

Scheme – I

Sample Question Paper

Program Name : Diploma in Mechanical Engineering
Program Code : ME
Semester : Fourth
Course Title : Mechanical Engineering Measurements
Marks : 70

22443

Time: 3 Hrs.

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) Enlist the different types of load cell
- b) State the functions of 'Dynamometer'
- c) Name metals used for Bimetallic strip
- d) Enlist the selection criteria for flow meter
- e) Classify the strain measurement methods
- f) List the different applications of "Load Cell"
- g) Classify Tachometers

Q.2) Attempt any THREE of the following.

12 Marks

- a) Explain term- Dead zone and Hysteresis
- b) Compare Infra-red sensor and Frequency Modulation transmitter
- c) Explain the working of 'Pirani Gauge' with neat sketch
- d) Describe the working principle of 'Oscillating piston flow meter'

Q.3) Attempt any THREE of the following.

12 Marks

- a) Distinguish between Threshold and Resolution
- b) List the factors depends on selection of transducer for specific application? Explain with suitable example
- c) Explain the construction of Quartz Force sensor

d) Describe with sketch the working principle of “Thermistor”

Q.4) Attempt any THREE of the following.

12 Marks

- a) Draw creep curve for force transducer? State its significance
- b) Compare between Diaphragm and Bellows
- c) Describe the working principle of ‘ Liquid in gas Thermometer’
- d) Explain the procedure of strain measurement of cantilever beam with neat diagram
- e) Write sound level norms for as per API
 - i. Air compressor
 - ii. Window air conditioner
 - iii. IC Engine
 - iv. Electric Motor

Q.5) Attempt any TWO of the following.

12 Marks

- a) Draw a block diagram of generalized measuring system showing all the elements.
State the functions of each element
- b) State the applications of Orifice meter, Venturi tube and pitot tube
- c) Draw the constructional details of Sling Psychrometer? State its applications

Q.6) Attempt any TWO of the following.

12 Marks

- a) Draw and explain the working of ‘Ultrasonic flow meter
- b) Draw a block diagram of FFT analyzer? Enlist its 6 major application
- c) State the applications of Electro dynamic Microphone and Carbon Microphone

Scheme – I

Sample Test Paper - I

Program Name : Diploma in Mechanical Engineering
Program Code : ME
Semester : Fourth
Course Title : Mechanical Engineering Measurements
Marks : 20

22443

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 Range
- b) Name any two contact and Non-contact transducers
- c) State the working principle of potentiometer
- d) State the functions of ‘Dynamometer’
- e) List the elements of thermocouple
- f) Name metals used for Bimetallic strip

Q.2 Attempt any THREE.

12 Marks

- a) Distinguish between Threshold and Resolution
- b) Compare between Dead zone and Dead time with the help of graphical representation
- c) Explain the working of ‘Slip Ring’ with neat sketch
- d) Draw the constructional details of ‘Transmission Dynamometer’
- e) Explain with sketch the working principle of ‘Thermistor’
- f) Draw a neat sketch of ‘Pressure Thermometer’? Explain its working

Scheme – I

Sample Test Paper - II

Program Name : Diploma in Mechanical Engineering
Program Code : ME
Semester : Fourth
Course Title : Mechanical Engineering Measurements
Marks : 20

22443

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) Name the materials used for orifice plate
- b) State the applications of Ultrasonic flow meter
- c) Define term “Gauge factor”
- d) State the functions of Accelerometer
- e) Classify Tachometers
- f) List different types of Speed Measuring instruments

Q.2 Attempt any THREE.

12 Marks

- a) Explain Hot wire anemometer with neat sketch
- b) State the applications of Orifice meter, Venturi tube and pitot tube
- c) Differentiate between Inductive Pick up and Capacitive Pick up
- d) Draw a labelled sketch of Stroboscope
- e) Describe the working principle of ‘Mechanical tachometer’
- f) Draw the constructional details of Sling Psychrometer? State its applications