

B.Tech III Year I Semester (R13) Supplementary Examinations June 2017

INDUSTRIAL INSTRUMENTATION
(Electronics and Instrumentation Engineering)

Time: 3 hours

Max. Marks: 70

PART – A
(Compulsory Question)

- 1 Answer the following: (10 X 02 = 20 Marks)
- What is the principle of bourdon tube pressure gauge?
 - State the principle of bimetallic thermometers.
 - Define stagnation point in pitot tube.
 - What is the purpose of using annubar in flow measurement?
 - What are the factors affecting the accuracy of force measurement?
 - What is the principle of strain gauge measurement?
 - What is the principle of tachometer?
 - Define stroboscope.
 - Define density and viscosity.
 - What is psychrometer? What are the different types of hygrometer?

PART – B
(Answer all five units, 5 X 10 = 50 Marks)

UNIT – I

- 2 (a) Explain about bellows & diaphragm with neat diagram.
(b) Explain in detail about RTD and its characteristics.

OR

- 3 (a) Explain the thermocouple junctions and different types of reference junctions used.
(b) Explain Bourdon tube and its types.

UNIT – II

- 4 (a) Explain hot wire anemometer with neat diagram.
(b) Write the salient features of capacitive sensor.

OR

- 5 (a) With a neat figure, explain the working of a Doppler velocimeter.
(b) Discuss briefly purging techniques.

UNIT – III

- 6 (a) Explain the method of force measurement using strain gauge.
(b) Write the salient features of vibrating wire sensor.

OR

- 7 (a) Draw the diagram and describe the working of dynamometer.
(b) Write short notes on gyroscope.

UNIT – IV

- 8 (a) With a neat diagram, explain the construction and working of stroboscope.
(b) How do you measure velocity of rotating machinery? Explain the same.

OR

- 9 (a) Draw and explain the working of Revolution counter.
(b) Draw and explain variable reluctance type accelerometer.

UNIT – V

- 10 (a) With neat sketches, explain in detail the function of a Hydrophone.
(b) List characteristics of ionization type of detectors with neat sketches and graphs.

OR

- 11 (a) Explain the behavior of a charged particle in a magnetic field.
(b) Discuss the method of measurement of magnetic field.
