

B.Sc.-III (CBCS Pattern) Semester - V  
**USELT-09 : Electronics Paper-I (Electronic instrumentation)**

P. Pages : 2

Time : Three Hours



**GUG/S/23/13109**

Max. Marks : 50

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

1. a) Construct the DC voltmeter using PMMC and explain its working. 5  
b) Explain the working of series type ohmmeter using PMMC with suitable circuit diagram. 5

**OR**

- c) Draw the block diagram of digital multimeter and explain the function of each block. 5  
d) Explain the general condition of bridge balance. 5
2. a) Draw the block diagram of CRO and explain the function of each block. 6  
b) Explain the vertical deflection system of CRO. 4

**OR**

- c) Explain the measurement of DC voltage and frequency by CRO. 6  
d) Differentiate between single trace and dual trace CRO. 4
3. a) Draw the block diagram of phase locked loop (PLL) and explain the function of each blocks. 5  
b) Explain the working of voltage controlled oscillator with suitable diagram. 5

**OR**

- c) Draw the block diagram of function generator and explain it. 5  
d) Draw and explain the working of lock-in-amplifier. 5
4. a) Explain the classification of transducer with suitable example. 4  
b) Explain the construction and working of resistive transducer. 6

**OR**

- c) Explain the working of LVDT with suitable diagram. 5  
d) Explain thermocouple transducer with suitable diagram. 5

**5.** Solve **any ten** of the followings:

**10**

- a) What is the use of ammeter?
- b) State the advantages of Digital Voltmeters.
- c) Draw the circuit diagram of Schering Bridge.
- d) State the application of CRO.
- e) State the advantages of digital CRO.
- f) What is the use of aquadag coating in CRT?
- g) State the application of PLL.
- h) Define lock range of PLL.
- i) What is pulse generator?
- j) What is transducer?
- k) What is active transducer?
- l) State the application of Photovoltaic cell.

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