

Code: ME6T1

III B.Tech - II Semester – Regular Examinations – April 2016

**MECHANICAL MEASUREMENTS
(MECHANICAL ENGINEERING)**

Duration: 3 hours

Max. Marks: 70

Answer any FIVE questions. All questions carry equal marks

1)

a) Explain various sources of error in measurement. 7 M

b) Explain about the dynamic performance characteristics of a measuring instrument. 7 M

2)

a) Describe the principle of operation of piezoelectric transducer. Identify input and output of the system. 7 M

b) Sketch thermocouple circuit and write in brief about the measure the output from a thermocouple. 7 M

3) A gauge on the suction side of a pump shows a vacuum pressure of 21 cm of Hg. The barometer reads 75 cm of Hg. Calculate (a) pressure as shown by the gauge in cm of water column and in kgf/cm^2 . (b) Absolute pressure in kgf/cm^2 .

14 M

- 4)
- a) Distinguish between the direct and indirect modes of level measurements. 6 M
 - b) Explain the working principle of a turbine flow meter with neat sketch. 8 M
- 5) Describe briefly the measurement of vibration by the reed vibrometer and the stroboscope. 14 M
- 6)
- a) What are the requirements of materials for strain gauge? 5 M
 - b) Explain the method of usage of electrical resistance strain gauge for measuring bending. 9 M
- 7) Explain the working of hydraulic or pneumatic load cell for measurement of force with a neat sketch. 14 M
- 8) Explain in detail about the equipment used to control specific gaseous pollutants. 14 M