B.Sc. I (With Credits)-Regular-Semester 2012 Sem II

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

P. Pages : 1 **GUG/S/16/5574**

Time : Three Hours * 0 8 2 9 * Max. Marks : 50

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 calculator is allowed.

1. Either:

a) How will you convert PMMC galvanometer into DC Ammeter? Explain **10**
A 1.5 mA meter movement with an internal resistance of 105 Ω is to be converted into 0-150mA ammeter . Calculate the value of the shunt resistance required.

OR

b) Explain the working of shunt type ohmmeter. **10**
What are the merits and demerits of multimeter? Enlist the uses of multimeter.

2. Either:

a) Explain with suitable diagram working of Owen's bridge and obtain the balance condition of bridge. **10**
The impedance connected in the arms of a balanced ac bridges are as Z_1= 200+j400 Ω , Z_2= 300 Ω , Z_3=150 +j100 Ω calculate Z_4=?

OR

b) Explain the construction and working of EVM using FET. **10**
State the advantages of digital multimeter.

3. Either:

a) Draw the well labelled diagram of CRT and explain it. **10**

OR

b) Draw the circuit diagram of relaxation oscillator using UJT and explain its working. **10**
What is the need of delay line? Explain.

4. Either:

a) Explain the use of CRO for the measurement of frequency by using Lissajous method. **10**
A Lissajous pattern obtain on CRO has 5 horizontal tangencies and one vertical tangencies, calculate unknown frequency if known frequency is 300Hz. Draw such figure.

OR

b) Draw the block diagram of dual trace CRO and explain the function of each block. **10**
Differentiate between dual trace and dual beam CRO.

5. a) Explain the use of PMMC to measure dc voltage. **2½**

b) The impedances of a.c bridge are given as follows. **2½**
Z_1 = 150 Ω ∠60° (inductive impedance)
Z_2 = 250 Ω (pure resistance)
Z_3 = 400 Ω (inductive impedance)
Z_4 = ?
Determine the value of Z_4 arm.

c) Explain the horizontal and vertical deflection system used in CRO in brief. **2½**

d) Explain how will you measure as/dc voltage with CRO. **2½**

****