

# Chemistry Review for the Unit Test

Key

1. Which subatomic particles are responsible for chemical bonding?

- A. protons
- B. electrons
- C. neutrons
- D. nucleons

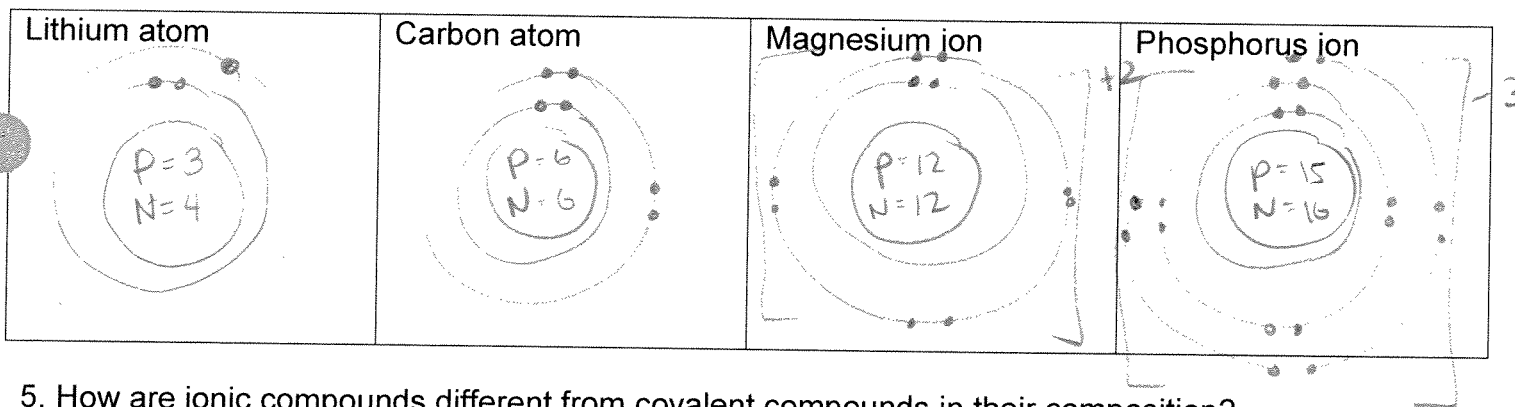
2. What appears on the Periodic Table, in order, when reading it from left to right?

- A. metals, metalloids, non-metals
- B. metalloids, metals, non-metals
- C. alkali metals, noble gases, halogens
- D. alkali metals, halogens, alkaline earths

3. Write the chemical symbols for the following particles:

- (a) fluorine atom F
- (b) oxygen ion O<sup>2-</sup>
- (c) oxygen molecule O<sub>2</sub>
- (d) potassium ion K<sup>+</sup>

4. Draw Bohr diagrams for the following elements:



5. How are ionic compounds different from covalent compounds in their composition?

metal + non-metal      non-metals

6. Which of the following does *not* represent a covalent compound?

- A. CO<sub>2</sub>
- B. NH<sub>3</sub>
- C. H<sub>2</sub>O
- D. NaCl

7. First, classify each of the following compounds as ionic or covalent. Then, write the chemical formula for each compound.

	ionic or covalent	formula
(a) beryllium nitrate	ionic	$\text{Be}(\text{NO}_3)_2$
(b) ammonium carbonate	ionic	$(\text{NH}_4)_2\text{CO}_3$
(c) lead(II) fluoride	ionic	$\text{PbF}_2$
(d) aluminum selenide	ionic	$\text{Al}_2\text{Se}_3$
(e) carbon tetrachloride	covalent	$\text{CCl}_4$

8. First, classify each of the following compounds as ionic or molecular. Then, write the chemical name for each compound.

	ionic or covalent	name
(a) $\text{RbCl}$	ionic	Rubidium chloride
(b) $(\text{NH}_4)_3\text{P}$	ionic	ammonium phosphide
(c) $\text{N}_3\text{Br}_6$	covalent	trinitrogen hexabromide
(d) $\text{Ti}_2\text{O}_3$	ionic	Thallium III oxide
(e) $\text{Sr}_3(\text{PO}_4)_2$	ionic	Strontium phosphate

9. Which of the following applies only to acids and not to bases or salts?

- A. They turn litmus red.  
 B. They turn phenolphthalein pink.  
 C. Their solutions conduct electricity.  
 D. They react with metals to form oxygen gas.

10. State a definition of an organic compound.

↳ a compound that contains both carbon + hydrogen covalently bonded

11. Write either the acid name or chemical formula, depending on what is given.

(a) HCl	hydrochloric acid
(b) perchloric acid	$\text{HClO}_4$
(c) $\text{H}_2\text{SO}_4$	sulphuric acid
(d) chlorous acid	$\text{HClO}_2$
(e) $\text{HNO}_2$	nitrous acid

12. Draw Lewis diagrams the following

Chlorine ion	Nitrogen atom	<sup>N</sup> $\text{BCl}_3$	$\text{CaI}_2$

13. Which of the following sets of ordered coefficients will correctly balance the skeleton equation below?



- A. 1, 5, 3, 3 *6 2 4 2 6*  
 B. 1, 2, 1, 1 *6 2 Br 2 6*  
 C. 2, 4, 6, 3 *3 - 0 + 3*  
 D. 2, 4, 3, 2

14. Which of the following factors does not increase the rates of all chemical reactions?

- A.** adding oxygen  
 B. adding a catalyst  
 C. increasing the concentration of reactants  
 D. increasing the surface area of a solid Reactant

15. Balance the following skeleton equations. Then, classify the equations according to reaction type.

Type?



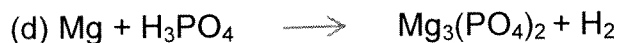
S.R.



Synthesis



D.R.



S.R.



decomp.



combustion

16. Predict the products of the following reactions, then balance the equations. Classify the equations according to reaction type.

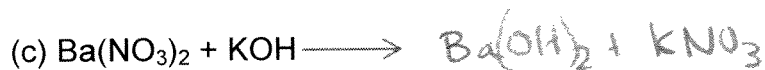
Type?



Synthesis



combustion



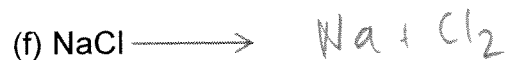
D.R.



S.R.



acid base neutralization



decomposition