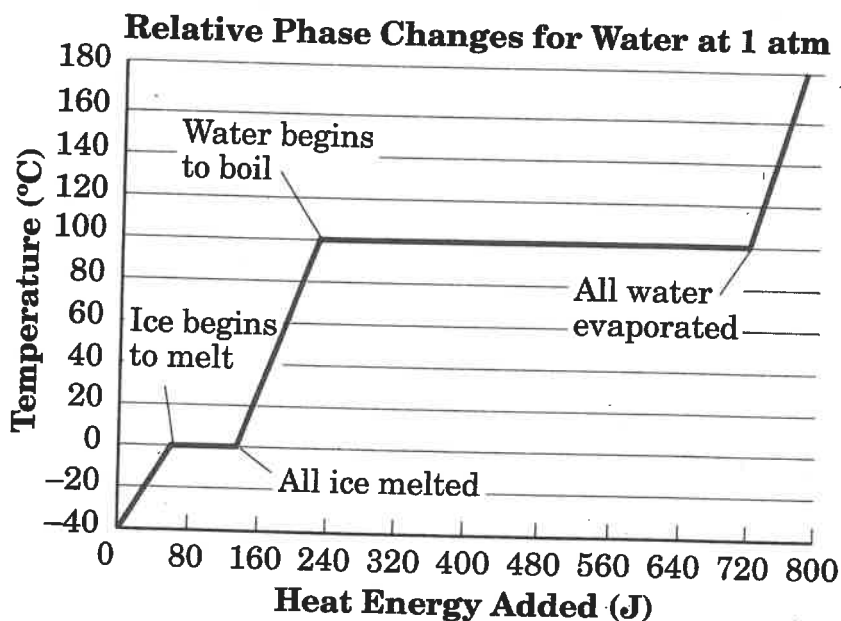


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EOC Review

1. What is the density of a piece of silver that has a mass of 210 g and a volume of 20.0 cm³?
- A 4200 g/cm³
 B 230 g/cm³
 C 190 g/cm³
 D 10.5 g/cm³
2. Use the diagram below to answer the question. During a phase change from a liquid to a gas what happens to the temperature of the liquid during the process?



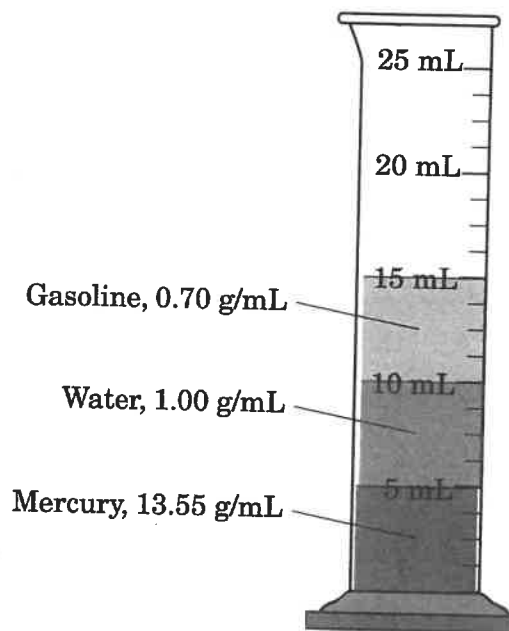
- A temperature decreases to -40°C
 B temperature remains constant at 0°C
 C temperature remains constant at 100°C
 D temperature increases to 180°C

3. Which change is a chemical change?
- A electrolysis of water into hydrogen and oxygen gases
 - B evaporation of water from a puddle on a hot summer afternoon
 - C hammering of gold metal into thin sheets to be used for gold leaf
 - D melting silver before pouring it into a mold
4. Inflating a rubber balloon and then deflating it to its original size shows that rubber possesses the physical property of
- A elasticity
 - B plasticity
 - C ductility
 - D malleability
5. What kind of evidence led John Dalton to think that matter was made of invisible particles too small to see or feel?
- A he trusted ancient philosophers
 - B the mass of the products was always less than the mass of the reactants
 - C elements always combined in whole number ratios
 - D the mass of the reactants is always double that of the products

6. Which part of Dalton's atomic theory is still correct?
- A atoms of the same element have equal masses
 - B atoms of elements combine in whole number ratios
 - C atoms are solid particles
 - D atoms are indestructible
7. The maximum number of electrons that can fit in energy level 2 of the atom according to the formula $2n^2$ is
- A 32
 - B 18
 - C 8
 - D 2
8. The development of the atomic theory is mainly based on the work of
- A J. J. Thomson, who discovered the electron.
 - B all the scientists who discovered new evidence and proposed new models.
 - C ancient Greek philosophers.
 - D John Dalton, who developed the first atomic model.

9. The electron cloud model is based on the fact that determining both an electron's position and speed simultaneously
- A requires the use of an electron microscope.
 - B is a relatively simple task.
 - C is theoretically impossible.
 - D results in the model employing fixed orbits.
10. A common isotope of phosphorous is P-31. Its atomic number is 15. How many neutrons are found in P-31?
- A 15
 - B 16
 - C 31
 - D 46
11. Which subatomic particles are involved in chemical reactions?
- A electrons
 - B neutrons
 - C protons
 - D nuclei

Use the diagram below to answer questions 12 and 13. Three immiscible (not mixable) liquids were poured into a graduated cylinder. They separated into layers. Each liquid's mass/mL is given. The cylinder shows they have equal volumes of 5 mL.



12. What does the order of layering indicate?
- A the liquids are increasingly less dense from top to bottom
 - B the liquids are increasingly more dense from top to bottom
 - C if there were 6 mL of gasoline, it would sink to the bottom
 - D if there were only 1 mL of mercury, it would float to the top

13. Which one of the following correctly links the liquid layer with its total mass?

- A gasoline: 0.7 g
- B water: 1 g
- C mercury: 13.55 g
- D gasoline: 3.5 g

14. Where is 99.99 percent of the mass located in an atom?

- A in its nucleus
- B in its protons
- C in its neutrons
- D in its electron cloud

15. Sulfur has three common isotopes. One of the isotopes of sulfur has 18 neutrons. Its atomic number is 16. Which of the following symbols correctly identifies this isotope of sulfur?

- A S-2
- B S-16
- C S-18
- D S-34

16. Where is 99.99 percent of the volume of an atom located?

- A in its nucleus
- B in its electron cloud
- C in its protons
- D in its neutrons

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EOC Review

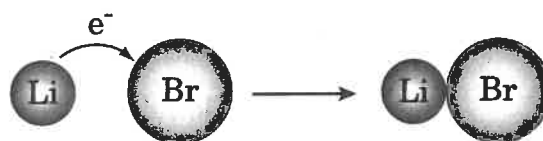
1. Which of the following is referred to as the amount of fission material required to keep a fission reaction happening?

A nuclear decay
B chain reaction
C critical mass
D atomic mass

2. Which subatomic particles are involved in chemical reactions?

A protons
B neutrons
C electrons
D nuclei

3. What kind of chemical bond is formed in the diagram below?



A ionic
B covalent
C metallic
D polar covalent

4. An isotope of carbon is C-14. Its atomic number is 6. How many neutrons are found in C-14?

A 6
B 8
C 14
D 20

5. Cesium is a Group I alkali metal. It is found in Period 6 on the periodic table. What kind of ion will a cesium atom form to reach chemical stability?
- A +1
 - B -1
 - C +6
 - D -2
6. Why are the noble gases in periods 2 through 7 stable atoms?
- A They have an equal number of protons and electrons.
 - B They form negative ions by gaining electrons.
 - C They form positive ions by losing valence electrons.
 - D They have 8 valence electrons in their outer energy level.
7. Where is the majority of the mass located in an atom?
- A in the nucleus
 - B in protons
 - C in neutrons
 - D in the electron cloud
8. What happens to the number of energy levels as you travel from top to bottom in a group on the periodic table?
- A The number of energy levels stays the same.
 - B The number of energy levels increases.
 - C The number of energy levels decreases.
 - D The number of energy levels varies within a group.

9. Sulfur has many chemical properties that are similar to a few other atoms. Which one of the following atoms is most likely to have similar chemical properties to sulfur?
- A sodium
 - B carbon
 - C nitrogen
 - D oxygen
10. Why is radiation often used to destroy cancer cells?
- A Radiation only targets cancer cells, not healthy cells.
 - B Radiation is a tracer that can pick out cancer cells to destroy.
 - C Because cancer cells divide more quickly than normal cells, they are very susceptible to radiation.
 - D Radiation is the only defense that people have to fight cancer.
11. Which reaction is an example of decomposition?
- A $\text{CaCO}_3 + 2\text{HCl} \rightarrow \text{CaCl}_2 + \text{H}_2\text{O} + \text{CO}_2$
 - B $\text{CaCO}_3 \rightarrow \text{CaO} + \text{CO}_2$
 - C $4\text{Al} + 3\text{O}_2 \rightarrow 2\text{Al}_2\text{O}_3$
 - D $\text{NaOH} + \text{HCl} \rightarrow \text{NaCl} + \text{H}_2\text{O}$
12. What kind of reaction is $2\text{NaOH} + \text{H}_2\text{SO}_4 \rightarrow 2\text{H}_2\text{O} + \text{Na}_2\text{SO}_4$?
- A double replacement
 - B synthesis
 - C decomposition
 - D single replacement

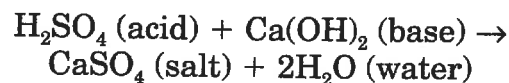
13. Which of the following is *not* an example of a chemical change?

- A formation of silver sulfide when silver reacts with sulfur
- B burning of methane gas producing water and carbon dioxide
- C vinegar and baking soda combining and forming a salt and water
- D condensation of water vapor on the outside of a cold can of soda

14. When solutions of silver nitrate and sodium chloride are mixed, silver chloride, a solid white substance, forms. What is the name given to a solid substance that forms when two solutions are mixed?

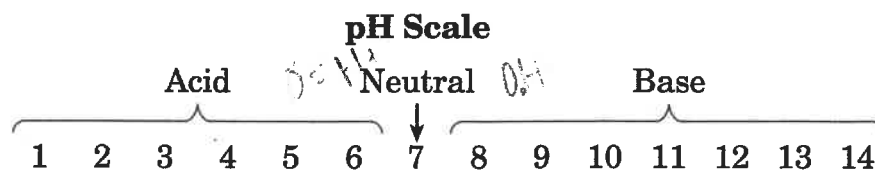
- A acid
- B base
- C gas
- D precipitate

15. Select the term from the choices below that describes the type of chemical reaction represented by the following equation:



- A neutralization
- B oxidation
- C single replacement
- D endothermic

Use the diagram of a pH scale to answer questions 16 and 17.



16. Which statement is correct?
- A H^+ ions outnumber OH^- ions at pH 14.
 - B OH^- ions outnumber H^+ ions at pH 3.
 - C H^+ and OH^- ions are in equal concentration at pH 9.
 - D H^+ ions are most concentrated at 0.
17. Harrison added just enough base to an acid to exactly neutralize it. He asked Marilyn to test the resulting solution with a pH meter. What value on the pH scale did the meter show on its display?
- A 0
 - B 3.5
 - C 7
 - D 10.5
18. A radioactive isotope has a half-life of 400 years. If 1,000 kg of the isotope are placed in an underground waste disposal site for 1,200 years, how many kilograms of the isotope will be left?
- A 1,000 kg
 - B 500 kg
 - C 250 kg
 - D 125 kg