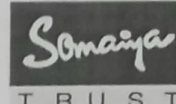**SOMAIYA**
VIDYAVIHAR UNIVERSITY
K J Somaiya College of Engineering

K. J. Somaiya College of Engineering, Mumbai-77
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Department of Sciences and Humanities

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Course Name:	Elements of Electrical and Electronics Engineering Laboratory	Semester:	I/II
Date of Performance:	/ /20--	Batch No:	C-5(3)
Student Name:	Sai Shivani Maddala.	Roll No:	60
Faculty Sign & Date:		Grade/Marks:	/ 20

Experiment No: 2

Title: Mobile Battery Charger

Aim and Objective of the Experiment:

- To understand the working of Mobile Battery Charging Circuit
- To implement the circuit of Mobile Battery charger on Breadboard and observe the waveforms at various points (Input and output Waveforms for Bridge Rectifier) and measure the output voltage

COs to be achieved:

CO1: Analyze resistive networks excited by DC sources using various network theorems.
CO2: Demonstrate and analyze steady state response of single phase and three phase circuits
**CO3:** Understand principles and working of AC and DC machines with their applications.
CO4: Explain rectifier-filter circuits using PN junction diode and voltage regulator circuits using Zener diode

Requirements:

Step-down Transformer (6V-0-6V), Diodes(1N4007), voltage regulator IC 7805, Resistor, Capacitors, CRO, Digital Multimeter (DMM), breadboard, connecting wires, Micro USB cable, etc.
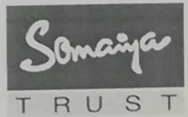
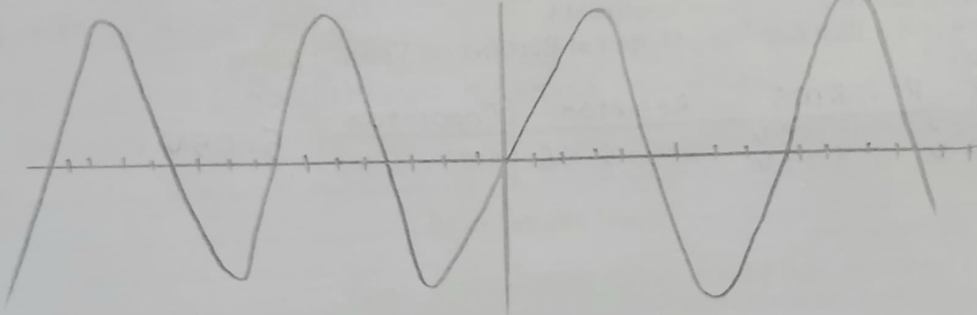**Circuit Diagram:**
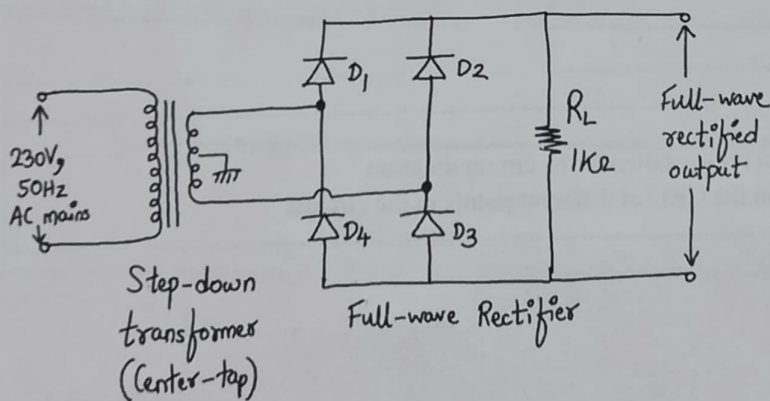
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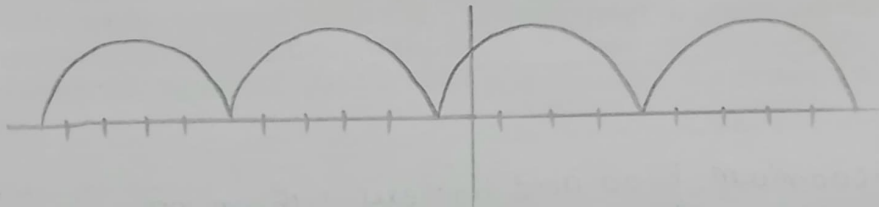**Department of Sciences and Humanities**

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Output waveforms observed on CRO:

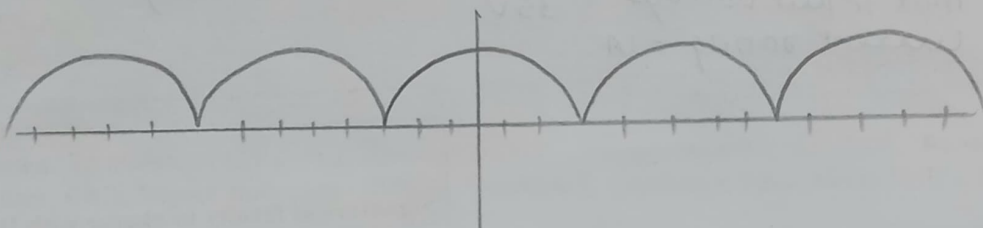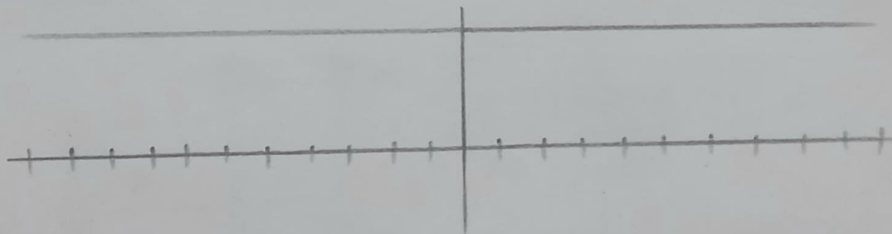### 1. Plot secondary voltage across transformer versus time

2. Plot Rectifier output versus time

3. Plot Capacitor filter output versus time

4. Plot output of Voltage regulator versus time

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Observation Table:

Vin (p-p & rms) (input of Rectifier in Volts)		Vout(peak) Output of Rectifier (in Volts)		DC output of 7805 (in Volts)
P – P	RMS	Resistor	Capacitor	5.05U
22.8V	8.09 U	RMS = 6.56	RMS = 6.49	
23 V	8.13 V			

Post Lab Subjective:

1. State commonly used types of mobile phone batteries
2. Explain how to maximize Battery Performance/ Battery life of your mobile phone?
3. Write important specifications of Voltage regulator IC 7805
(You can attach data sheet of IC 7805)

Conclusion:

1. nickel cadmium, head acid battery, lithium ion
2. screen turns off sooner, reduce screen brightness, turn dark theme, turn on adaptive battery
3. max input voltage = 35V
   current rating = 1A.

Signature of faculty in-charge with Date: