

V.P. & R.P.T.P. Science College
Vallabh Vidyanagar
Internal Examination B.Sc. Semester-6

Subject: Instrumentation and Sensors

Code: US06CPHY06

Date: 15-03-2014, Saturday Time: 03.30 to 5.00 pm

Marks: 30

Q.1 Answer in Short (Any Three). (Each 2 Mark) (6)

1. Draw block diagram of CRO and label each component.
2. Explain principle of measurements of Electromechanical transducers.
3. Draw the labeled diagram of ionization transducer and state its principle.
4. Draw the schematic of inclined limb manometer and state its advantage.
5. Draw the schematic of a solid rod thermometer and state its principle.
6. What are thermistors? Explain their types and characteristics.

Q. 2 What are inductive type transducers? Discuss their types (8)

OR

Q. 2 Show that in a cathode ray tube of a CRO, path of an electron reaching the screen is parabolic. Derive expression for (i) location of apparent origin and (ii) deflection of electron on the screen in a CRT. (8)

Q.3(a) Write a note on photo-emissive opto-electrical transducers. (4)

(b) Explain principle and working of a thermal conductivity gage. (4)

OR

Q. 3 Explain moderate pressure measurements using different manometers. (8)

Q.4(a) Explain Metallic Resistance Thermometers. (4)

Q.4(b) Explain principle and construction of a thermocouple and state laws of thermocouples. (4)

OR

Q. 4 What are pyrometers? Classify them. Explain principle, construction and working of Disappearing Filament type Pyrometer. (8)

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