DA-110

December-2013

B.Sc. Sem.-V

ELE-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)   Internal options are given in Q-1, 2, 3 and 4.

               (4)   Q-5 is compulsory.

               (5)   Scientific calculator is allowed.

               (6)   Mobile phones are strictly prohibited during exam time.

               (7)   Attempt **all** questions.

1.   Draw and discuss the "Chopper type DC amplifier Voltmeter" in detail with necessary diagrams.   **14**

OR

Draw and discuss the "Shunt type Ohmmeter and its calibration with necessary circuit diagrams.

Suppose a Shunt type Ohmmeter uses a 20 mA basic D'Arsonal movement with an internal resistance of 70 Ω. The battery voltage is 5 V. It is desired to modify the circuit by adding appropriate Shunt resistance across the movement so that the instrument indicates 30 Ω at the midpoint scale. Calculate

(1)   The value of Shunt resistance

(2)   The value of Current limiting resistance R1

2.   Draw and discuss the "Dual slope integrating type DVM using voltage to Time conversion technique with needed diagrams.   **14**

OR

Draw and discuss the "Integrating type DVM using Voltage to Frequency conversion technique with needed diagrams.

3. Draw neat and clean block diagram for a general purpose CRO and explain its function in detail. Discuss the CRT circuits with necessary diagram. **14**

OR

What is Delay line ? Discuss the function of Delay Line and distributed parameter delay line in detail.

4. Draw and discuss the pulse characteristics and terminology using necessary diagrams. **14**

OR

Explain the working and function Laboratory Square wave and Pulse Generator with suitable in detail.

5. Answer the following : (**One** mark each) **14**

   (1) What is Duty cycle ?

   (2) Define : Rise time.

   (3) Write the formula for closed loop gain of the feedback amplifier.

   (4) What is "Graticules" ?

   (5) Define the deflection sensitivity.

   (6) Write the full form of SAR.

   (7) Draw the simple "Sample & hold circuit" clearly.

   (8) What is propagation delay ?

   (9) What is TVM ?

   (10) What is Modulation percentage ?

   (11) Draw the effect of Overcompensated probe.

   (12) What is "Fluorescence" ?

   (13) Define : Persistence.

   (14) What is "Multi trace" ?

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