

V.P. & R.P.T.P. SCIENCE COLLEGE
VALLABH VIDYANAGAR



Sixth Semester B.Sc. Internal Examination

Subject: Physics

Course: USO6CPHY06

Title: Instrumentation and Sensors

Date: 11-03-2017, Saturday Time: 11:00am to 12:30pm

Total Marks:25

Q.-1 Multiple Choice Questions (Each of One Mark) (3)

- 1 When ferromagnetic materials like Ni are subjected to tension, its magnetic permeability
(a) remains unchanged (b) increases
(c) decreases (d) becomes infinite.
- 2 A photomultiplier tube is a type of transducer.
(a) photo-conductive (b) photo-emissive (c) photo-voltaic (d) ionization
- 3 The most suitable primary sensor for temperature measurement is..
(a) elastic cantilever (b) diaphragm
(c) bimetallic strip (d) bourdon gage

Q-2 Answer any Two questions in short (Each of two Mark) (4)

- 1 Draw block diagram of CRO and mention name of each component.
- 2 Draw schematic of thermal conductivity or pirani gage and state its principle.
- 3 What is a thermocouple? Explain Seebeck effect.

Q-3 With necessary diagram explain types of inductive type transducers. (6)

OR

Show that path of an electron in a CRT is parabolic. (6)

Q-4 With necessary diagram explain various types of manometers for moderate pressure measurements. (6)

OR

Explain principle, construction and working of a McLeod gage (6)

Q-5 Classify various methods for temperature measurements. Explain principle and working of Metallic rod thermometer. (6)

OR

What is pyrometry? Explain principle and working of disappearing filament type of optical pyrometer. (6)

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