

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

00913 **Term-End Examination**
June, 2018

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

Time : 3 hours

Maximum Marks : 70

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

1. (a) Explain with neat block diagram, the working principle of digital frequency meter.
(b) Explain universal counter. 6+4=10

2. Write about CRO in terms of block diagram, deflection sensitivity, frequency and phase angle measurement. 10

3. Explain and mention the applications of wave analyzer and spectrum analyzer. 10

4. Realise a seven segment numeric display using LEDs and explain operating principles of LCD display. 10
5. Explain operation of basic digital multimeter. What are the advantages of digital instruments over analog instruments? 10
6. (a) What are the various sources of errors? How are they classified? 5
- (b) Explain various methods of error analysis. 5
7. (a) Explain the construction and working of voltmeter. 6
- (b) Classify various types of digital voltmeters. 4
8. Explain the Normal or Gaussian curve of errors in the study of random effects. 10
9. (a) A one milliamperemeter is to be converted to 1 A ammeter. The meter resistance is 100Ω . What is the value of shunt resistance? 5
- (b) Explain the working principle of sweep frequency generator. 5

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

$$4 \times 2 \frac{1}{2} = 10$$

- (a) Potentiometer
 - (b) Piezoelectric Transducers
 - (c) Hall Effect Transducers
 - (d) Strain Gauge
 - (e) Temperature Transducers
-