Scheme - I

Sample Question Paper

Program Name : **Electrical Engineering Program Group / Diploma in Industrial Electronics**

Program Code : **EE/EP/EU/IE** **22420**

Semester : **Fourth**

Course Title : **Industrial Measurements**

Marks : **70** **Time: 3Hrs.**

Instructions:

(1) All questions are compulsory.
(2) Illustrate your answers with neat sketches wherever necessary.
(3) Figures to the right indicate full marks.
(4) Assume suitable data if necessary.
(5) Preferably, write the answers in sequential order.

Q.1) Attempt any FIVE of the following. **10 Marks**

a) State the necessity of instrument calibration

b) List Pressure measuring devices

c) Write equation of Reynolds number with meaning of each term

d) List different types of variable head flow meter

e) List different types of indirect level measurement meter

f) Write conversion equation for temperature scale of Farenhit to Centrigrade

g) State law of Seebeck and Peltier effect

Q.2) Attempt any THREE of the following. **12 Marks**

a) Draw and explain block diagram of instrumentation system

b) Describe criteria for the classification of transducer

c) Explain the working of U tube Manometer with neat sketch

d) Explain in detail calibration technique and draw the calibration curve in general for pressure measurement.

Q.3) Attempt any THREE of the following. **12 Marks**

a) Classify the transducer on basis of working and applications.

b) Write the application of electrical transducer

c) State the advantages and disadvantages of bellows?

d) Explain the working of Electromagnetic Flow meter with neat sketch

Q.4) Attempt any THREE of the following. 12 Marks

a) Suggest relevant flow transducer for following applications:-

i) Epoxies Lubricating oil

ii) Water and wastewater

iii) Exhausted gas

iv) Power and energy

b) Explain the construction of following flow meter with neat sketches: i) linear potentiometer ii) rotary potentiometer level meter

c) Differentiate the salient features of capacitor type level meter and nuclear radiation type level meter

d) Describe with neat labelled diagram measurement of flow using hydrostatic level meter

e) State applications of temperature measurement transducer i) vapour pressure thermometer ii) bimetallic pressure thermometer iii) RTD iv) Pyrometer

Q.5) Attempt any TWO of the following. 12 Marks

a) Describe with sketches the procedure to troubleshoot Diaphragm type pressure transducers

b) State applications and compare the advantages and disadvantages of an orifice meter and a venturimeter

c) Explain the following troubles and related remedies in ultrasonic flow meter

i) Meter does not show reading ii) Meter shows less value of flow measured

iii) Meter shows high value of flow measured.

Q.6) Attempt any TWO of the following. 12 Marks

a) Suggest relevant level transducer for following applications:

i) level control of liquid, powders and fine grained solids within mining

ii)chemical processing and food industries.

iii) Tank level monitoring in chemical, water treatment.

b) Explain the working of following temperature sensors with neat sketches:

i) vapour pressure ii) Thermocouple

c) Describe calibration procedure with a neat diagram of temperature measurement system with inputs from RTD and thermocouple

Scheme - I

Sample Test Paper - I

Program Name : **Electrical Engineering Program Group / Diploma in Industrial Electronics**

Program Code : **EE/EP/EU/IE** **22420**

Semester : **Fourth**

Course Title : **Industrial Measurements**

Marks : **20** **Time: 1 Hour**

Instructions:

(1) All questions are compulsory.
(2) Illustrate your answers with neat sketches wherever necessary.
(3) Figures to the right indicate full marks.
(4) Assume suitable data if necessary.
(5) Preferably, write the answers in sequential order.

Q.1 Attempt any FOUR. **(08 Marks)**

a) Define: Calibration
b) Write two disadvantages of capacitive transducer
c) State the principle of U- tube manometer
d) Define pressure and write its unit
e) State use of Rotameter.
f) List different types of Electric flow meter

Q.2 Attempt any THREE. **(12 Marks)**

a) Write the functions of each block in instrumentation system
b) Write the application of mechanical transducer
c) Draw the diagram of Bourdon Tube pressure gauge
d) Explain the working of Diaphragm type pressure transducers
e) State the factors consider for the selection of right type of flow meter

Scheme - I

Sample Test Paper - II

Program Name : **Electrical Engineering Program Group / Diploma in Industrial Electronics**

Program Code : **EE/EP/EU/IE** **22420**

Semester : **Fourth**

Course Title : **Industrial Measurements**

Marks : **20** **Time: 1 Hour**

Instructions:

(1) All questions are compulsory.
(2) Illustrate your answers with neat sketches wherever necessary.
(3) Figures to the right indicate full marks.
(4) Assume suitable data if necessary.
(5) Preferably, write the answers in sequential order.

Q.1 Attempt any FOUR. **(08 Marks)**

a) State working principle of pitot tube
b) State the specification of positive displacement meter
c) State working principle of capacitive type level transducer
d) List different types of Electric level meter
e) State working principle of RTD
f) Draw temperature characteristics of Thermistor

Q.2 Attempt any THREE. **(12 Marks)**

a) Explain the working of venturimeter type flow meter with neat sketch.
b) Describe classification of level meters
c) Explain the troubles and related remedies in capacitor type level meter
d) Describe different types J, K, R, S, T thermocouple with a neat sketches
e) Draw neat labeled diagram of Pyrometer type temperature sensor .