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

2SELE-T2 Electronics-II

(Measuring Devices)

Paper- II

P. Pages : 3

Time : Three Hours Max. Marks : 50

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

1. Either

a) Explain how will you convert PMMC galvanometer into dc ammeter. **5+5**

1mA meter movement with an internal resistance of 100 Ω is to be converted into 0-100mA-ammeter. Calculate the value of the shunt resistance required.

OR

b) Explain shunt type ohmmeter with suitable diagram **5**

Explain the concept of loading effect with suitable example. **5**

2. Either

a) Draw the diagram of AC bridge and obtain the condition of balance **5+5**

In ac bridge the impedance of arms are given as

$Z_1 = 250\Omega \angle 180^\circ$

$Z_2 = 450\Omega$

$Z_3 = 300\Omega \angle -30^\circ$

Determine Z_4

OR

b) Draw the block diagram of digital multimeter and explain the function of each block. **5+5**

Explain the working of Owen's bridge and obtain the balance condition for it.

3. Either

a) Draw the block diagram of CRO and explain function of each block state the applications of CRO. **7+3**

OR

b) Draw the diagram of CRT and explain its working **6+4**

Explain the concept of synchronization in CRO.

4. Either

a) Explain the use of CRO for frequency measurement using **7+3**

i) Time base circuit.

ii) Lissajous Figure method.

Find the unknown frequency using Lissajous figure which has 4 vertical tangencies and 1 Horizontal tangency and frequency given to x-plate is 500Hz.

OR

b) Draw the diagram of passive probe and explain. Explain working of dual trace CRO with block diagram. **4+6**

5. a) Explain how to convert PMMC galvanometer in dc voltmeter. **2½**

b) Draw the diagram of EVM using FET. **2½**

c) Explain the needs of delay line. **2½**

d) Explain use of CRO for ac voltage measurement. **2½**

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