SET - II

Unique Paper Code	: 32223904
Name of the Paper	: Basic Instrumentation Skills
Name of the Course	: B. Sc (Hons) and B. Sc. (Prog)-CBCS SEC
Semester	: III
Medium	: English
Duration: 3 hours	Max Marks: 50

Instructions for Candidates

- 1. Write your Roll No. on the top immediately on receipt of this question paper.
- 2. All questions carry equal marks. Attempt any **four** questions in all.
- 1. Define the following terms: (i) Average Value (ii) Arithmetic Mean (iii) Deviation (iv) Standard Deviation.

A voltmeter having a sensitivity of 1 k Ω in series with a milliammeter reading 80 V on 150 V scale. When the milliammeter read 10 mA calculate the (i) apparent resistance (ii) actual resistance of the unknown, and (iii) error due to loading effect of the voltmeter.

- 2. Describe the principle and working of DSO with help of block diagram. How will you make the following measurements with a DSO: (i) voltage (ii) frequency?
- 3. Draw the block diagram of Q-meter. Explain its working principle and write the equation for Q-meter
- 4. Using suitable block diagram, describe the working of time period measurement instrument. If unknown input signal of frequency 100 Hz is applied to an instrument used to measure time period, whose clock frequency is 100 kHz and display unit show five decimal digits. Then, what will be display at the output and how to infer the time period of the unknown signal from the output
- 5. Using descriptive diagrams, differentiate between the working of dual beam and dual trace oscilloscope. What do you understand by visual persistence and how is it helpful in the working of CRO?
- 6. Explain the working of pulse generator with terminology. What are the physical quantities measured with following bridges and draw the diagrams: i) Maxwell Bridge ii) Hay Bridge iii) Schering Bridge iv) Wien-bridge?