

Exam Review: Electricity

Major Topics:

Make point form notes to summarize the following:

1. Electrostatics: charging by friction, conduction and induction
2. Basic definitions:
 - conductor
 - insulator
 - current (unit, measuring device)
 - voltage (unit, measuring device)
 - resistance(unit)
 - series and parallel circuits
3. Basic circuit symbols
4. Drawing circuits given instructions
5. Solving problems using given formulas.
6. Kirchhoff Law Problems

Sample Problems:

1. 35 C of charge passes through a toaster in 14 s. Calculate the current.
2. What is the potential difference across a $15\ \Omega$ that draws a current of 4.0 A.
3. Calculate the current through a 5 V light bulb that has a resistance of $1.3\ \Omega$.
4. a. What current runs through a 100 W light bulb connected to household wiring?
b. What is the resistance of the bulb?
5. Draw a circuit with a battery and 3 light bulbs. Bulbs A and B are in series, and bulb C is parallel to them. A voltmeter measures the voltage across bulb A and an ammeter measures the current through bulb C. A switch turns off the whole circuit simultaneously.

Answers:

1. 2.5 A 2. 60 V 3. 3.8 I 4. 0.83 A, $144\ \Omega$