LESSON PLAN

School: SMAN 2 Cimahi

Name of the teacher:- Alemneh Assefa

Subject: Physics
Grade for which the course delivered__10
Title of the unit:- Electrodynamics
Lesson Topic:- Ohm's law and Electric resistance.
Minimum learning competency/ Standard:-

Date: 14/01/2013
Time duration 90 minutes

- Students formulate electrical quantities in simple closed loop.
- Students use electrical measuring tools.

Specific objective of the lesson (Indicators):- At the end of this lesson learners will be able to:-

- State the full statement of Ohm's law.
- Differentiate ohmic and non-ohmic materials based on the relation between voltage and current data from the experiment.
- Determine resistance of Ohmic materials based on the graph of voltage versus current.
- Apply Ohm's law to solve related problems.

Learning Method; Experiment
Questions to Investigate (discovery lesson or inquiry activity):

- What is the relationship between direct current through devices (bulb and diode) and the potential difference across ends of these devices?
- Does ohm's law work for all devices?

Materials and Equipments

- Connecting wires (10 branch connecting wires & 5 connecting wires)
- Ammeter (5)

- Bulb and its stand (5)
- Diode (5)
- Voltmeter (5)
- Power supply (5)

Procedures

1. Construct a circuit containing dc low voltage supply, resistor, voltmeter and ammeter based on **circuit diagram** provided by your teacher.
2. Turn the power supply ON with the voltage control initially set to **zero**. Using the voltage adjustment control, increase the current through the resistor to 0.1A. Read and record the voltage on the **table 1**.
3. Repeat step 2 for 0.2A, 0.3A, 0.4A, 0.5A and 0.6A
4. Please repeat procedure **2** and **3 in experiment A** by substituting a **diode** in place of the bulb. Record your data on **table2**

The Steps on Learning Activity

Levels/stages	Teacher's activities	Time	Learner's/Student's/ activities
Introduction	❖ Introducing the lesson. ❖ Show simulation of simple circuit and I ask questions like. • What does flow through the wire? • Can the bulb light up without battery? ❖ What is the relationship between current and voltage? **Let us conduct experiment** ❖ I show the block diagram of Ohm's circuit. ❖ Showing students how to read ammeter and voltmeter ❖ Grouping students to conduct experiments ❖ I give the detailed procedures to students	15'	❖ Give answer to the oral questions ❖ Asking question ❖ Forming group

Implimentation	❖ Assisting students while they conduct experiments. ❖ Allow students to present their findings. ❖ Giving corrections and make conclusion.	45’	❖ **Construct** the real circuit. ❖ **Reading and recording** data on the data table. ❖ **Drawing** voltage versus current graph. ❖ Writing their **conclusion**. ❖ State Ohm’s law ❖ **Present** their findings ❖ **Applying** Ohm’s law to solve some problems.
Stabilization/summery/	❖ Could you summarize the lesson?	10’	Summarizes the lesson
Assessment	After summery, I give worksheet for each student.	20’	Give answers to questions and solve for problems given on the **TEST**