BAE CHAPTER 2 NOTES BASIC ELECTRONICS ELECTRICITY

1/17/18 WEEK TWO LESSON

ROOM MEZZAINE ROOM

INSTRUCTOR: LEONARD

OBSERVATION LESSON SIGNAL FLOW DAY SESSION

OBSERVATION LESSON PROTOOLS BASICS AND COMMAND OPTIONS.

ADD++ PRO TOOLS COMAND TIPS

DAY TWO

DUBWAY STUDIO BLUE ROOM

INSTRUCTOR: ROHAN

OBSERVATION LESSON ELECTRONIC CHAIN OF FLOW Microphone

Lesson notes

Atom

PRotons + Nuetron - and nuetron =

Conducters = Gold, copper , silver

Insulators = rubber, plastic, and glass

 resistance + reactance = impedance http://electronics.stackexchange.com/questions/21791/resistance-vs-impedance resistance is usually about d/c voltage and impedance concerns a/c voltage.

**Copper** is a [chemical element](https://en.wikipedia.org/wiki/Chemical_element%22%20%5Co%20%22Chemical%20element) with symbol **Cu** (from [Latin](https://en.wikipedia.org/wiki/Latin_language%22%20%5Co%20%22Latin%20language): *cuprum*) and [atomic number](https://en.wikipedia.org/wiki/Atomic_number%22%20%5Co%20%22Atomic%20number) 29. It is a soft, malleable, and [ductile](https://en.wikipedia.org/wiki/Ductility%22%20%5Co%20%22Ductility) metal with very high [thermal](https://en.wikipedia.org/wiki/Thermal_conductivity%22%20%5Co%20%22Thermal%20conductivity) and [electrical conductivity](https://en.wikipedia.org/wiki/Electrical_conductivity%22%20%5Co%20%22Electrical%20conductivity). A freshly exposed surface of pure copper has a reddish-orange color. Copper is used as a conductor of heat and electricity, as a [building material](https://en.wikipedia.org/wiki/Building_material%22%20%5Cl%20%22Metal%22%20%5Co%20%22Building%20material), and as a constituent of various metal [alloys](https://en.wikipedia.org/wiki/Alloy%22%20%5Co%20%22Alloy), such as [sterling silver](https://en.wikipedia.org/wiki/Sterling_silver%22%20%5Co%20%22Sterling%20silver) used in [jewelry](https://en.wikipedia.org/wiki/Jewelry%22%20%5Co%20%22Jewelry), [cupronickel](https://en.wikipedia.org/wiki/Cupronickel%22%20%5Co%20%22Cupronickel) used to make marine hardware and [coins](https://en.wikipedia.org/wiki/Coins%22%20%5Co%20%22Coins), and [constantan](https://en.wikipedia.org/wiki/Constantan%22%20%5Co%20%22Constantan) used in [strain gauges](https://en.wikipedia.org/wiki/Strain_gauge%22%20%5Co%20%22Strain%20gauge) and [thermocouples](https://en.wikipedia.org/wiki/Thermocouples%22%20%5Co%20%22Thermocouples) for temperature measurement

resistance causes friction causes heat

Electronic circuit - device that provides a path for electrons to flow. Voltage - measurement of the amount of electromotive force. The higher the amount of pressure, the higher the voltage. A single volt is a unit of measure similar to a dB. It's not an absolute value but rather the measure of a difference in electrical potential.

voltage is a measure of electromotive force, not an absolute value but the difference in electrical potential

Current - how fast the flow of electrons is (how fast the electricity is moving). Current is measured in amperes (amps). The ampere is a measure of the amount of electric charge passing a point in an electric circuit per unit of time

current is measured in amperes

3 basic measurements of electricty are: voltage (V), current (I), and resistance (R). The fundamental formula for calculating all of these is called Ohm's Law: V=IR (voltage = current times resistance)

air molecules aren't very conductive. Air is composed of mostly nitrogen, oxygen, argon, and traces of other gases. In the case of lightning, which is a "short circuit" between static charge buildup in cloud (positive charge) and the ground. Because of the large voltage difference (tens or hundreds of thousands of volts), air molecules can "polarize" to conduct electrical current (lightning) given a high enough voltage difference.

too much friction from the flow of electricity causes too much heat and destroy's the bridge causing a short circuit

modern circuits are printed circuit board versus copper wire.

analog = 2 categories

series = chain gang

parrellel= equal amount

Electronic Circuits = 2 types analog and digital

A digital circuit is capable of transmitting binary values in the form of an on or an off signal. Binary number systems have two values: 1 and 0. In a digital circuit, 1 is usually represented with a positive voltage (on) & 0 is represented with zero voltage

analog circuit transmits voltage digital circuit send information 1 positive and 0 negative

Direct Current - flows electrons in one directions. Typically found in batteries, solar panels & low-voltage applications. Alternating Current (AC Power) - flows in both directions & can change directions 50 to 60 times per second. This type of power is found in our homes (wall sockets).

us 120V to 60sec Euro 220V 10 50sec . Like 60 mph to 100 km

Energy is created in multiple ways. Thermal energy is created from the heat moving turbines. Nuclear power splits atoms & harnesses the energy that is produced. Fossil fuel energy utilizes the energy produced from utilities gathered from the earth's fossil fuels. All of these energy types produce currents at around 25,000 volts. Electricity loses energy when being transferred. Long distance electricity must be done at high voltages.

Electric Current Flow Path Power Generation Plant = reduce voltage= feeder lines or circuit breakers = neighborhoods / lateral lines = smaller areas to transformer = homes commercial facilities= transformer =4 homes. Electric Connection at House . Ac Power through outlets.

Review missed

2. \_\_\_\_\_\_\_\_\_\_\_\_\_ current is current that flows in both directions.

Alternating

1. Electricity loses energy over long distance so low voltage transmissions help to extend voltage over a long distance.

 FALSE