Seat No. : _____

N15-104

November-2014

B.Sc., (Sem. –V)

EL-303 : Electronics

Time : 3 Hours] **[Max. Marks : 70**

Instructions: (1) **All** questions carry equal marks.
(2) Symbols and terminology used here have their usual meanings.
(3) Figures to the right indicate marks.

1. Explain the principle of chopper type DC amplifier voltmeter. Discuss the "Chopper type DC amplifier voltmeter in detail with necessary diagrams. Write advantages of Chopper type DC complifier voltmeter. **14**

OR

(A) Draw a block diagram of true RMS responding voltmeter and explain. **7**

(B) Draw a circuit of basic differential voltmeter and explain. Also draw the block diagram of an ac differential voltmeter. **7**

2. (A) Draw the block diagram of successive approximation type digital voltmeter. Explain its working with necessary diagrams. **10**

OR

Write the operating principle of Ramp type DVM. Draw the block diagram of Ramp type DVM and explain.

(B) An integrator consists of 100 k Ω Resister and 2 μF capacitor. If the applied voltage is 2 volt, what will be the output of the integrator after 2 seconds ? **4**

OR

A 3½ digit DVM is used for measuring voltage. Determine the resolution. How would a voltage of 13.32 be displayed on 10 V range and 100 V range ?

3. (A) Draw neat and clean block diagram for general purpose CRO and explain its working by showing role of each block. **8**

OR

Draw the diagram of Meshless scan expansion post deflection acceleration cathode ray tube and explain.

(B) Write the function of delay line. Write two kinds of delay line. Explain any one delay line in detail. **6**

OR

Write short notes on screens for Cathode Ray tube.

4. Draw the block diagram of Laboratory square wave and pulse generator and explain with necessary diagrams. **14**

OR

Write the fundamental difference between a pulse generator and square wave generator. Draw and discuss the pulse characteristics and terminology using necessary diagrams.

5. Answer the following : **14**

(1) What is VTVM ?

(2) Write basic difference between peak responding voltmeter and average responding voltmeter.

(3) Define sensitivity of digital voltmeter.

(4) Define Duty Cycle.

(5) Write disadvantage of Ramp type DVM.

(6) Draw simple sample and hold circuit.

(7) Define resolution.

(8) What is persistence ?

(9) What is graticules ?

(10) Define electric field.

(11) Define fall time.

(12) Draw a block diagram of simple sine wave generator.

(13) Draw the effect of under compensated probe.

(14) Convert – 60 dBw to dBm.

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