SOZ BY keenplify (WEEK 1-10)

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In which way do electric fields interact?
A: like charges repel

A repulsive force exists between which two particles?
A: Two electrons

Which two particles are attracted to each other?
A: A proton and an electron

Electric Field strength depends on what?
A: charge and distance

How is the electric force between two charges affected when both of the charges are cut in half?
A: decreases four times

Electric charges exert which kind of force?
A: a field force

In a neutral atom, there are more of which charge?
A: there are equal amounts of both charges

Electric field lines are _____ to the electric field vector at any point.
A: tangent

According to Coulomb's Law, the amount of electric force depends on which two things?
A: the charge on each of the two particles and the distance between them

In an atom, what are the negative charges called and where are they found?
A: electrons are found outside the nucleus

The electric flux Φ through a surface_____.
A: is the amount of electric field piercing the surface

The area vector for a flat surface_____.
A: is perpendicular to the surface and has a magnitude equal to the area of the surface.

A point particle with charge q is placed inside a cube but not at its center. The electric flux through any one side of the cube_____.

A: is q/6ε0

A charge is sitting outside a closed surface. The net flux is_____.
A: zero because it passes through two surfaces

Which quantity and unit are correctly paired?
A: electric field strength and N/C

When is the flux on a surface zero?
A: When it is parallel to an electric field

A cylindrical wastepaper basket with a 0.15-m radius opening is in a uniform electric field of 300 N/C, perpendicular to the opening. The total flux sides and bottom is_____
A: 21 N×m2m2/C

The flux of the electric field (24 N/C)i + (30 N/C)j + (16 N/C)k through a 2.0 m2m2 portion of the yz plane is_____.
A: 48 N × m2m2/C

Electric potential _____ as distance increases.
A: Decreases

The direction of electric field lines shows the_____.
A: direction of the force on a test positive charge.

Electric field lines between two oppositely charged parallel metal plates will be _____.
A: straight lines, evenly spaced

As a proton moves in the direction the electric field lines_____
A: it is moving from high potential to low potential and losing electric potential energy.

If two negative charges are held close together and then released, the charges will _____.
A: accelerate away from each other

_____ is stored energy.
A: Potential Energy

The energy that is stored in a capacitor is in the form of _____.
A: the electric field between its plates.

If two balloons have the same charge, what will happen if you place them close to each other?
A: They will push each other away.

Electric potential and electric potential energy are NOT the same.
A: True

Two parallel plates are oppositely charged. The right plate is negative and the left plate is positive. In which direction does the electric field point?
A: to the right

During discharging a capacitor through a _____.
A: the current in the circuit decreases exponentially with time

How is the capacitance (C) of a parallel-plate capacitor affected by the charge on the plates?
A: C is vanished when there are plates

How is the capacitance of a parallel-plate capacitor affected by the potential difference across the capacitor?
A: C depend on the potential difference across the capacitor

The energy stored in the capacitor can be find by using this equation EXCEPT_____.
A: $1/2RC^2$

How is the capacitance of a parallel-plate capacitor affected by the area of each plate?
A: C is inversely proportional to the area A of each plate

When capacitors is arrange in series (3 capacitors), the equivalent capacitance C is_____.
A: $C=QV_1+QV_2+QV_3$

When capacitors in parallel (3 capacitors), the equivalent capacitance is_____.
A: $C=C_1+C_2+C_3$

How is the capacitance of a parallel-plate capacitor affected by filling the space between the plates with an insulator?
A: C stable when the space between the plates is filled with an insulator, $\varepsilon r > 1$

How is the capacitance of a parallel-plate capacitor affected by the distance between the plates?
A: C is partially proportional to the area A of each plate

During charging a capacitor through a _____.
A: the current in the circuit decreases exponentially with time

How do you calculate resistance?
A: Divide voltage by current

What are the units for resistance?
A: Ohms (Ω)

What is the resistance if the voltage is 10V and the current is 2A?
A: 5 Ω

How do you measure potential difference in a circuit?
A: Voltmeter

Resistance is measured in _____.
A: ohms.

What is the resistance if the current is 2A and the voltage is 10V?
A: 5 Ω

What is the definition of electrical current?
A: The rate of flow of charge

What electrical component measures current?
A: Ammeter

If the length of a wire increases, the resistance _____.
A: increases

Which resistor will prevent the most current flow?
A: 1000 ohms

Resistivity is defined as _____
A: the resistance of a unit cross-sectional area per unit length of the material

The two types of current are _____
A: All of the above

A resistor of 5ohm is connected in series with two other resistors that is connected in parrallel, each has 3ohm resistance. Calculate the effective resistance for this combination of resistors.
A: 6.5ohm

A resistor of 5ohm is connected in series with two other resistors that is connected in parallel, each has 3ohm resistance. Calculate the effective resistance for this combination of resistors.
A: 6.5ohm

If current flow in a bulb is 1.5A. What is the charge flow in 5 minutes?
A: 4.5x10exp-2 C

Which equation defines Ohm's Law?
A: V=IR

What is the effective resistance for two resistors that each has 15ohm resistance and they are connected in parallel?
A: 7.5ohm

1 ampere of current is defined as _____.
A: one coulomb of charge passing through the surface area in one second

Current is measured in _____
A: amps

Define electric current
A: the total charge, Q flowing through the area per unit time, t.

State Ohm's Law as _____
A: the potential difference across a metallic conductor is proportional to the current flowing through it if its temperature is constant.

When Magnets push away from each other they_____.
A: Repel

Which statement is true?
A: All Magnets have a North and South Pole

Where is the force of attraction the strongest on a magnet?
A: at the poles

All metals stick to magnets.
A: False

Most rocks are magnetic.
A: False

A north pole and a south pole will attract.
A: True

What will happen when these magnets are brought close together?
A: They will repel each other

What happens when two north poles of a magnet are placed together?
A: they repel

The South end of a Magnet will
A: Repel to the South end of another Magnet

What subject is attracted to a magnet?
A: Iron