

Electricity Test Review

Definitions; *Series Circuit, Parallel Circuit, Equivalent Resistance, Fuse, Circuit Breaker, kilowatt hour, load, short circuit, dry cell, wet cell, fuel cells, solar cells, fossil fuels, thermo-electric, nuclear fission, transformer, alternating current, direct current, coulomb, amp, volt, joule, work, power, watt, charge, matter, electric current, battery, conductor, insulator, circuit, resistor, ohms, circuit, switch, load*

What is the formula for calculating volts?

What could you compare a series circuit to?

What is the formula for calculating a watt?

What flows in wires?

How do we measure charge?

What is the formula for calculating current?

What does it mean if there is a current of 6 amps?

How much work can one coulomb of charge do in a 10 volt battery?

Explain how magnets can be used to model the flow of electrons in a circuit.

Which end of the battery do the electrons leave from?

What is the most common metal used in wires?

Compare a battery to a hotdog.

What do all plugs have in common?

Explain what a volt is using the example from class. Example: Joules per Ahmed.

Explain what a watt is using the example from class. Example: Steve is a one watt light bulb.

How are the electrons different from the cars on a racetrack?

What does an ammeter do?

What could you compare a parallel circuit to?

What is some electrical energy always converted to?

Where do all the charges return to?

A washing machine has a power rating of 512W. If one cycle lasts 30 min, how much energy does the machine use per cycle?

Make a circuit diagram of a series circuit consisting of three light bulbs, a switch, and a battery.

Make a circuit diagram starting with a battery and a switch. Then, add three light bulbs in parallel with each other.

Why are homes wired using parallel circuits?

How much voltage do power companies supply your home with?

What is the potential difference across each load in a parallel circuit?

What is one serious problem with parallel circuits?

What happens when current increases?

What do household circuits always have to prevent fires from happening?

Where are fuses most often found?

What happens to the current in a parallel circuit each time you add a resistor to another branch?

What is the formula for calculating resistance?

Where do power lines from the nearest transformer connect to before they enter your home?

What happens every time you turn on a load in your home?

A family uses $4000\text{kW}\cdot\text{h}$ of electrical energy in a three-month period. If the energy costs 1 RMB per $\text{kW}\cdot\text{h}$, what is the electric bill for the three-month period?

What does every house, school and office building have?

What happens if something trips one breaker?

What brings power into the house?

Why are many plugs 45cm above the ground?

What is most of the energy used to power standard light bulbs converted into?

Why do light bulbs burn out?

List one positive and one negative of a fluorescent light bulb.

A CD player that was on for 1 hour used $360\,000\text{ J}$ of electrical energy.

What is its power in watts?

If a light bulb uses $30\,000\text{ J}$ of electrical energy and emits 900 J of light energy, what is the percent efficiency of the light bulb?

What should you do when you unplug a device from an electrical outlet?

What is one safety consideration to make when using an extension cord?

What are the advantages of dry cells over wet cells?

How do you recharge a dead cell?

What is a hydro-electric plant?

Explain how a hydro-electric works.

Explain how the water cycle works.

Explain how a coal burning plant works.

How did fossil fuels get their energy?

What is one benefit of hydro-electric plants?

What are two disadvantages of hydro-electric plants?

How do fossil fuels release their energy?

Where are hydro-electric and thermonuclear plants usually located? What is a consequence of this location?

What is a voltmeter used for?

What is a disadvantage of direct current in transmitting electricity?

What is an advantage of using alternating current?

If 300 C of charge pass a point in a conductor in 6 minutes, what is the current through that point in the conductor?

Which current will be greater, the current passing through an electric iron or the current passing through an electric razor, when each is plugged into a 120V outlet?

If 42J of chemical energy in a battery places 7.0 C of negative charge at the negative terminal, leaving a deficit at the positive terminal, what is the potential difference between the negative and positive terminals of the battery?

What is the formula for electrical resistance?

What is the symbol for the ohm?

What is the potential difference across an electric water heater element that has a resistance of 32 ohms when the current through it is 6.8 A?

A light bulb passes a current of 0.83A when the potential difference across the bulb is 120V. What is the electrical resistance of the bulb in ohms?

List and explain 3 clean methods of producing electricity.

What are 3 characteristics of a wire that affect its electrical resistance?

As more light bulbs are connected in series with the first, what happens to the current in the circuit and the potential difference across each resistor?

What is the relationship between the potential difference across the three resistors in series and the potential difference across the batteries?

What happens to the brightness of each bulb as you make additions?

Write a word equation showing the relationship between the current leaving the source and the current through each resistor.

Write a word equation showing the relationship between the potential difference across the source, and the potential difference across the resistor.

What happens to the current through the source as current is allowed to pass through one, then two, and finally three resistors that are connected in parallel?

What relationship can you find between the current through individual light bulbs in a parallel circuit and the current that passes through all there light bulbs?

Compare the potential difference across the individual light bulbs and across the source in a parallel circuit. What do you notice about these values?

Write a word equation showing the relationship between the current through the battery and sum of the currents in the branches.

Provide an explanation for the relationship between the potential differences across the individual light bulbs and across the battery in a parallel circuit.