

PSC-436 Quiz #6

Name:

Date:

T M G E O F

1. Write the numbers 1-6 in the spaces below to indicate the chronological order of the events (1-first chronologically... 2-second chronologically...etc.).

5 Oersted pointed out that an electric current will deflect a compass needle.

1 Thales noticed the electrostatic attraction between silk and amber.

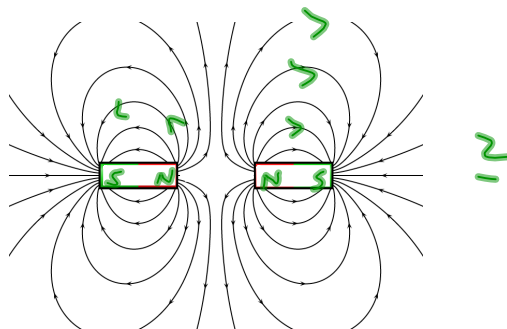
6 Faraday used magnetic induction to generate electric current.

4 Using electrolysis, water was demonstrated to consist of hydrogen and oxygen.

2 North and south poles of magnets were demonstrated by Maricourt.

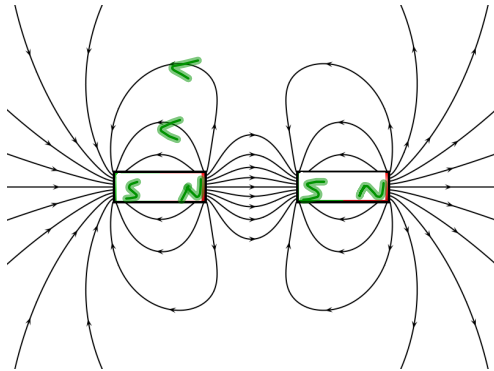
3 Gilbert was able to pass electric charge to a number of substances.

2. a) Label the poles of the following magnets:



b) Are the magnets attracting or repelling? repelling

3. a) Label the magnets below:



b) Are the magnets attracting or repelling? attracting

4. The following statements are related to electric motors and generators: Indicate whether each statement is true or false. For each false statement, rewrite it to make it true.

T 1. The rotor is the mobile part of an electric motor.

T 2. The stator is the stationary part of an electric generator.

F 3. A generator ^{motor} converts electrical energy into mechanical rotational energy.

T 4. In a motor the mechanical rotation of a conducting coil in a magnetic field produces an electromotive force in the coil.

T 5. The power of a generator can be increased by adding turns to the electromagnet coil.

F 6. The power of a generator ^{motor} can be increased by increasing the electromotive force of the power supply.

T 7. A motor uses electricity.

T 8. A generator produces electricity.

5. Indicate whether alkaline batteries, or recyclable batteries would be better for each of the following devices. Also, explain why.



Type of battery: Alkaline

Reason: Lasts longer between uses.



Type of battery: Rechargeable

Reason: Less waste in landfills.

6. Give one disadvantage of each type of battery:

disadvantage of alkaline batteries: More waste.

disadvantage of rechargeable batteries: They discharge when not in use.

7. Which colors of wires are combined in a circuit which delivers:

a) 120V Black + White[Ⓢ] or Red + White[Ⓢ]

b) 240V Black, white + red[Ⓢ]

8. After hair is combed with a plastic comb, the hair is attracted to the comb. Explain.

- ① Electrons travel from comb to hair.
- ① Comb takes on negative charge; hair takes on positive charge.
- ① Opposite charges attract.

9. Why does plastic wrap work to seal a bowl?

It is charged with billions of + and - pockets which attract each other (the wrap sticks to itself)

10. Label the voltmeter below with the numerical reading that would be expected:

