Name Period Date

Electricity and Electromagnetism OBQ

1. Circle the letter of each statement that is true about interactions between charges.

a. Charges that are the same repel each other . b. Charged objects never attract each other.

c. Charges that are different attract each other. d. Charged object always repel each other.

2. What is a region around a charged object where the object’s electric force is exerted on other objects?

3. How can an object become charged?

9. The buildup of charges on an object is called

10. If an object gains electrons, what will be its overall charge?

11. The transfer of electrons from one object to another by rubbing.

12. The transfer of electrons from a charged object to another object by direct contact.

14. What happens when a negatively charged object and a positively charged object are brought near each other?

15. The loss of static electricity as electric charges transfer from one object to another is called

16. The transfer of electrons from one part of an object to another part, caused by the electric field of another object, without the two objects touching is called

17. What is electric current?

19. A complete, unbroken path through which electric charges can flow is a(n)

21. A material through which charges can flow easily.

22. A material through which charges cannot move easily.

23. What is resistance?

24. What are four factors that determine the resistance of a wire or any object?

25. Is the following sentence true or false? If an electric charge can flow through either of two paths, more charge will flow through the path with the higher resistance.

26. Draw a series circuit and label the parts:

27. Draw a parallel circuit and label the parts:

28. In a series circuit, how many paths are there for a current to take?

30. As more light bulbs are added to a series circuit, the bulbs become dimmer. Why?

31. If different parts of a circuit are on separate branches, the circuit is called a(n)

32. Suppose you have a number of light bulbs connected on a circuit, with each bulb on a separate branch. What happens if one of the bulbs burns out?

34. Why wouldn’t you want the circuits in your home to be series circuits?

35. What is electromagnetism?

36. Circle the letter of each sentence that is true about electric current and magnetism.

 a. A wire with a current has a magnetic field.

 b. You can see electromagnetism around a wire.

 c. Iron filings can map out a magnetic field around a wire with a current.

 d. A wire with no current has a magnetic field.

37. What are the three characteristics of a magnetic field produced by current?

38. Is the following true or false? When the direction of the current reverses, the direction of the magnetic field stays the same.

39. Describe 4 ways you can increase the strength of an electromagnet.