

1. What are the rows of the periodic table called?
2. What do all atoms in a group of the periodic table have in common?
3. What do all atoms in a period of the periodic table have in common?
4. How many electrons, neutrons and protons does a neutral phosphorus atom have?
5. What is an anion, cation, and polyatomic ion?
6. How many electrons, neutrons and protons does a bromine anion have?
7. Draw a bohr diagram for the chlorine atom and chlorine ion.
8. Draw an electron dot diagram for an oxygen atom and oxygen ion.
9. How is the bonding in calcium oxide different from the bonding in carbon tetrahydride?
10. What is the difference between a covalent bond and an ionic bond?
11. What observations can you make to determine if a substance is molecular or ionic?
12. What is an electrolyte?
13. Which types of elements combine to form molecular compounds?
14. Name the following compounds.
 - a) $MgBr_2$
 - b) NH_3
 - c) $PbSO_4$
 - d) Na_2CO_3
15. Write the chemical formula for each of the following.
 - a) Iron(II) nitrate
 - b) Copper(II) hydroxide
 - c) Diphosphorus pentaoxide
 - d) Iodine hexachloride
 - e) Sodium nitride

16. Given the following word equations, write a skeleton and balanced chemical equation

a) Gaseous sulfur dioxide reacts with oxygen gas to produce gaseous sulfur trioxide.

skeleton: _____

balanced: _____

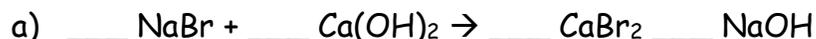
b) Solid aluminum chloride reacts with solid potassium to produce potassium chloride and solid aluminum.

skeleton: _____

balanced: _____

17. Suppose that you measure the mass of a chemical in an open container, and then heat it for a few minutes over a Bunsen burner flame. After the container and contents have cooled, you find that the mass is larger than before. If you accept the law of conservation of mass, how can you explain your observation?

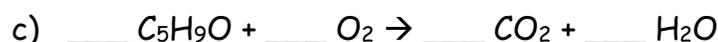
18. Balance each skeleton equation and identify the type of reaction in each case.



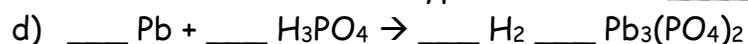
Type of reaction: _____



Type of reaction: _____



Type of reaction: _____



Type of reaction: _____

19. Identify the type of reaction, predict the products, and write the balanced equation. If it is a single displacement, determine if the reaction is possible

sodium chloride + potassium nitrate →

potassium iodide + chlorine →

zinc hydroxide + sulfuric acid →

aluminum + hydrochloric acid →

lead (II) hydroxide + hydrochloric acid →

zinc + magnesium nitrate →

zinc + iron (III) sulfate →

magnesium + oxygen →

20. What is a chemical change?

21. What are indicators of a chemical change?

22. Explain the difference between complete combustion and incomplete combustion.