This is a Class 1 exam

Lebanon Evangelical School
for Boys and Girls
Loueizeh - Baabda

Stage Exam 05

07MAY2024

Do NOT write in this box. Your MARK will be placed here.

Subject :	Chemistry
Class :	7A, 7B, 7C and 7E
Teacher :	Mrs. Dina Geha
Duration :	1 hour

Please write your answers on a separate sheet of paper, NOT on the question sheet.

Your name :		*Time taken to complete exam*
Your Class :		
Exam Room :		
How many sheets, including cover sheet :		

- Do not open this paper until the teacher in charge instructs you to do so.
- The most important thing to remember in taking an exam is NEVER PANIC.
- If you are caught cheating in this exam, you will be awarded zero for ALL exams that are taken on this day.

I- Indicate the True statements and correct the False ones. *(1pt. each)*

1. Physical properties can be observed without altering a substance's composition.
2. Volume is the amount of space an object takes.
3. Elements should be different on both sides of a chemical equation.
4. A physical change involves a change in a substance's composition.
5. The law of constant proportions states that mass is neither created nor destroyed during a chemical reaction; it is conserved.
6. Solutions are heterogeneous mixtures.

II- Identify the letter of the choice that best completes the statement or answers the question.
(1pt. each)

1. Each of the following procedures results in the formation of bubbles. Which of these is a physical change?

a. pouring an acid onto calcium carbonate
b. dropping an antacid tablet into water
c. heating water to its boiling point
d. pouring vinegar onto baking soda

2. What characteristic best describes what happens during a physical change?

a. composition changes
b. composition stays the same
c. form stays the same
d. mass is lost

3. An element's atomic number is the number of _____ in the nucleus of each atom of that element.

a. neutrons
b. electrons
c. protons
d. positrons

4. Which is NOT a clue that could indicate a chemical change?

a. change in color
b. change in shape
c. change in energy
d. change in odor

5. What property stays the same during physical and chemical changes?

a. density
b. shape
c. mass
d. arrangement of particles

6. What word best describes the type of materials that attract iron?

a. magnetic
c. mass
b. chemical
d. physical

III- Put the right term for each description given ***(1pt. each)***

1. Matter that is made up of only one kind of atom
2. A negatively charged particle that is part of every kind of matter
3. A positively charged particle that is present in the nucleus of all atoms
4. Uncharged particle in the nucleus of an atom
5. Region surrounding the nucleus in which the electrons move about
6. The number of protons in the nucleus of an atom of an element
7. A measure of the amount of matter contained in an object
8. The temperature at which solid changes to liquid
9. Two or more substances that are together, but not combined
10. A substance made up of atoms of two or more different elements joined by chemical bonds

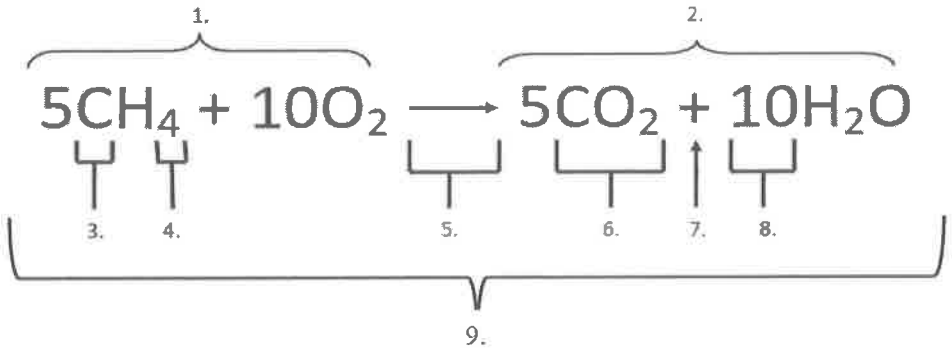
IV- Identify the following as physical (P) or chemical (C) changes. ***(0.5pt. each)***

1. Salt dissolves in water.
2. Milk sours.
3. Silver tarnishes.
4. Burning gasoline
5. An apple is cut.
6. Wood rots.
7. Heat changes water to steam.
8. Cooking pancakes.
9. Baking soda reacts to vinegar.
10. Dynamite explodes
11. Iron rusts.
12. A tire is inflated.
13. Alcohol evaporates
14. Food is digested.
15. Ice melts.
16. Paper towel absorbs water.

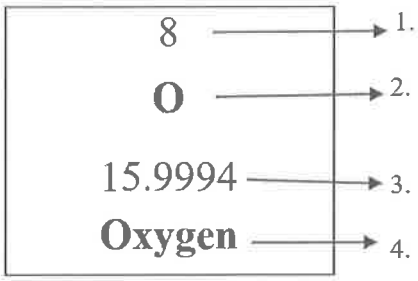
V- List whether the substance is a <u>Heterogeneous Mixture (He)</u>, or a <u>Homogeneous Mixture (Ho).</u>
(0.5pt. each)

1. Vanilla ice cream
2. Pepsi cola
3. Salt Water
4. Vinegar
5. Sand
6. Cake batter
7. Air
8. Paint
9. mineral water
10. Salad
11. Chicken Soup
12. Filtered fresh juice

VI- Label the parts below. (1 to 9) *(1pt. each)*

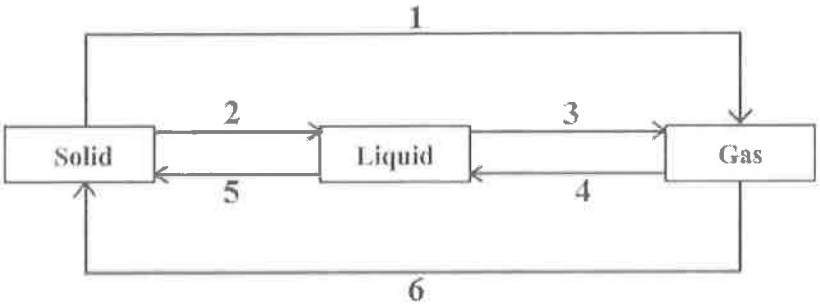


VII- Identify the items in the key below. *(1pt. each)*



VIII- Name the different ***changes*** *of states by labeling the following chart. (1 to 6)*

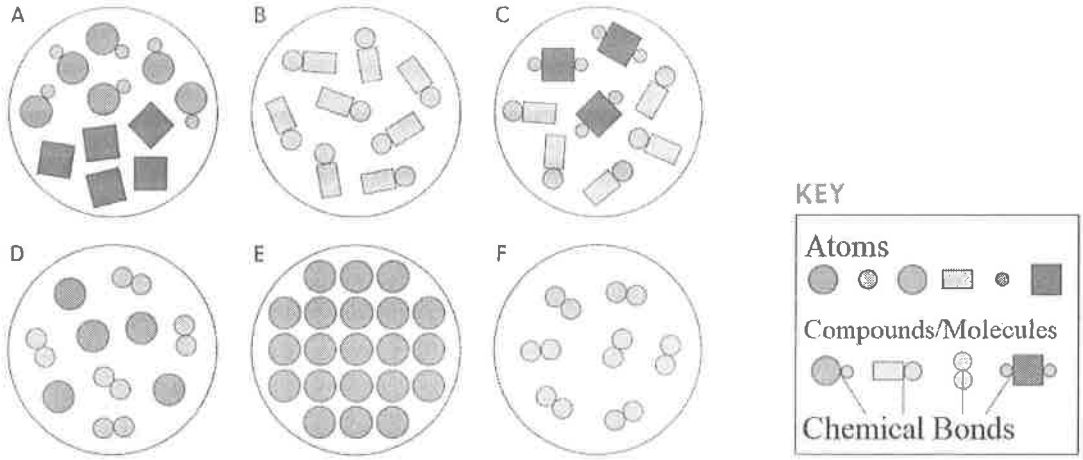
(1pt. each)



IX- Read each scenario. Decide whether a physical or chemical change has occurred and give evidence for your decision. *(2pts. each)*

1. You take out your best silver spoons and notice that they are very dull and have some black spots.
2. A straight piece of wire is coiled to form a spring.
3. Food color is dropped into water to give it color.
4. In a fireworks show, the fireworks explode giving off heat and light.

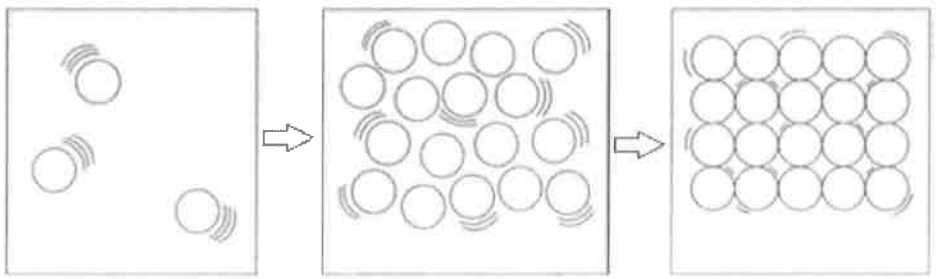
X- Use the models to answer the questions below.



1. Choose the letter(s) of the model that represents pure substances. *(1.5pts)*
2. Choose the letter(s) of the model that represents mixtures. *(1.5pts)*
3. Compare the pure substance models. Identify one similarity and one difference among them. *(2pts)*
4. Can a mixture be made of both compounds and elements? Support your answer with details from the models. *(2pts)*

XI- Short answers

1. **Name** two size independent properties and 2 dependent properties. *(2pts)*
2. **Identify** four **signs** of a chemical change. *(2pts)*
3. **Construct** an explanation for how the temperature and energy for a material changes during the physical changes represented by the diagram below. *(2pts)*



I- Indicate the True statements and correct the False ones. *(1pt. each)*

1. Physical properties can be observed without altering a substance's composition. **(True)**
2. Volume is the amount of space an object takes. **(True)**
3. Elements should be different on both sides of a chemical equation. **(The same)**
4. A physical change involves a change in a substance's composition. **(Chemical)**
5. The law of constant proportions states that mass is neither created nor destroyed during a chemical reaction; it is conserved. **(Law of conservation of mass)**
6. Solutions are heterogeneous mixtures. **(Homogenous)**

II- Identify the letter of the choice that best completes the statement or answers the question.
(1pt. each)

(C)1. Each of the following procedures results in the formation of bubbles. Which of these is a physical change?

a. pouring an acid onto calcium carbonate
b. dropping an antacid tablet into water
c. heating water to its boiling point
d. pouring vinegar onto baking soda

(B) 2. What characteristic best describes what happens during a physical change?

a. composition changes
b. composition stays the same
c. form stays the same
d. mass is lost

(C) 3. An element's atomic number is the number of _____ in the nucleus of each atom of that element.

a. neutrons
b. electrons
c. protons
d. positrons

(B) 4. Which is NOT a clue that could indicate a chemical change?

a. change in color
b. change in shape
c. change in energy
d. change in odor

(C) 5. What property stays the same during physical and chemical changes?

a. density
b. shape
c. mass
d. arrangement of particles

(A) 6. What word best describes the type of materials that attract iron?

a. magnetic
c. mass
b. chemical
d. physical

III- Put the right term for each description given ***(1pt. each)***

1. Matter that is made up of only one kind of atom **(Element)**
2. A negatively charged particle that is part of every kind of matter **(Electron)**
3. A positively charged particle that is present in the nucleus of all atoms **(Proton)**
4. Uncharged particle in the nucleus of an atom **(Neutron)**
5. Region surrounding the nucleus in which the electrons move about **(Electron Cloud)**
6. The number of protons in the nucleus of an atom of an element **(Atomic Number)**
7. A measure of the amount of matter contained in an object **(Mass)**
8. The temperature at which solid changes to liquid **(Melting point)**
9. Two or more substances that are together, but not combined **(Mixture)**
10. A substance made up of atoms of two or more different elements joined by chemical bonds **(Compound)**

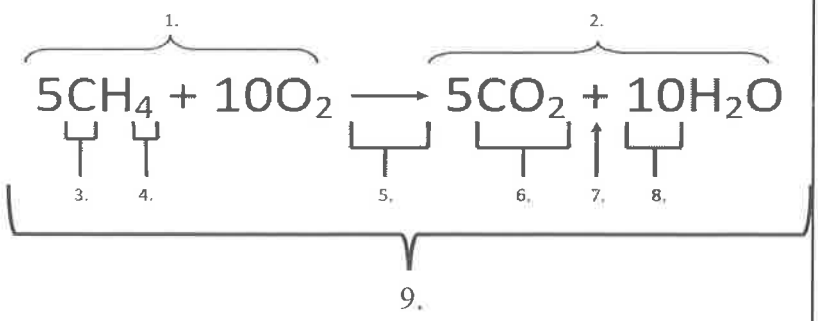
IV- Identify the following as physical (P) or chemical (C) changes. ***(0.5pt. each)***

1. Salt dissolves in water. **(P)**
2. Milk sours. **(C)**
3. Silver tarnishes. **(C)**
4. Burning gasoline. **(C)**
5. An apple is cut. **(P)**
6. Wood rots. **(C)**
7. Heat changes water to steam. **(P)**
8. Cooking pancakes. **(C)**
9. Baking soda reacts to vinegar. **(C)**
10. Dynamite explodes **(C)**
11. Iron rusts. **(C)**
12. A tire is inflated. **(P)**
13. Alcohol evaporates **(P)**
14. Food is digested. **(C)**
15. Ice melts. **(P)**
16. Paper towel absorbs water. **(P)**

V- List whether the substance is a Heterogeneous Mixture (He), or a Homogeneous Mixture (Ho).
(0.5pt. each)

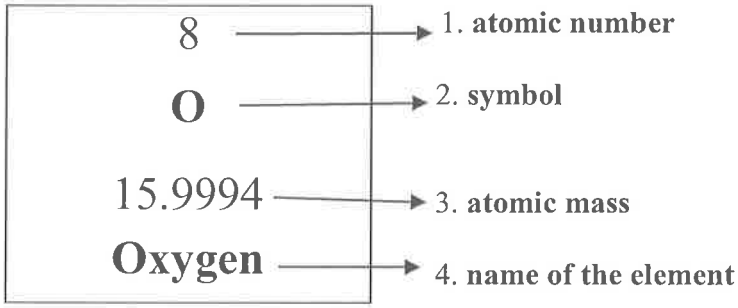
1. Vanilla ice cream **(Ho)**
2. Pepsi cola **(He)**
3. Salt Water **(Ho)**
4. Vinegar **(Ho)**
5. Sand **(He)**
6. Cake batter **(Ho)**
7. Air **(Ho)**
8. Paint **(Ho)**
9. mineral water **(Ho)**
10. Salad **(He)**
11. Chicken Soup **(He)**
12. Filtered fresh juice **(Ho)**

VI- Label the parts below. (1 to 9) *(1pt. each)*



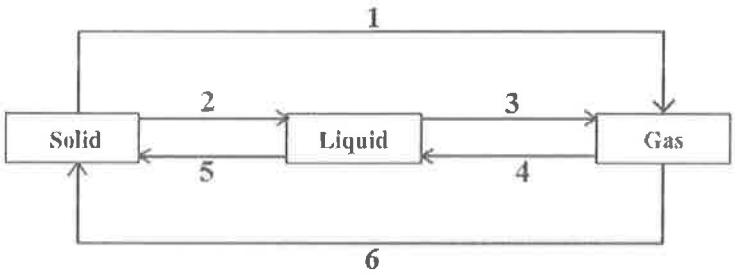
1. Reactants
2. Products
3. Symbol
4. Subscript
5. Yields/produces
6. Formula
7. Plus sign
8. Coefficient
9. Chemical equation

VII- Identify the items in the key below. *(1pt. each)*



VIII- Name the different ***changes*** *of states by labeling the following chart. (1 to 6)*

(1pt. each)



1. Sublimation
2. Melting
3. Vaporization
4. Condensation
5. Freezing
6. Deposition

IX- Read each scenario. Decide whether a physical or chemical change has occurred and give evidence for your decision. *(2pts. each)*

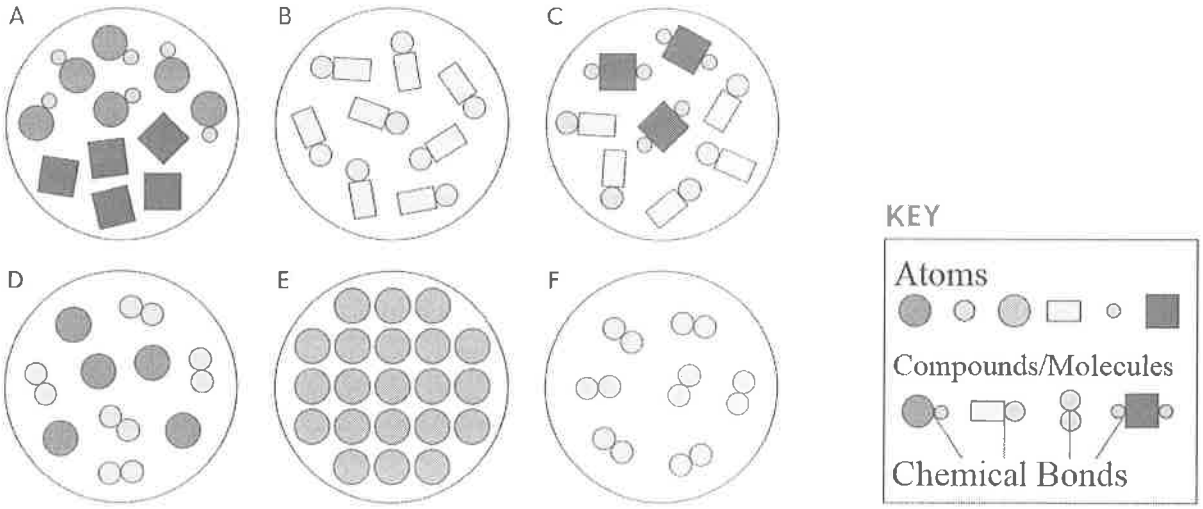
1. You take out your best silver spoons and notice that they are very dull and have some black spots. **(Chemical- silver changes color – silver oxide forms)**

2. A straight piece of wire is coiled to form a spring. **(Physical- no change in substance)**

3. Food color is dropped into water to give it color. **(Physical-no change in substance-mixture forms)**

4. In a fireworks show, the fireworks explode giving off heat and light. **(Chemical- identity of the substance changes- new product is formed- energy was released)**

X- Use the models to answer the questions below.



1. Choose the letter(s) of the model that represents pure substances. *(1.5pts)* **(B – E – F)**

2. Choose the letter(s) of the model that represents mixtures. *(1.5pts)* **(A – C – D)**

3. Compare the pure substance models. Identify one similarity and one difference among them. *(2pts)*
(Similarity: made of atoms)
(Difference: elements are made up of only 1 kind of atoms, while compounds are made of 2 or more atoms)

4. Can a mixture be made of both compounds and elements? Support your answer with details from the models. *(2pts)* **(Yes. Looking at model A, compounds and elements formed a mixture of these 2 substances)**

XI- Short answers

1. Name two size independent properties and 2 dependent properties. *(2pts)* **(size independent: shape/color) (size dependent: mass/volume)**

2. Identify four signs of a chemical change. *(2pts)* **(change in color, in odor- release of energy, formation of bubbles)**

3. **Construct** an explanation for how the temperature and energy for a material changes during the physical changes represented by the diagram below. *(2pts)* **(As energy is removed from the gas, its temperature decreases. As its condensation point, the temperature remains constant, and the gas changes to a liquid. The temperature then continues to decrease. At its freezing point, the temperature again remains constant, and the liquid changes to a solid.)**

