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BIMEE-015

B.Tech. – VIEP – MECHANICAL ENGINEERING (BTMEVI)

00476

Term-End Examination

June, 2015

BIMEE-015 : INDUSTRIAL MEASUREMENT AND QUALITY CONTROL

Time : 3 hours *Maximum Marks : 70*

Note : *Attempt any **five** questions. All questions carry equal marks.*

1. (a) Explain the temperature compensation of a strain gauge. 7

(b) Describe strain gauge rosettes. 7

2. (a) Discuss the use of Moire Fringe method in the measurement of vibrations. 7

(b) What types of electromechanical devices are available for vibration measurement ? Explain any one method. 7

3. (a) Explain the constructional features of a seismic transducer that can be used in the measurement of motion. 7

(b) Describe Gyroscopic devices used in the measurement of angular motion. 7

4. (a) Explain Seebeck effect, Peltier effect and Thomson effect for thermo-couples. 7

(b) Classify transducers and describe any one electromechanical transducer in detail. 7

5. Explain in detail the flame aspiration method of elemental spectro analysis. 14

6. (a) Differentiate between the following : 7

(i) Static and Dynamic characteristics

(ii) Random and Systemic errors

(b) Define sensitivity, drift, dead zone and threshold. 7

7. Write short notes on any ***four*** of the following :

$4 \times 3\frac{1}{2} = 14$

(a) Generalised data acquisition systems

(b) Accelerometers

(c) Stroboscopes

(d) Installation of strain gauges

(e) Bimetallic strip thermometers