Experiment No.

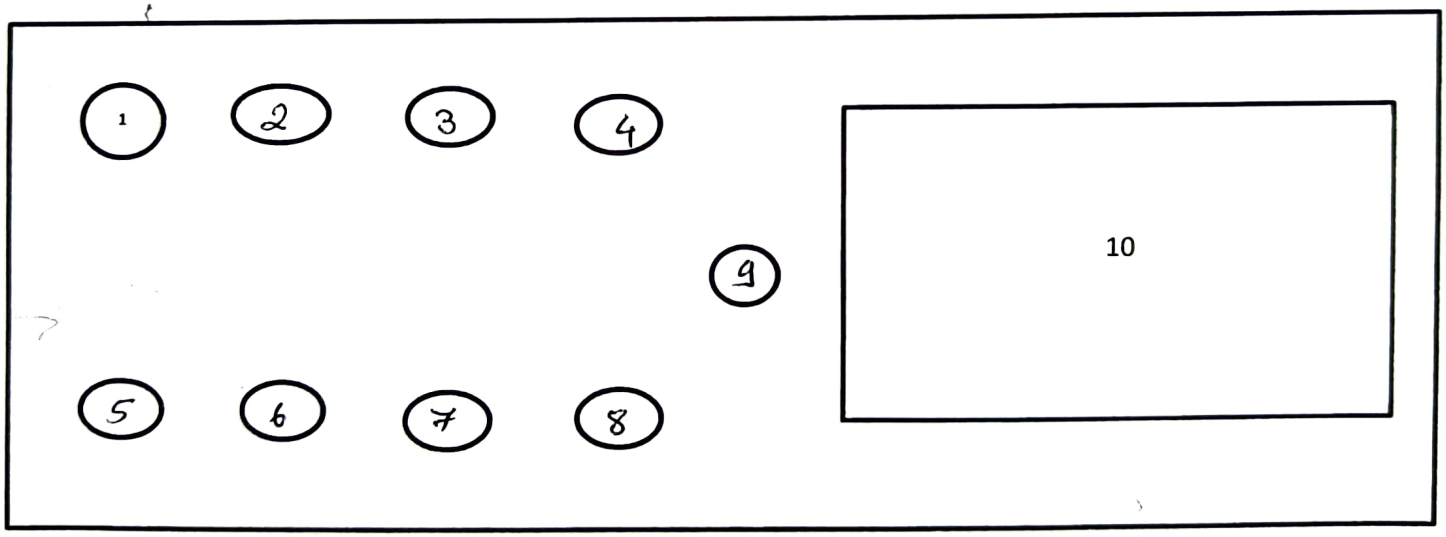
Aim: To find out break down strength of transformer oil using oil test kit.

Apparatus:

1. Oil test kit
2. sample of transformer oil

Circuit Diagram:

60 kV TRANSFORMER OIL TESTING KIT



1. Mains ON
2. Ready to test
3. H.T. off lamp
4. H.T. ON indicating lamp
5. Mains ON/off toggle S/w
6. Fuse
7. H.T. ON push button
8. H.T. off push button
9. Variac
10. KV meter.

Theory:

The transformer oil is widely used as insulating medium in transformer also it is used in cooling purposes. Hence we required to find the breakdown strength of transformer oil is essential.

In many high voltage applications the liquid dielectrics are used as insulation medium. When high voltage is applied to two electrodes containing liquid as a dielectric medium, it is possible to occur breakdown of liquid insulation. The transformer oil has permittivity (2-2.6) and high resistivity and dielectric strength of 30 kV and hence transformer oil can be used as liquid dielectric medium.

Procedure:

1. The first step is to establish a connection between from LNE of control panel to LNE of transformer.
2. Connect the main cords wire plug to control panel to the 230 V socket.
3. Switch on the main supply ON toggle switch 6 to energize the kit and so the main on indicates lamp and ready to test indicating lamp will be illuminated
4. Switch on the HT by pushing the green push button provided on control panel. This way HT ON indicating lamp will illuminated.
5. Now, slowly increase the voltage by rotating the variac knob clockwise and output kV meter will indicate the output.
6. Suppose the testing specimen is an insulating liquid will trip the supply after breakdown of the insulating medium (transformer oil).
7. Note down the reading the voltage at which it is tripped.

Observation Table:

Sr. No.	Breakdown voltage(kV)	Average voltage

Result:

Sample of the transformer oil has a breakdown voltage of ---------