2SELE-T2 - Electronics Paper-II (Measuring Devices)

P. Pages : 1   **GUG/S/19/1237**

0935

Time : Three Hours   Max. Marks : 50

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

1.   Either

a)   Explain how a PMMC galvanometer is converted in DC voltmeter.   **10**
Explain the concept of loading effect of voltmeter.

OR

b)   Explain how will you convert PMMC galvanometer into DC Ammeter.   **10**
A 1mA meter movement with an internal resistance of 100Ω is to be converted into $0 – 100mA$ ammeter calculate the value of the shunt resistance required.

2.   Either

a)   Obtain the general conditions for balance of an ac bridge.   **10**
The four impedance of an ac bridge are

$$z_1 = 400\Omega \angle 50°$$

$$z_2 = 200\Omega \angle 40°$$

$$z_3 = 800\Omega \angle -50°$$

and $z_4 = 400\Omega \angle 20°$

Find out whether the bridge is balanced under these conditions or not.

OR

b)   Explain Schearing bridge with circuit diagram and obtain balance conditions for it.   **10**
State the use of schearing bridge.

3.   Either

a)   Draw the block diagram of CRO and explain each block.   **10**

OR

b)   Draw block diagram of vertical deflection on system of CRO and Explain each blocks.   **10**

4.   Either

a)   Draw the well labelled block diagram of dual trace CRO and Explain each block.   **10**

OR

b)   Explain the method for measurement of   **10**
i)   Ac, dc voltage.   ii)   Phase by Lissajous figure method.
In an oscilloscope 200V, 50Hz signal produces a deflection of 2cm corresponding to a certain setting of vertical gain control. If another voltage produces 3cm deflection, what is the value of this voltage?

5.   a)   Define sensitivity of multimeter and write the uses of it.   **2½**
b)   Explain the construction of EVM?   **2½**
c)   What is delay line? What is its necessity?   **2½**
d)   Explain passive probe used in CRO?   **2½**

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