

## NAME OF THE INSTRUMENT: SOIL THERMOMETERS

### ➤ SOIL:

- The upper layer of earth wherein plants grow, a black or dark brown material typically consisting of a mixture of organic remains clay and rock particles.

### ➤ PURPOSE OF MEASUREMENT:

- **Soil temperature** is one of the important environmental factor of plant growth and development.

### ➤ UNIT:

- Degree Celsius ( $^{\circ}\text{C}$ )

### ➤ LEAST COUNT:

- $0.1^{\circ}\text{C}$

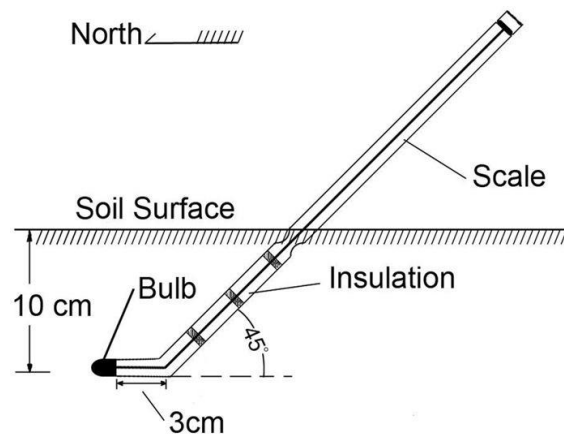
### ➤ TIME OF OBSERVATIONS:

- 07:18 hrs & 14:18 hrs

### ➤ DETAILS OF EQUIPMENT:

- For measuring soil temperature at depths of 5, 10 and 20 cm, the mercury-in-glass thermometers are used.
- These thermometers have a bend bulb of  $120^{\circ}$  and the rest of the stem is straight.
- The plot size is  $180\text{ cm} \times 120\text{ cm}$  wherein soil thermometers installed.
- These thermometers are held by the iron stands in inclined position making  $60^{\circ}$  angles with ground surface.
- Soil thermometers for 3 depths, i.e. 5 cm, 10 cm and 20 cm are placed 45 cm apart at an inclined depth of 5.8, 11.6 and 23.2 cm to ensure a vertical depth of 5, 10 and 20 cm, respectively.
- These thermometers with increasing depth are fixed from west to east, i.e. soil thermometer for 5 cm, depth is in the west followed by the thermometers of the depth of 10 cm, 20 cm.

- The range of soil thermometer is  $-20^{\circ}\text{C}$  to  $+60^{\circ}\text{C}$ .



### ➤ CHARACTERISTICS OF SOIL TEMPERATURES:

- The diurnal range of soil temperature is highest at the surface and this range decreases rapidly with depths and becomes practically negligible at a depth of 30 cm.
- In the morning the temperature is lowest at 5 cm depth and in the afternoon it is highest at 5 cm depth.