AMERICAN INTERNATIONAL UNIVERSITY-BANGLADESH (AIUB)

Faculty of Engineering

Course Name	**Engineering Shop**	**Course Code**	**EEE3110**	**Semester**	**Summer 2021-2022**	**Section**	**D**
Faculty	**Nuzat Nuary Alam**						
Assignment	**Project Proposal**					**Group No**	**01**

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TITLE: Working of Lead Acid Battery Charger Circuit

Introduction:

Lead Acid Batteries are one of the oldest rechargeable batteries available today. Due to their low cost (for the capacity) compared to newer battery technologies and the ability to provide high surge currents (an important factor in automobiles), Lead Acid Batteries are still the preferred choice of batteries in almost all vehicles.The main concern with any battery is it discharges over time and must be recharged so that it can provide the necessary voltage and current.

Literature Review:

The circuit diagram of the Lead Acid Battery Charger is shown in figure 01. To charge a battery from AC we need a step down transformer, a rectifier, filtering circuit, regulator to maintain the constant voltage. Then we can give the regulated voltage to the battery to charge it. Think if you have only DC voltage and charge the lead acid battery, we can do it by giving that DC voltage to a DC-DC voltage regulator and some extra circuitry before giving to the lead acid battery. Car battery is also a lead acid battery.

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Design Methodology & Working Process:

For calibrating the circuit, we need a variable DC Power Supply (a bench power supply). Set the voltage in your bench power supply to 14.5V and connect it to CB+ and CB- of the Circuit. Initially, set the jumper between positions 2 and 3 for calibrating. Now slowly turn the 50KΩ Potentiometer until the "Charged" LED turns ON. Now disconnect the power supply and connect the jumper between 1 and 2. Your circuit is ready as all you need is a DC (or AC) supply of 18V.The 14.5V we set in the calibration is called the Tripping Point. When the Tripping point is set to 14.5V, the battery will charge for about 75% of its capacity.If you want to charge 100%, then set the tripping point to ≈16V by removing the 7815 regulator and directly supplying 18V DC, but this is not recommended.

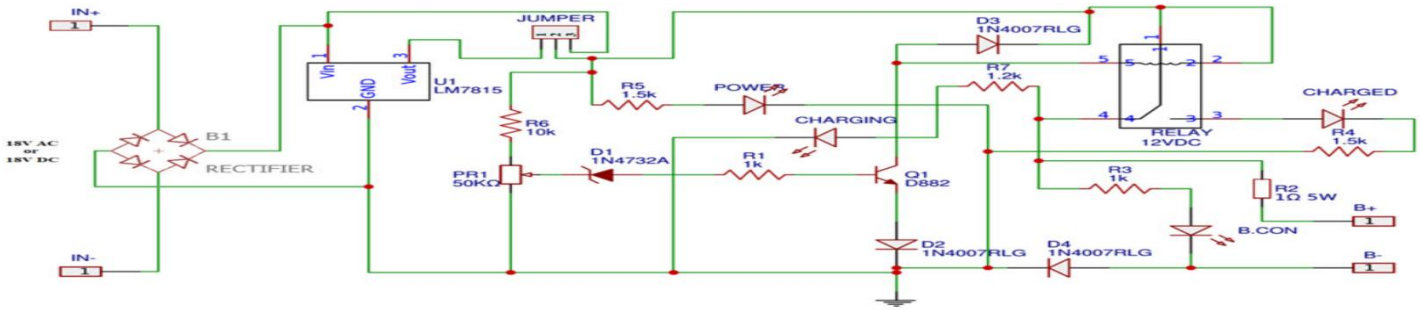

Fig: Circuit Diagram

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Timeline:

Date Task	July 06-11	July 11-17	July 17-23	July 23-29	July 29-August-06	August 06-11
Topic Selection						
Preparing Project Repots and Submit						
Optimizing Circuits and Software work						
Project Report Writing						
Submission of Project And Report						
Attending Final And Presenting the Project						

Under the Supervision of
Nuzat Nuary Alam
Faculty of Engineering
According to the Engineering Shop Laboratory class and AIUB academic calender