**Review questions for Chemistry lecture**

**Multiple choice review questions:**

1) The smallest particles of ordinary matter are called...

 A) Ions

 B) Atoms

 C) Molecules

 D) Reactions

2) The atomic symbol for an atom always contains...

 A) 1 letter

 B) 2 letters

 C) 3 letters

 D) 1 - 2 letters

 E) 1 - 3 letters

3) The atomic symbol for sodium is...

 A) Na

 B) Cl

 C) S

 D) So

4) A molecule is best described as...

 A) The smallest particle of ordinary matter

 B) Several atoms joined together

 C) One atom

 D) A chemical reaction

5) How many hydrogen atoms does the molecule C6H12O6 contain?

 A) 6

 B) 12

 C) 18

 D) 24

6) The term \_\_\_\_\_ means an atom or molecule that is electrically charged.

 A) Atomic symbol

 B) Voltron

 C) Ampere

 D) Ion

7) The term \_\_\_\_\_ means when molecules become changed.

 A) Physiology

 B) Enzyme

 C) Chemical reaction

 D) Dissolve

 E) Covalent

**Answers to multiple-choice questions:**

 1 = B

 2 = D

 3 = A

 4 = B

 5 = B

 6 = D

 7 = C

**Fill-in-the-blank review questions: When a question below mentions a specific atom or molecule, be able to answer the question for any atom or molecule. In other words, different example atoms and molecules may be used on exams.**

1) Write the correct atomic symbol for the following atoms

 Nitrogen = \_\_\_\_\_\_\_\_\_

 Chlorine= \_\_\_\_\_\_\_\_\_\_

3) The four most abundant elements in the human body are \_\_\_\_\_, \_\_\_\_\_, \_\_\_\_\_, \_\_\_\_\_.

4) When two or more atoms are held together by bonds, the resulting particle is called a \_\_\_\_\_.

5) \_\_\_\_\_\_\_ bonds are shown as a line connecting atoms.

6) Inspect the molecule below then answer the questions about it.

 H

 |

 H–C–O–H

 |

 H

 a) The lines that join the atoms in the molecule are called \_\_\_\_\_\_\_\_.

 b) Write the molecular formula for the molecule: \_\_\_\_\_\_\_\_\_\_.

 c) Write the molecular formula that represents five of these molecules: \_\_\_\_\_\_\_\_.

9) Ions are also called \_\_\_\_\_ (hint: the answer begins with the letter E).

10) Negatively charged ions are called\_\_\_\_\_\_\_, whereas positively charged ions are called: \_\_\_\_\_\_.

11) Name any two common ions in the human body. Your list must include the correct atomic symbol or molecular formula for each ion, including its correct ionic charge.

12) Write the correct atomic symbol (including its correct ionic charge) for a sodium ion: \_\_\_\_\_

13) What is the name of the ion PO43–? \_\_\_\_\_\_\_\_\_

15) \_\_\_\_\_ refers to the total of all the chemical reactions which occur within the body.

16) True or false: The number of molecules does not change in a chemical reaction.

17) True or false: The number of atoms does not change in a chemical reaction.

18) The molecules that enter a chemical reaction are called the \_\_\_\_\_\_, while the molecules that are formed in the chemical reaction are called the \_\_\_\_\_\_.

**Answers to fill-in-the-blank review questions:**

1) N

 Cl

3) C (Carbon)

 H (Hydrogen)

 O (Oxygen)

 N (Nitogen)

4) Molecule

5) Covalent bonds

6) Covalent bonds

 COH4

 5COH4

9) Electrolytes

10) Anions

 Cations

11) Any two answers from this list:

 Na+

 K+

 H+

 Cl-

 Ca2+

 Fe2+

 OH-

 HCO3-

 PO43-

12) Na+

13) Phosphate ion

15) Metabolism

16) False

17) True

18) Reactants

 Products

**Short answer review questions:**

2) What is the definition of an ion?

3) What is the definition of a chemical reaction?

4) In the liver, the following three molecules react with each other:

 H–N–H H–N–H O

 | | ||

 H H C

 ||

 O

 …to form the following two molecules:

 O H

 || /

 H–N–C–N–H O

 | | \

 H H H

 Write the chemical reaction in the space below. Your answer must have all the proper molecular formulas and be in the proper format for a chemical reaction.

**Answers to short answer review questions:**

2) An ion is an electrically charged atom or molecule.

3) A chemical reaction is when molecules are changed (their atoms become rearranged into new molecules).

4) 2NH3 + CO2 -> CON2H4 + H2O