

This question paper contains 2 printed pages]

Roll No.

--	--	--	--	--	--	--	--	--	--

S. No. of Question Paper : 82

Unique Paper Code : 222361

G

Name of the Paper : Electronics Instrumentation (ELPT-303)

Name of the Course : B.Sc. (Physical Science)

Semester : III

Duration : 3 Hours

Maximum Marks : 75

*(Write your Roll No. on the top immediately on receipt of this question paper.)*

Attempt any five questions.

1. (a) How is the basic d'Arsonval meter movement modified to work as a dc voltmeter and a dc ammeter ? 7½  
(b) What is voltmeter sensitivity ? Derive an expression for it. Also discuss what is loading effect. 7½
2. (a) Draw the block diagram and discuss the working of a ramp type digital voltmeter. 7½  
(b) Discuss the working of a series-type ohmmeter. Deduce the expressions for current-limiting resistor and zero-adjust resistor used. 7½
3. (a) Draw the general block diagram of CRO and explain the function of each block. 12  
(b) How is CRO used for the measurement of phase between two signals ? 3
4. (a) Discuss the operating principle of electrostatic focussing system of a CRT. 5  
(b) Derive an expression for the vertical deflection on the screen of a cathode ray tube (CRT) in terms of length of plates, separation distance, accelerating voltage, deflecting voltage and distance of screen from the origin. 10

P.T.O.

5. (a) Draw the block diagram of Horizontal Deflection system of a CRO and describe the function of each of its components. 10
- (b) What is the function of an attenuator ? Draw the circuit diagram of a two-stage attenuator. 5
6. (a) Draw the circuit diagram and explain how square wave is generated using Astable multivibrator. Also explain the term duty cycle, rise and fall time. 12
- (b) Draw the block diagram of sweep frequency generator. 3
7. Write short notes on any two : 7½, 7½
- (i) CRT Screen
- (ii) Light transducers and their applications
- (iii) Storage oscilloscope
- (iv) Ohmmeter.