

B.Sc.- T.Y. (CBCS Pattern) Sem-V  
**USELT09 - Electronics Paper-I : Electronic instrumentation**

P. Pages : 2

Time : Three Hours



**GUG/W/22/13109**

Max. Marks : 50

- Notes :
1. All questions are compulsory and carry equal marks.
  2. Draw neat and labelled circuit diagrams wherever necessary.
  3. Use of log table/calculator is allowed.

Either

1. a) Draw block diagram of digital multimeter and explain in brief. **7+3**  
State advantages of digital multimeter (DMM)

**OR**

- b) Explain the construction and working of series and shunt type ohmmeter. **7+3**  
Write the difference between own's Bridge and Schering bridge.

Either

2. a) Draw the block diagram of CRO Explain the working of each Block. **10**

**OR**

- b) Explain electrostatic focusing in CRO with suitable diagram. **6+4**  
Explain the use of CRO for phase measurement.

Either

3. a) Explain working principle of phase locked loop with suitable diagram. **7+3**  
State the applications of phase locked loop.

**OR**

- b) Explain the working of signal generators. **5+5**  
What is difference between function generator and pulse generator?

Either

4. a) What are Active and passive transducers? Explain with example. **4+6**  
Explain construction and working of thermocouple transducer.

**OR**

- b) What is LVDT? Explain construction and working of LVDT. **1+5**  
Draw its characteristics and state its advantages. **+4**

5. Attempt **any ten** of the following.

10

- a) Define sensitivity of voltmeter.
- b) State two applications of ohmmeter?
- c) What type of quantity basically measured by DMM.
- d) State the use of control gride in CRT.
- e) What is Aquadag coating in CRO?
- f) State any two difference between dual trace and dual beam CRO.
- g) What is capture range in phase locked loop?
- h) What is phase detector?
- i) How do you find the frequency shift of a phase?
- j) What is piezoelectric effect?
- k) State any two applications of thermistor.
- l) What is light transducer.

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