

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

00675

**Term-End Examination  
June, 2019**

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

*Time : 3 hours*

*Maximum Marks : 70*

*Note : Attempt any seven questions. Assume missing data suitably, if any. Use of scientific calculator is permitted.*

1. (a) Discuss static and dynamic characteristics of an instrument. 5
- (b) Discuss the functional element of an instrument with the help of a neat diagram. 5
2. (a) What is error ? Differentiate between the different types of errors. 7
- (b) Three resistances  $R_1 = 10 \pm 2\%$ ,  $R_2 = 20 \pm 5\%$  and  $R_3 = 50 \pm 3\%$  are connected in series. Find the percentage (%) limiting error for series combination. 3

3. Classify the different types of digital voltmeters and explain ramp type digital voltmeter in detail. 10
  4. Explain LVDT in detail. Discuss its advantages and disadvantages. 10
  5. Explain Hall effect transducer in detail. Also discuss its application. 10
  6. What are Lissajous patterns ? How can they be used for the measurement of phase angle between two input signals and their frequency ratio ? 10
  7. Describe the working of a digital frequency meter with schematic block diagram. 10
  8. Draw the block diagram of an oscilloscope and explain its components. 10
  9. Explain the working of sweep generator with the help of block diagram. 10
  10. Explain the working of spectrum analyzer with the help of block diagram. 10
-