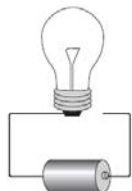


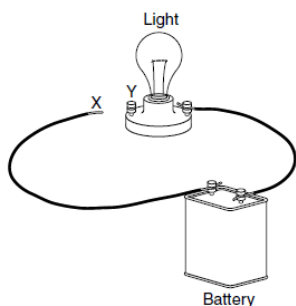
Circuits

1. Which of these best completes the circuit?
 (2008 test – question 38)
- Rubber band
 - Metal nail
 - Leather shoelace
 - Wooden toothpick

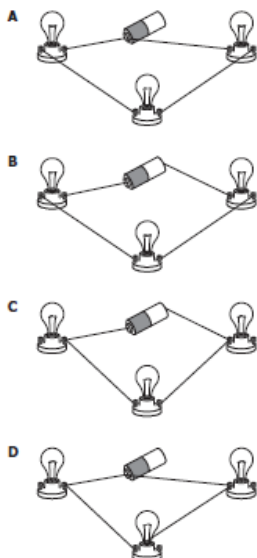


2. Which of these materials is a good conductor of electricity?
 (2005 test – question 32)
- Rubber
 - Glass
 - Metal
 - Newspaper
3. Electric lights will not come on unless their electrical circuit is a —
 (2001 test – question 36)
- parallel circuit
 - series circuit
 - closed circuit
 - short circuit

4. A fifth-grade class constructed this circuit. Which of these objects most likely made the light glow when connected to points X and Y?
 (2010 test – question 27)
- Plastic straw
 - Cotton string
 - Aluminum foil
 - Rubber eraser



5. A class prepared some electric circuits using battery, connecting wires, and three light bulbs. Which of these circuits can make the three bulbs light?
 (2007 test – question 25)



Conductors / Insulators

6. Which of these substances conducts electricity the best?
 (2007 test – question 37)
- Wood
 - Brick
 - Copper
 - Plastic

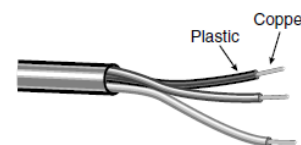
7. The electrician in this picture is wearing rubber gloves for protection. The purpose of the rubber gloves is to —
 (2009 test – question 13)
- keep the electrician dry
 - create an electrical circuit
 - produce electricity
 - insulate the electrician



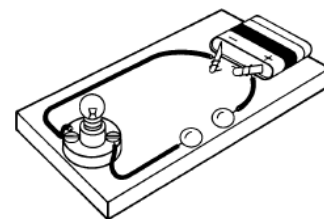
8. What material would be safest to use as an insulator to cover electrical wires?
 (2003 test – question 15)
- Aluminum
 - Tin
 - Rubber
 - Water

9. Copper wire is often wrapped in plastic. Plastic material is a good —
 (2008 test – question 14)
- electromagnet
 - insulator
 - circuit
 - current

10. Many electrical wires are wrapped with a plastic coating because plastic is —
 (2004 test – question 13)
- less expensive than steel
 - more dense than copper
 - able to keep its shape
 - a good insulator



11. This instrument can be used to see if materials conduct electricity. Which of these groups contains items that could all conduct electricity to complete the circuit?
 (2002 test – question 37)
- Rubber ball, plastic comb, nail
 - Paper clip, penny, screw
 - Cork, dollar bill, tweezers
 - Pencil, eraser, spoon



Static Electricity

12. Early scientists most likely saw a discharge of electricity for the first time when observing a — (2011 test – question 4)
- waterfall
 - rainbow
 - lightning storm
 - volcano erupting



13. Benjamin Franklin conducted this famous experiment that showed lightning was —

(2003 test – question 19)

- a movement of air molecules
- a magnetic field
- an electrical discharge
- a glowing chemical

14. Benjamin Franklin discovered the form of energy produced by lightning. Experiments with lightning killed many people before he discovered that lightning is a form of —

(2001 test – question 4)

- gravity
- water
- magnetism
- electricity

15. Bits of paper are attracted to the surface of this balloon. What attracts the paper pieces to the balloon?

Paper Pieces Stuck to Balloon



(2010 test – question 34)

- Friction
- Magnetism
- Potential energy
- Static electricity

16. A comb is rubbed with a piece of wool fabric and placed next to some scraps of paper. The paper moves toward the comb. The movement of the paper is caused by —

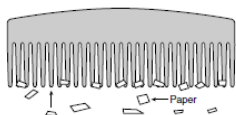
(2005 test – question 38)

- chemical energy
- magnetic attraction
- mechanical energy
- static electricity

17. The picture shows a comb that was used on a cold, dry day. Which of these cause the bits of paper to be attracted to the comb?

(2003 test – question 32)

- Magnetic forces
- Chemical reactions
- Static electricity
- Heat differences



Electromagnetism

18. A bar magnet is placed on a table, and a sheet of blank paper is placed over the magnet. What could be sprinkled on the paper to show the magnetic field of the bar magnet?

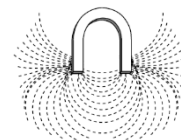
(2002 test – question 30)

- Salt
- Iron filings
- Sand
- Soil

19. In this picture, the iron filings show the shape of the magnetic —

(2003 test – question)

- axis
- core
- field
- pole



20. To make an electromagnet, a conductor should be coiled around —

(2011 test – question 3)

- a glass tube
- an iron nail
- a roll of paper
- a wooden stick

21. Michael Faraday showed how electric current in a wire produces —

(2008 test – question 33)

- molecules
- chemicals
- a vibration
- a magnetic field

22. The magnetic fields of any magnet are greatest —

(2004 test – question 21)

- around the middle
- around the poles
- around only the south pole
- around only the north pole

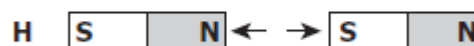
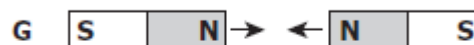
23. Which of these can most easily produce magnetic fields?

(2001 test – question 27)

- Sunlight
- Wind
- Electricity
- Flowing water

24. Which of these correctly shows what happens when two magnets are placed side by side?

(2009 test – question 6)

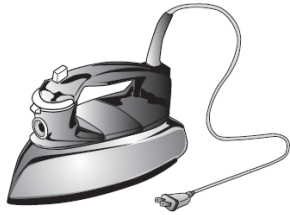


Energy Forms & Transformations

25. Which energy transformation most likely occurs in a steam iron?

(2011 test – question 22)

- a. Electrical energy changes to heat energy.
- b. Electrical energy changes to sound energy.
- c. Mechanical energy changes to heat energy.
- d. Mechanical energy changes to light energy.



26. Which form of energy is being used by the toaster?

(2007 test – question 5)

- a. Chemical
- b. Electrical
- c. Solar
- d. Nuclear



27. The energy used to move most bicycles is an example of what type of energy?

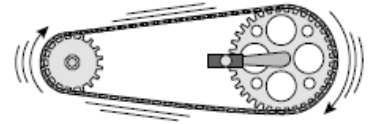
(2004 test – question 3)

- a. Electrical
- b. Mechanical
- c. Chemical
- d. Nuclear

28. Which form of energy is best shown in this picture?

(2003 test – question 1)

- a. Mechanical
- b. Electrical
- c. Chemical
- d. Nuclear



29. Which item is designed to change electrical energy into heat energy?

(2010 test – question 31)

- a. Alarm clock
- b. Hand dryer
- c. Fan
- d. Telephone

30. An electric motor is designed to turn electrical energy into —

(2009 test – question 36)

- a. solar energy
- b. potential energy
- c. static electricity
- d. mechanical energy

31. When in operation, this tool transforms electrical energy mostly into —

(2006 test – question 23)

- a. chemical energy
- b. solar energy
- c. sound energy
- d. mechanical energy

