of pressure measuring devices.
- v. Explain well manometer.
- vi. List different level measuring devices.
- vii. Discuss principle of Rotameter.
- viii. Write about pitot tube.
- ix. Explain total flow and rate of flow.
- x. Explain Fixed pointer movable scale type indicating instrument.
- xi. Discuss Capacitance lag and Dead Time Lag.
- xii. Explain load variable and controlled variable.

(1)

(P.T.O)

Q.3a) Write a note on: Resistance temperature detector. [5]
b) Discuss liquid expansion thermometer. [5]

OR

Q.3a) Write about pressure spring thermometer. [5]
b) Discuss classification of instruments on the basis of its function. [5]

Q.4a) Write notes on: i) Ultrasonic Level Detector [5]
ii) Bellow pressure gauge. [5]

OR

Q.4a) Discuss Dead Weight Piston Gauge. [5]
b) Explain Magnetic Float Gauge. [5]

Q.5a) Write classification of flow measuring devices used for open channel flow. [10]
Also derive an equation for Rectangular Notch.

OR

Q.5a) Derive an equation for Venturimeter. Also write about its construction [10]
advantages and disadvantages.

Q.6a) Write the difference between strip chart recorder and circular chart recorder. [5]
b) Discuss ON-OFF Control. [5]

OR

Q.6a) Write comparison of different control systems. [5]
b) Discuss Unit Lay Out and Central Lay Out. [5]

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