Chapter 3

Measuring Instruments

One mark questions (Knowledge):

- 1. What is an oscilloscope?
- 2. What is ECG?
- 3. What is sphygmomanometer?
- 4. Name the meter which is used to measure glucose present in human body?
- 5. What is a pulse oximeter?

One mark questions (Understanding):

- 1. How do you connect an ammeter in a circuit?
- 2. How do you connect the voltmeter in a circuit?
- 3. Name the meter which measures the physical quantity resistance.
- 4. Name the instrument which is use to measure current, voltage, resistance, etc.
- 5. Which instrument is used to measure the arterial blood pressure?

One mark questions (Application):

- 1. Can we check correctness of a diode using multimeter?
- 2. Is it possible to measure DC of 10 mV using CRO?
- 3. Write any one application of ECG.
- 4. Mention one application of Glucometer.
- 5. Mention one application of pulse oximeter.

Two marks questions (Knowledge):

- 1. Write the merits of multimeter.
- 2. Write the symbol of AC ammeter and DC Voltmeter.
- 3. Write the two important elements of a digital thermometer.
- 4. Explain the controls of multimeter.
- 5. Mention any four controls of CRO.

Two marks questions (Understanding):

- 1. Give an example for signal conditioner and transducer.
- 2. How digital thermometer work?

Two marks questions (Application):

- 1. What is CRO? Mention few applications of CRO.
- 2. What are the applications of glucometer and pulse oximeter?

Three marks questions (Knowledge):

- 1. Write the block diagram showing essential parts of electronic measuring instrument.
- 2. Explain Ohm meter.
- 3. List the precautions while using electronic instruments.

Three marks questions (Understanding):

- 1. Give details of various controls of multimeter.
- 2. Give details of front panel controls of CRO.
- 3. How DC voltage is measured using CRO.
- 4. Mention any three bio-medical electronic devices.

Three marks questions (Applications):

- 1. Explain how AC voltage, time period and frequency measured using CRO.
- 2. Write applications of multimeter.
- 3. Determine time period and frequency of AC. Given distance between two successive peaks on CRO screen is 4.0 divisions and time/division = 2 mS/division. Ans: T = 8 mS, f = 125 Hz
- 4. Determine peak voltage and rms voltage of AC. Given height of the trace from peak to peak on CRO screen is 4.0 divisions and volts/division = 5 V/division.

Ans: $V_p = 10 V$, $V_{rms} = 7.07 V$
