**EXPERIMENT -5**

Determination of viscosity of liquid using Oswald’s viscometer

**Aim:**

To determine the viscosity of the unknown liquid by using Ostwald’s viscometer

**REQUIREMENTS:**

• Ostwald’s viscometer  
• Stop clock  
• Specific gravity bottle  
• Sample  
• Distilled water

**PRINCIPLE:**

The force of friction with one part of a liquid offering to another part of the liquid is called viscosity. For measuring the viscosity coefficient Ostwald’s viscometer method is used which is based on poiseuilles’s law. According to this law, the rate of flow of liquid through a capillary tube having viscosity coefficient (n)

Where,  
V= volume of liquid (ml)  
T= flow of time in seconds through capillary (in second) R= radius of the capillary (cm)  
ɳ= viscosity coefficient (poise)  
p= hydrostatic pressure

 Since the hydrostatic pressure (driving force) of the liquid is given by  
ɳ= dgh  
Where,  
h= height of the column d= density of the liquid

### PROCEDURE:

• Wash the relative density bottle with distilled water and dry.  
• Take the weight of the empty bottle and filled the given liquid  
• Clean and rinse the viscometer properly with distilled water  
• Fix the viscometer vertically in the stand and filled the specific amount of given unknown liquid in the viscometer  
• Time of flow recorded when the liquid starts to flow from the marks C and D above and below the bulb a. the experiment was repeated 3-4 times to get the viscosity of the given unknown liquid.

