EXPERIMENT 3

OBJECT :- To test the characteristics of single phase and three phase diode-bridge module under varying load condition.

APPARATUS REQUIRED:-

1. Diode bridge module
2. 1 phase supply 230V AC with neutral
3. CRO (uncarthed)

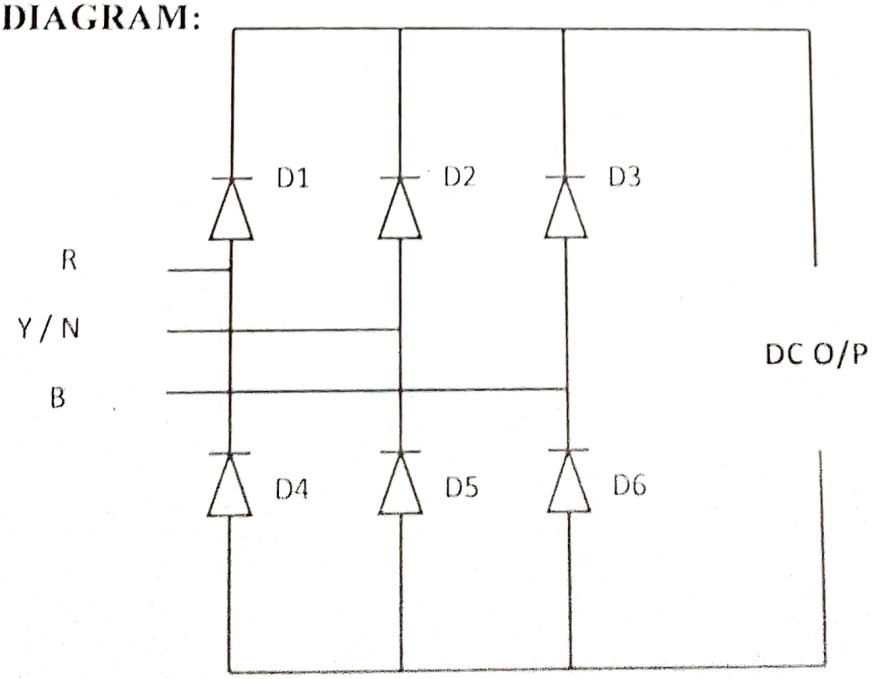
THEORY:-

Power semiconductor diodes play a significant role in power electronics circuits. A diode acts as witch to perform various functions, such as switches in rectifiers, freewheeling in switching regulators, charge reversal of capacitor.

Power diodes can be assumed as ideal switches for most applications but practical diodes differ from the ideal characteristics and have certain limitations. The power diodes are similar to p-n junction signal diodes. However, the power diodes have larger power, voltage and current handling capabilities than that of ordinary signal diodes. The frequency response (or switching speed) is low compared to signal diodes.

Diode has two terminals namely anode and cathode. When anode is made positive w.r.t cathode, the configuration is called forward bias. In forward bias up to certain positive anode voltage current does not flow. Beyond this anode current starts flowing and increases hear by slight increase in anode voltage. In reverse bias anode current is negligible.

CIRCUIT DIAGRAM:



PROCEDURE:

FOR SINGLE PHASE

1. Connect the live wire or R-ph to T1.(REMOVE THE Y AND B PHASE).
2. Connect the neutral to T2.
3. Connect the load across o/p.(lamp load)
4. Switch On power to rectifier unit, (1 phase supply switch)
5. Observe o/p voltage waveform across T4 w.r.t. T5. on C.R.O. and note down o/p voltage
6. Switch OFF supply of unit

CAUTION :

1) **Use unearthed CRO while observing waveforms of high output voltage. For low output voltage there is no need of unearthed CRO.**