

Code: ME6T1

III B.Tech - II Semester – Regular Examinations – May 2017

**MECHANICAL MEASUREMENTS
(MECHANICAL ENGINEERING)**

Duration: 3 hours

Max. Marks: 70

PART – A

Answer *all* the questions. All questions carry equal marks

11 x 2 = 22 M

1.

- a) Describe the principle of piezo electric transducer.
- b) Describe the working principle of Mcleod pressure gauge.
- c) List various types of transducers used for measurement of displacement.
- d) List advantages and disadvantages of stroboscopic methods.
- e) List various types of instruments used for measuring acceleration.
- f) What is dynamometer? List its types.
- g) Classify the Pressure measuring devices.
- h) Explain working principle of a pyrometer.
- i) Define wet bulb temperature.
- j) Explain working principle of delta type strain gauge rosette.
- k) What is absorption psychrometer?

PART – B

Answer any *THREE* questions. All questions carry equal marks.

3 x 16 = 48 M

2. a) Describe the methods of measurement of displacement using
- i) Inductive transducer. 4 M
 - ii) Capacitive transducer. 4 M
- b) What are the different types of pyrometers? Explain any one with neat sketch. Mention its advantages and disadvantages. 8 M
3. a) Explain the principle and working of Bourdon tube pressure gauge with neat sketch. 8 M
- b) Describe the working and theory of ultrasonic flow meter. List its advantages. 8 M
4. a) Name different type of electrical tachometers. Explain any one with neat sketch. 8 M
- b) Explain the principle and working of any vibrometer with neat sketch. List its advantages and disadvantages. 8 M
5. a) Explain the measurement of force using load cell with neat Sketch. 8 M

b) Derive an expression for gauge factor of a resistance strain gauge. 8 M

6. a) Explain how humidity is measured using sling psychrometer? 8 M

b) Briefly discuss the methods to control air pollution. 8 M