

**Study guide physical science.**

**Name** \_\_\_\_\_

**1. How do radiation, conduction, and convection heat matter?**

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**2. How is resistance useful?**

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**3. What is the difference between series circuits and parallel circuits?**

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**4. Explain the difference between a physical change and a chemical change.**

**Give an example of each.**

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**5. Explain what causes magnetism.**

**Part B**

**Choose the best answer. Write the letter online.**

\_\_\_\_\_ 1. What is the study of energy and how it acts with matter?

**A physics B biology C chemistry D genetics**

\_\_\_\_\_ 2. What property of a solid object could you measure with the displacement of water method?

**A weight B density C volume D mass**

\_\_\_\_\_ 3. The central part of an atom is called the \_\_\_\_\_.

**A proton B neutron C nucleus D electron shell**

\_\_\_\_\_ 4. Elements in the periodic table are organized \_\_\_\_\_.

**A alphabetically by symbol C by increasing atomic mass**

**B in numeric atomic number order D alphabetically by element name**

\_\_\_\_\_ 5.  $\text{SO}_4$  is an example of a(n)

**A atom B element C solution D radical**

\_\_\_\_\_ 6. A substance that is formed in a chemical reaction is a \_\_\_\_\_.

**A product B reactant C solvent D mixture**

\_\_\_\_\_ 7. What is the rate of change in velocity?

**A acceleration B gravitation C deceleration D speed**

\_\_\_\_\_ 8. Which simple machine consists of a bar that is free to move about a fixed point?

**A wedge B pulley C lever D screw**

\_\_\_\_\_ 9. A liquid change to a gas \_\_\_\_\_.

**A at the melting point C at the freezing point**

**B by evaporating D by condensing**

\_\_\_\_\_

\_ 10. White light is made up of \_\_\_\_\_.

**The electromagnetic spectrum C an ultrasound**

**B a prism D the visible spectrum**

\_\_\_\_\_ 11. What unit is used to measure resistance of a wire?

**A volt B ohm C kilowatt D ampere**

\_\_\_\_\_ 12. When the north poles of two magnets are placed together, the poles \_\_\_\_\_.

**A attract each other C demagnetize each other.**

**B repel each other D have no effect on each other**

\_\_\_\_\_ 13. Batteries produce current by changing \_\_\_\_\_ into electrical energy.

**A kinetic energy C mechanical energy**

**B heat D chemical energy**

\_\_\_\_\_ 14. Decibels are used to measure the \_\_\_\_\_ of sound.

**A pitch B frequency C intensity D reflection**

\_\_\_\_\_ 15. Which of these items is a good conductor of heat?

**A tin B glass C wood D air**

**Part c**

**Write the word or words that correctly complete each sentence.**

**16. Anything that has mass and takes up space is**

\_\_\_\_\_.

**17. \_\_\_\_\_ is equal to mass divided by volume.**

**18. The \_\_\_\_\_ of an atom is equal to the number of its protons and neutrons.**

**19. A shiny solid that is a good conductor of heat and electricity is classified as a(n) \_\_\_\_\_.**

**20. A compound that reacts with metals to produce \_\_\_\_\_ is an acid.**

**21. \_\_\_\_\_ is one in which a compound breaks down into two or more simple substances.**

**22. The rate at which the position of an object changes is \_\_\_\_\_.**

**23. Velocity is the speed and \_\_\_\_\_ in which an object moves.**

24. The formula for work is force \_\_\_\_\_  
\_\_\_\_\_.

25. A book on the edge of a table has  
\_\_\_\_\_ energy.

26. Heat can be produced by \_\_\_\_\_ the  
motion of particles in matter.

27. When a substance changes from a liquid to a solid, it has  
reached the  
\_\_\_\_\_ point.

28. A(n) \_\_\_\_\_ is a reflection of sound  
back to its source.

29. Photons are small bundles of energy that make up  
\_\_\_\_\_.

30. A(n) \_\_\_\_\_ is a point where electrons  
leave or enter a battery.

31. In a series circuit, all \_\_\_\_\_ flows  
through a single path.

32. Electromagnets work when electric current is  
\_\_\_\_\_.

33. A motor used to run a refrigerator is an example of a use of  
\_\_\_\_\_.

34. Opposite magnetic poles \_\_\_\_\_ each  
other.

35. A(n) \_\_\_\_\_ is a simple machine that is  
a form of inclined plane

wrapped in a spiral around a piece of metal.

36. Deceleration is the rate of \_\_\_\_\_.

37. A mixture of sugar and water is an example of a(n) \_\_\_\_\_.

38. Scientists use a(n) \_\_\_\_\_ number to tell how many of an element's atoms are in a compound.

39. The \_\_\_\_\_ Fe stands for the element iron.

40. Electrons are atomic particles that have a(n) \_\_\_\_\_ charge.

41. A(n) \_\_\_\_\_ is the instrument used to measure mass.

42. One thousand meters equal one \_\_\_\_\_.

43. Lightning is the discharge of \_\_\_\_\_ between clouds or clouds and Earth.

44. \_\_\_\_\_ is used to measure distances under water.

45. Most metals are good \_\_\_\_\_ of heat

**Part C Write the answer to each question.**

46. What is the volume of a box that measures 15 cm long, 20 cm wide, and 25 cm high?

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**47. What is the density of a substance that has a mass of 38.6 g and a volume of 2 cm<sup>3</sup>?**

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**48. Aluminum has an atomic number of 13 and an atomic mass number of 27.**

**A How many protons does it have? \_\_\_\_\_**

**B How many neutrons does it have? \_\_\_\_\_**

**C How many electrons does it have? \_\_\_\_\_**

**49. Complete the equation and identify the kind of chemical reaction.**

**A**  $\text{BaCl}_2 \rightarrow \text{Ba}$  \_\_\_\_\_ **B Reaction:**

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**50. Balance the equation. Then identify the reactants and products.**

**Fe** \_\_\_\_\_  **$3\text{O}_2 \rightarrow 2\text{Fe}_2\text{O}_3$**

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**Reactants:** \_\_\_\_\_ **Products:**

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**51. How far can a car travel at 90 kilometers per hour in 4.5 hours?**

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**52. How much work is done in moving a load 15 meters, using a force of 15 newtons?**

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**53. A person used a lever to lift a machine with 200 newtons of resistance force 0.2 meters.**

**The person applied 150 newtons of effort force and pushed the end of the lever 0.5 meter.**

**A What is the work input? \_\_\_\_\_**

**B What is the work output? \_\_\_\_\_**

**C What is the efficiency of the lever? \_\_\_\_\_**

**54. How much current is flowing in a circuit with 50 volts and a resistance of 15 ohms? \_\_\_\_\_**

**55. Use the formula to convert 50 ° F to Celsius. You may use a calculator. \_\_\_\_\_**

**$C = 5/9 \times (F - 32)$**