

## EXPERIMENT-5

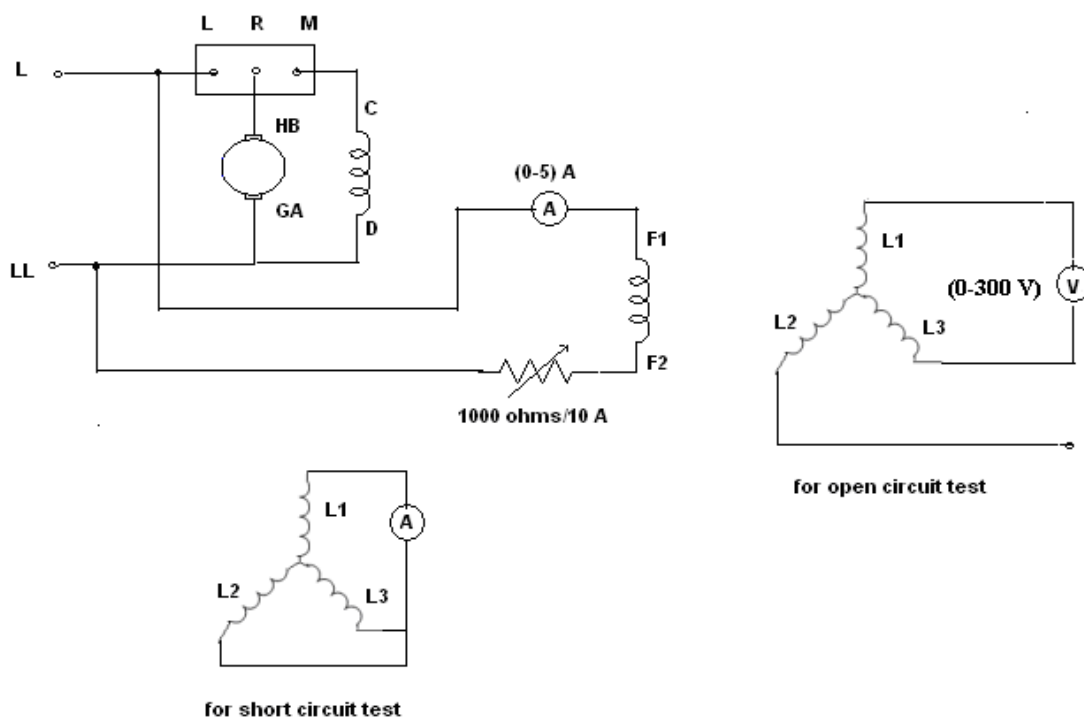
### OBJECTIVE

Regulation of a 3-phase alternator by synchronous impedance method.

### APPARATUS REQUIRED

1. Ammeter-AC-(0-10) A.
2. Ammeter-DC-(0-5) A.
3. Voltmeter-AC-(0-300) V.

### CIRCUIT DIAGRAM



### PROCEDURE

First measure the stator resistance.

#### ***Open circuit test:***

1. Make the connections as per the circuit diagram.
2. The three terminals of the alternator are opened and a voltmeter is connected between any two phases.
3. Supply is given and the motor is started with the help of starter.
4. The induced emf for zero field current is noted.
5. The field current is gradually increased and corresponding open circuit voltage is noted in each case.
6. Plot the open circuit curve between open circuit voltage and field current.

#### ***Short circuit test:***

1. The three terminals of the alternator are short circuited with an ammeter.

2. The field current is increased gradually in steps till the ammeter reads the rated full load current and corresponding short circuit current is noted.
3. Plot the short circuit curve between short circuit current and field current.

**OBSERVATIONS**

*OC test:*

S.No.	V <sub>oc</sub>	I <sub>f</sub>

*SC test:*

S.No.	I <sub>sc</sub>	I <sub>f</sub>

**PRECAUTIONS**

1. Avoid loose connections in the circuit.
2. Readings should be taken without parallax error.

**RESULTS**