EXPERIMENT:

AIM: Test the bridge rectifier with capacitor filter using CRO.

APPARATUS: Rectifier Trainer Kit, Power supply, connecting probes.

CIRCUIT DIAGRAM:

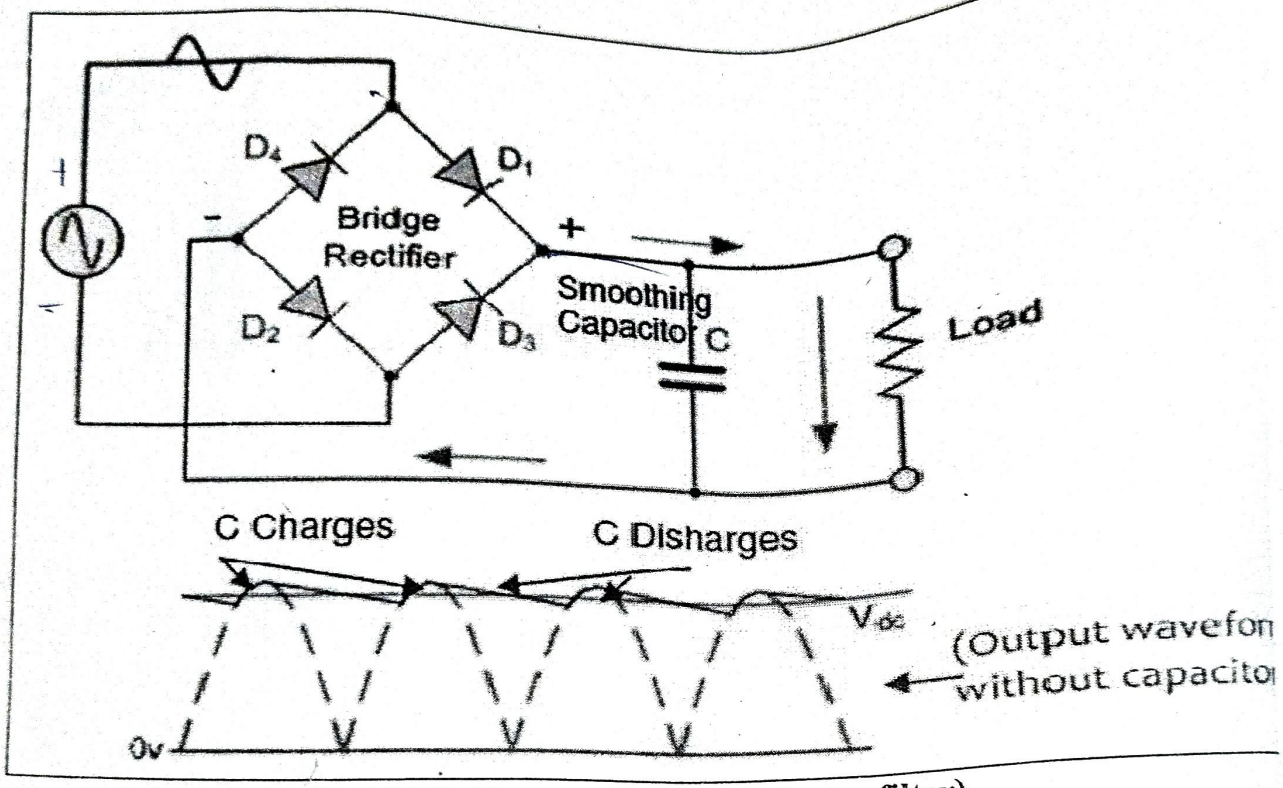

Fig 16.1 (bridge reactifier with inductor filter)

THEORY:

The need for a centre tapped power transformer is eliminated in the bridge rectifier. It contains four diodes D1, D2, D3 and D4 connected to form bridge as shown in Fig.. The a.c. supply to be rectified is applied to the diagonally opposite ends of the bridge through the transformer. Between other two ends of the bridge, the load resistance R_L is connected.

During the positive half-cycle of secondary voltage, the end P of the secondary winding becomes positive and end Q negative. This makes diodes D1 and D2 forward biased while diodes D3 and D4 are reverse biased. Therefore, only diodes D1 and D2 conduct. These two diodes will be in series through the load R_L as shown in Fig.

During the negative half-cycle of secondary voltage, end P becomes negative and end Q positive. This makes diodes D3 and D4 forward biased whereas diodes D1 and D2 are reverse biased. Therefore, only diodes D3 and D4 conduct. These two diodes will be in series through the load RL as shown in Fig.

Inductor L placed across the rectifier output in series with load R_L. The pulsating direct current of the rectifier is pass through the inductor. The choke offers high opposition to passage of a.c. component but negligible opposition to the d.c. component. The result is that most of the a.c. component appears across the choke while whole of d.c. component passes through the choke on its way to load.

PROCEDURE:

1. Connect the circuit as per circuit diagram (For bridge Rectifier)
2. Switch on the main supply.
3. Record the values in different columns of observation table.
4. Observe the Wave forms on CRO for input signal as well as across output side.

CONCLUSION: