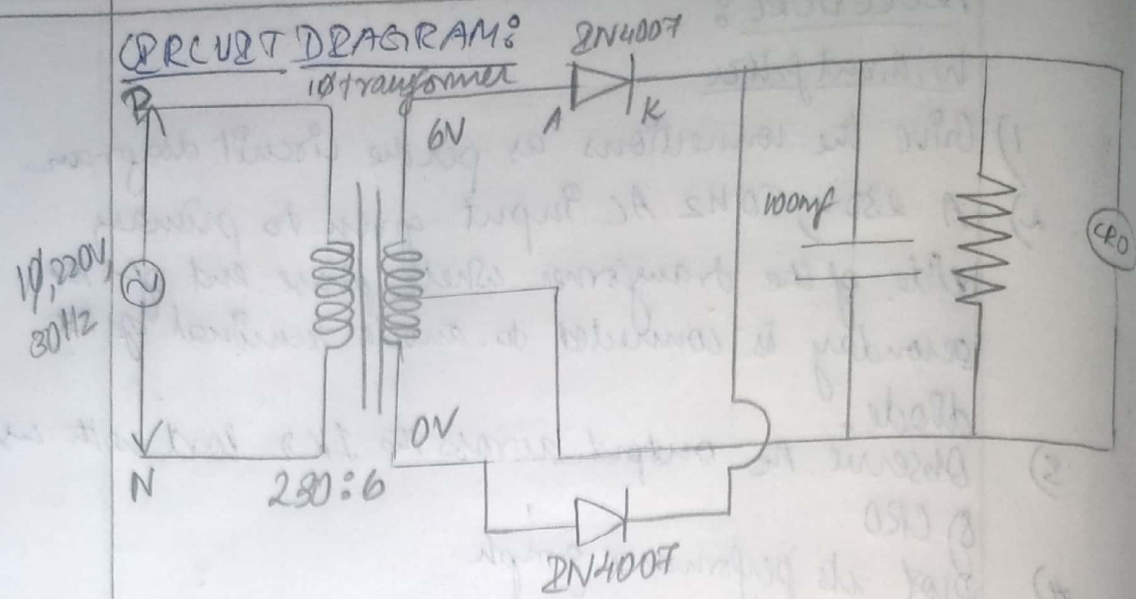
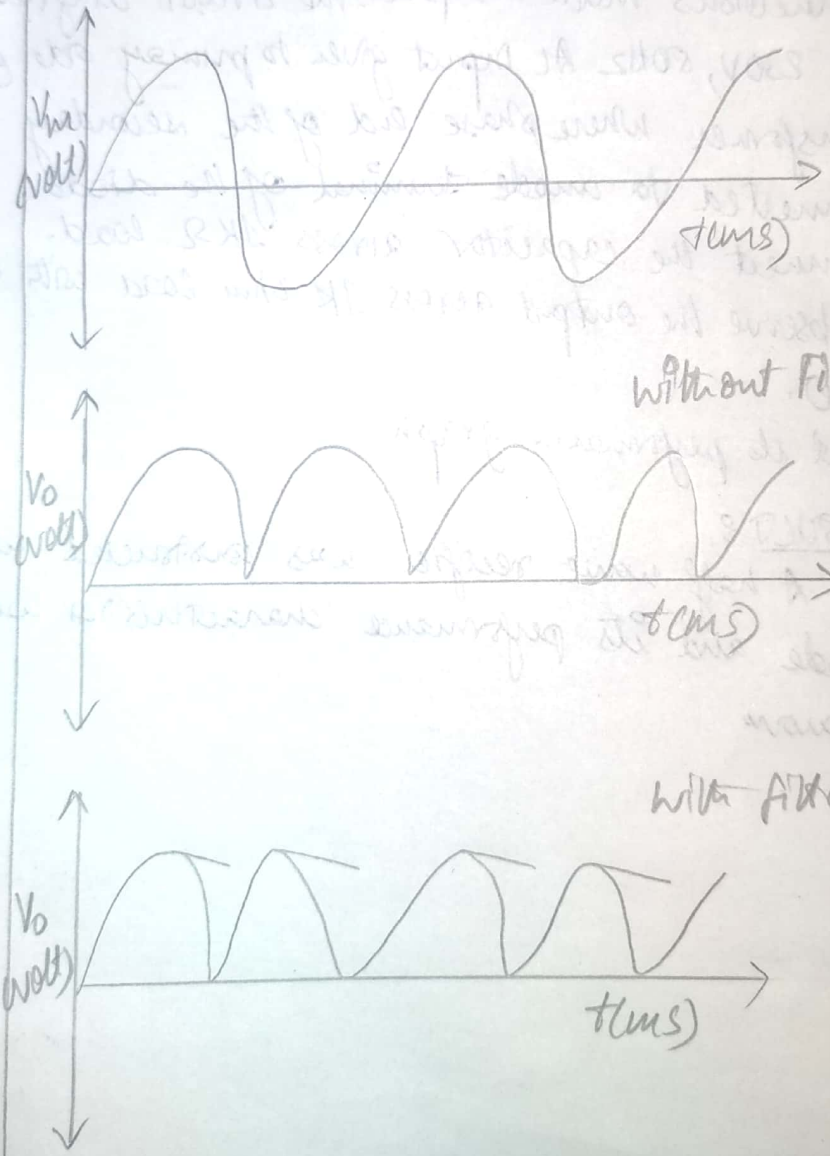
CIRCUIT DIAGRAM:



MODEL GRAPH:



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Expt 09

SINGLE PHASE FULL-WAVE RECTIFIER:

AIM:
To construct a single phase full wave rectifier using diode and draw its performance characteristics.

APPARATUS REQUIRED:

S.No	Name	Range	Qty
01)	Transformer	230/(6-0-6)V	1
02)	R.P.S	(0-30)V	2

COMPONENTS REQUIRED:

S.No	Name	Range	Qty
01)	Diode	IN4007	2
02)	Resistor	1KΩ	1
03)	Bread Board	-	1
04)	Capacitor	100μF	1
05)	CRO	1Hz - 20MHz	1
06)	Connecting wire	-	Req.

FORMULA:
Without Filter:
i) $V_{rms} = V_m/\sqrt{2}$
ii) $V_{dc} = 2V_m$
iii) Ripple factor $= \sqrt{\left(\frac{V_{rms}}{V_{dc}}\right)^2 - 1}$
iv) Efficiency $= (V_{dc}/V_{rms})^2 \times 100$

With Filter:
i) $V_{rms} = V_{rpp}/2\sqrt{3}$
ii) $V_{dc} = V_m - V_{rpp}$
iii) Ripple factor $= V_{rms}/V_{dc}$

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PROCEDURE:

Without filter:

1) Give the connections as per the circuit diagram.
2) A 230V, 50Hz AC input given to primary side of the transformer where the phases end of the secondary is connected to anode terminal of the diode.
3) observe the output across 1K ohm load with use of CRO.
4) Plot its performance graph.

With filter:

1) Give the connections as per the circuit diagram.
2) A 230V, 50Hz AC input given to primary side of the Transformer where the phases end of secondary side is connected to anode terminal of the diode.
3) connect the capacitor across the load.
4) Observe the output across the 1K ohm load with use of CRO.
5) Plot its performance graph

RESULT:

A full wave rectifier was constructed using diodes and its performance characteristics were drawn.

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