



Que:2 Write answers of any ten questions in brief.

[20]

- 1 Mention the main advantages of getting an electrical signal as an output of any transducer element.
- 2 For resistance strain gauge explain the method of temperature compensation obtained with a dummy gauge.
- 3 For a capacitive transducer consists of two plates of diameter 2 cm each separated by an air gap of 0.25 mm, find the displacement sensitivity.
- 4 Explain in brief about photoconductive transducer.
- 5 Enlist the desirable characteristics of a manometer fluid.
- 6 Name the gauges used for low pressure measurement.
- 7 Enlist the principles on which non-electrical methods of temperature measurement are based upon.
- 8 What is a thermocouple? State peltier effect.
- 9 Mention advantages and disadvantages of bimetallic thermometer.
- 10 Draw schematic diagram of non-dispersive infrared gas analyser.
- 11 What is a biosensor? State its important features.
- 12 Draw schematic diagram of capacitor type microphone.

Que:3 Explain the principle of inductive type transducer and explain self generating and non-self generating inductive type transducers. [10]

OR

What is CRO? Explain its working principle. Draw block diagram of the CRO and explain the function of each of its components. [10]

Que:4 [A] What are manometers? For inclined tube manometer, obtain formula for pressure difference  $P_1 - P_2 = \rho gh_2$ . [06]

[B] Write a note on Pirani gauge. [04]

OR

Que:4 [A] State the principle of technique used in high pressure measurement. Also obtain the expression for sensitivity of transducer used to measure high pressure. [06]

[B] Write a note on Ionisation transducer. [04]

Que:5 [A] Name the two electrical methods used for temperature measurement. With schematic diagram, explain platinum resistance thermometer. [06]

[B] Write a note on solid rod thermometer. [04]

OR

Que:5 [A] Explain the construction and working of disappearing filament type of optical pyrometer. [06]

[B] State advantages of semiconductor resistance sensors. [04]

Que:6 [A] Draw the schematic diagram of ORSAT apparatus for exhaust gas analysis and explain its working. [06]

[B] Mention about the advantages of optical fibre sensors. [04]

OR

Que:6 [A] What are microphones? With necessary diagram explain the working of piezo-electric crystal type microphone. [06]

[B] What is a smart sensor? Explain it with necessary diagram. [04]

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