

CHAPTER 8

1. Individual atoms, molecules.
2. Chemical compounds always combine in constant proportions.
3. It wrong because it violates the law of constant composition. Water is always H₂O. If a molecule does not contain 2 atoms of hydrogen bonded to one atom of oxygen, it isn't water. H₂O₂ is not water, it is an entirely different molecule with physical and chemical properties that are different than H₂O.
4. True.
5. True.
6. C, P, N, H, S, I, Br, Cl, O, F.
7. False.
8. Gallium.
9. Tellurium.
10. TeO₂.
11. SrBr₂.
12. SiC.
13. Yes.
14. Ga₂O₃.
15. It is not correct. One atom of barium would form an ionic compound with **one atom** of oxygen, **BaO**.
16. The elements are listed in the wrong order. Ga should be before N.
17. **3 Cs and 1 N**.
18. KCl, dilithium sulfide, MgO, Sr₃N₂.
19.

$$\begin{array}{c} \text{F} \\ | \\ \text{F}-\text{Si}-\text{F} \\ | \\ \text{F} \end{array}$$
20.

$$\cdot\ddot{\text{Br}}\cdot\text{Ca}^{2+}\cdot\ddot{\text{Br}}\cdot$$
21. Calcium dibromide. It is an ionic compound and since we understand the bonding relationships, it is not necessary to include the prefixes for ionic compounds but is Ok if you do.
22. It is incorrect because Cs is a metal; therefore, it forms ionic bonds. The correct way to draw its diagram is with an electron dot model, not with a model showing covalent bonds.
23. Tricarbon tetrahydride.
24. True.
25. Potassium sulfide. The cation is potassium (K) and the anion is sulfur ("sulfide").

