EXPT. NO. 2 | NAME: | Page No.: 4 | Date: | YOUVA

Objective : Familiarity with basic circuit elements and measuring instruments.

Theory:

1) **Autotransformer** : An autotransformer is a transformer with only one winding wound on a laminated core. A part of the winding is common to both primary and secondary sides.

2) **Rheostats** : Rheostat is a type of variable resistor, whose resistence can be changed so as to change the amount of current flowing through the circuit. It has two terminals, out of which one is fixed and the other one is a moving terminal.

3) **Inductor** : An inductor is a passive electrical component that opposes sudden changes in current. It consists of a coil of wire which is designed to take advantage of the relationship between magnetism and electricity as a result of an electric current passing through coil.

Teacher's Signature:

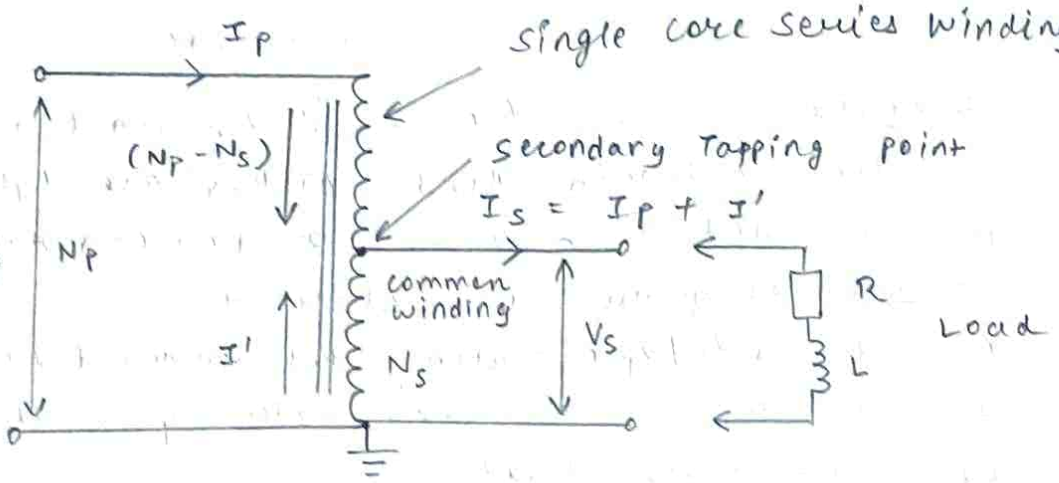

Fig : Single line diagram of single phase autotransformer with no load connection.

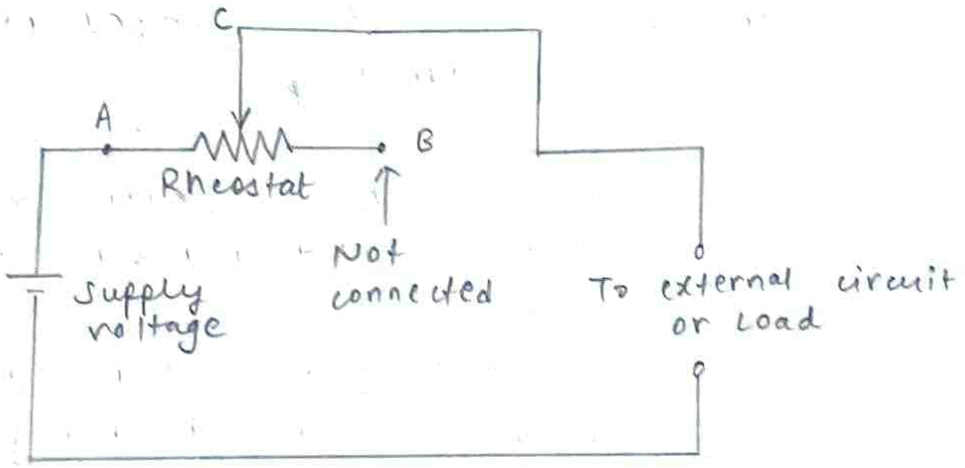

Fig : Single line diagram with connection of Rheostat

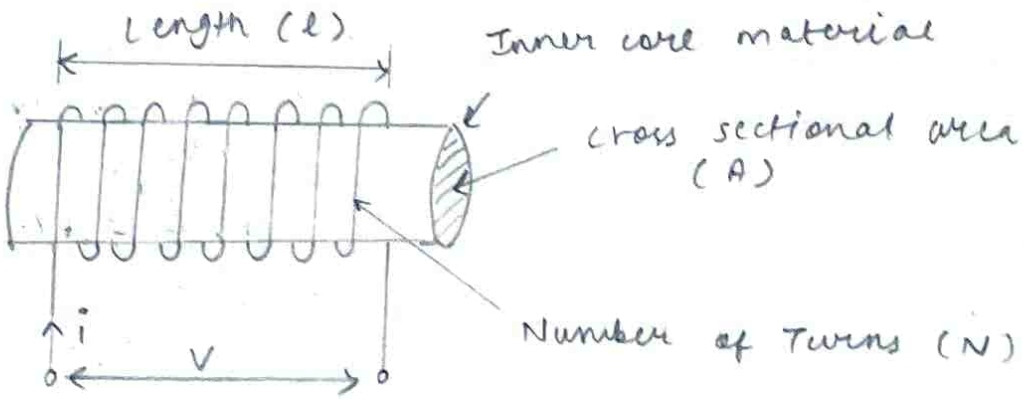

Fig : Inductor

4) **Capacitor**: capacitors are simple passive device that can store an electrical charge on their plates when connected to a voltage source. It generally consists of two or more parallel conductive plates which are not connected or touching each other, but are electrically seperated either by air or dielectric.

5) **Ammeter**: Ammeter is used for measuring current. It is connected in series with the circuit so that the whole electrons of measurand current passes through the ammeter The ammeter circuit has low resistance so that the small voltage drop occurs in the circuit.

6) **Voltmeter**: It is an instrument which measures the voltage or potential difference in volts. It is always connected in parallel with the circuit so that overall impedance of the system is equal to the impedance that the element had. Hence due to no. obstruction in circuit due to voltmeter, the voltmeter gives correct reading.

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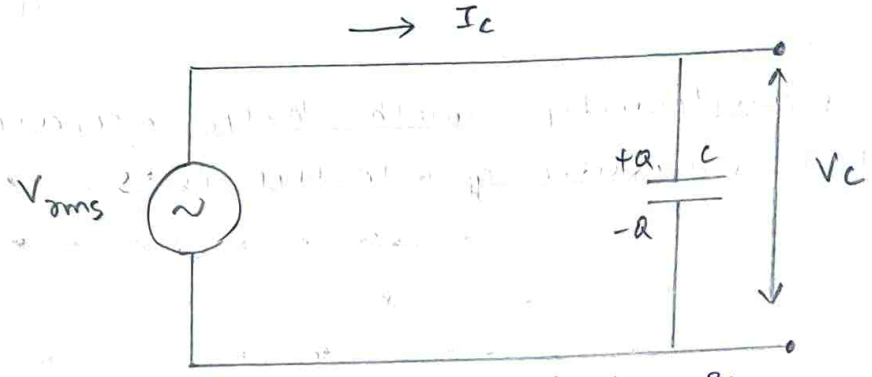

Fig:- capacitor in circuit

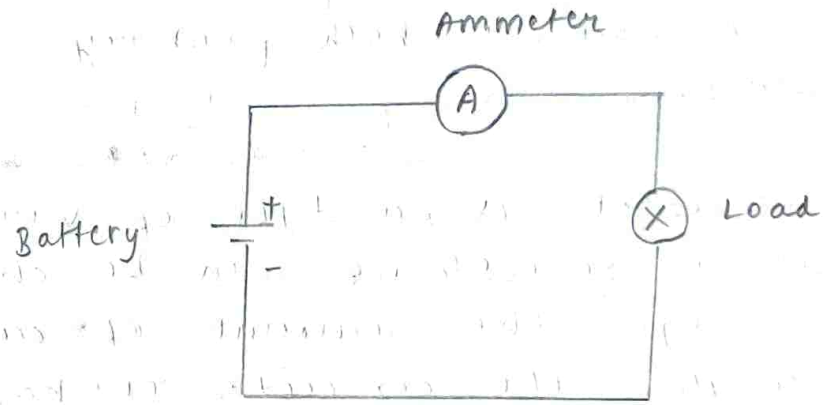

Fig:- Ammeter connection in circuit

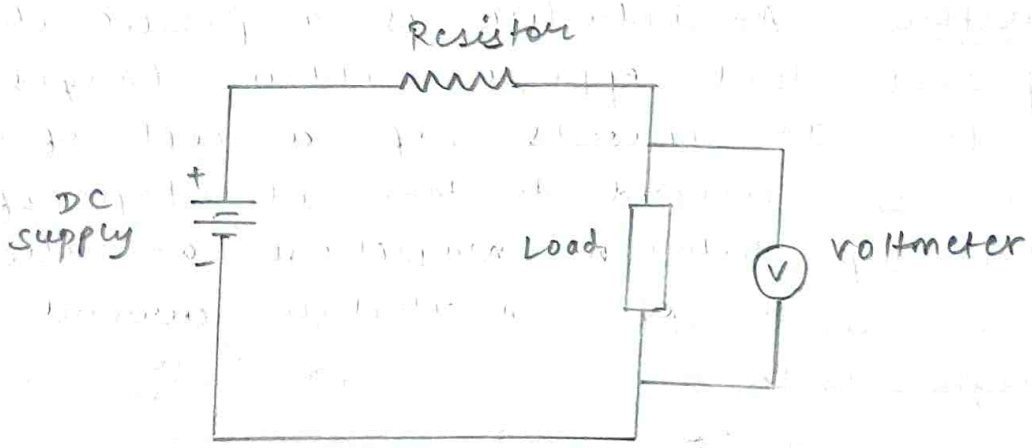

Fig:- voltmeter connection in circuit.

7) **Wattmeter:** It is an electric Instrument which is used to measure the electric power of various electric circuits. It consists of a current coil and a voltage coil. They are widely used in transmission and distribution of electric power.

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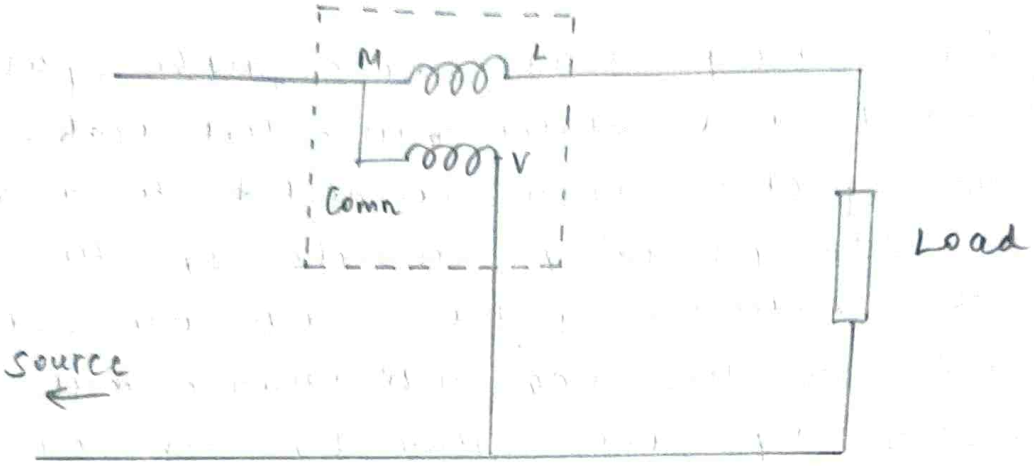

fig:- wattmeter connection in single phase circuit