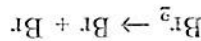


1. The balanced equation below represents a molecule of bromine separating into two bromine atoms.



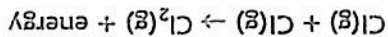
What occurs during this change?

- (1) Energy is absorbed and a bond is formed.
- (2) Energy is absorbed and a bond is broken.
- (3) Energy is released and a bond is formed.
- (4) Energy is released and a bond is broken.

2. The forces between atoms that create chemical bonds are the result of interactions between

- (1) nuclei
- (2) electrons
- (3) protons and electrons
- (4) protons and nuclei

3. Given the reaction:



Which statement best describes the reaction?

- (1) A bond is formed and energy is absorbed.
- (2) A bond is formed and energy is released.
- (3) A bond is broken and energy is absorbed.
- (4) A bond is broken and energy is released.

4. Which particles may be gained, lost, or shared by an atom when it forms a chemical bond?

- (1) protons
- (2) electrons
- (3) neutrons
- (4) nucleons

5. A barium atom attains a stable electron configuration when it bonds with

- (1) one chlorine atom
- (2) two chlorine atoms
- (3) one sodium atom
- (4) two sodium atoms

6. Which symbol represents a particle that has the same total number of electrons as S^{2-} ?

- (1) O^{2-}
- (2) Si
- (3) Se^{2-}
- (4) Ar

7. Which element has an atom with the greatest attraction for electrons in a chemical bond?

- (1) As
- (2) Bi
- (3) N
- (4) P

8. Which compound contains both ionic and covalent bonds?

- (1) ammonia
- (2) methane
- (3) sodium nitrate
- (4) potassium chloride

* Bonus points for naming these substances *

9. Which substance contains bonds that involved the transfer of electrons from one atom to another?

- (1) CO_2
- (2) NH_3
- (3) KBr
- (4) Cl_2

10. As a bond between a hydrogen atom and a sulfur atom is formed, electrons are

- (1) shared to form an ionic bond
- (2) shared to form a covalent bond
- (3) transferred to form an ionic bond
- (4) transferred to form a covalent bond

11. What is the correct name of Fe_2O_3 ?

- (1) iron (I) oxide
- (2) iron (II) oxide
- (3) iron (III) oxide
- (4) iron (IV) oxide

12. What is the correct name of the compound with the formula NH_4NO_2 ?

- (1) ammonia nitrite
- (2) ammonium nitrite
- (3) ammonia nitrate
- (4) ammonium nitrate

13. Which is the formula for the compound that forms when magnesium bonds with phosphorus?

- (1) Mg_3P_2
- (2) MgP_2
- (3) Mg_2P_3
- (4) Mg_3P_3

14. What is the name for NaClO_3 ?

- (1) sodium chlorite
- (2) sodium chloride
- (3) sodium chlorate
- (4) sodium perchlorate

15. A correct name for N_2O_3 is

- (1) nitrogen (I) oxide
- (2) nitrogen (II) oxide
- (3) nitrogen (III) oxide
- (4) nitrogen (IV) oxide

16. What is the IUPAC name for the compound FeS ?

- (1) iron(II) sulfate
- (2) iron(III) sulfate
- (3) iron(II) sulfide
- (4) iron(III) sulfide

17. What is the correct formula for a compound of Al and O? (1) AlO

- (2) Al_2O
- (3) Al_2O_2
- (4) Al_2O_3

18. What is the correct formula for a compound of Al and P? (1) AlP

- (2) Al_2P
- (3) Al_2P_2
- (4) Al_2P_3

19. What is the correct formula for a compound of Li and F? (1) LiF

- (2) Li_2F
- (3) LiF_2
- (4) Li_2F_2

20. What is the correct formula for a compound of Mg and Cl? (1) MgCl

- (2) Mg_2Cl
- (3) Mg_2Cl_2
- (4) Mg_2Cl_4

22.

NAME the following substances

.....	a) $\text{Sn}(\text{NO}_3)_4$
.....	b) K_3N
.....	c) HgBr_2
.....	d) CaI_2
.....	e) $\text{Mg}_3(\text{PO}_4)_2$

21.

NAME the following molecular substances

.....	a) SeS_3
.....	b) SO_2
.....	c) CO
.....	d) SBr_6
.....	e) N_2O_5

25
24