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| **Course Name:** | **Elements of Electrical and Electronics Engineering Laboratory** | **Semester:** | **I/II** |
| **Date of Performance:** | **/ /20--** | **Batch No:** |  |
| **Student Name:** |  | **Roll No:** |  |
| **Faculty Sign & Date:** |  | **Grade/Marks:** | **/ 20** |

**Experiment No: 2**

**Title:** **Mobile Battery Charger**

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| **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 |

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| **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 |

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| **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. |

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| **Circuit Diagram:** |

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| **Stepwise-Procedure:** |
| 1. Design circuit and connect it as shown in the circuit diagram 2. Observe the waveform on the CRO at different points in the circuits. |

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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)** | |  |  |  | |
| **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) |

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| **Conclusion:** |
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| **Signature of faculty in-charge with Date:** |