

**B.Tech. ELECTRONICS AND
COMMUNICATION ENGINEERING
(BTECVI)**

00994

Term-End Examination

June, 2014

**BIEL-009 : ELECTRONIC MEASUREMENT AND
INSTRUMENTATION**

Time : 3 hours

Maximum Marks : 70

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

1. (a) Describe the difference between accuracy and precision. 5
(b) A 0-150 V voltmeter has a guaranteed accuracy of 1% full scale reading. The voltage measured by this instrument is 83 V. Find the limiting error in percent. 5

2. Describe the functional elements of an instrument and also specify their roles. 10

3. (a) Discuss the dynamic characteristics of first order measurement systems. 5
(b) Discuss the selection criteria of an instrument. 5

4. (a) Classify different types of instrumental errors. 5
 - (b) Explain the significance of variance for a given random data. 5
 5. What are DC and AC measurements ? Also discuss the differences between these two. 10
 6. Describe the classification of transducers. Also discuss the criteria of selecting a transducer for a particular application. 10
 7. What is displacement transducer ? Also explain the electrical principles most commonly used in the measurement of displacement. 10
 8. What is application of telemetry and remote sensing ? Also explain GPS system. 10
 9. With the help of a neat sketch, explain the principle and operation of CRO. 10
 10. Write short notes on any *two* of the following : $2 \times 5 = 10$
 - (a) Effect of loading in an instrument
 - (b) Spectrum analyser
 - (c) Digital R-L-C meters
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