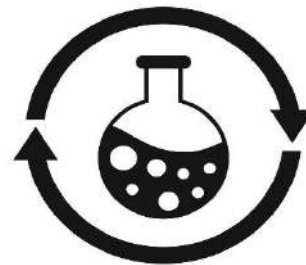


Name _____ Date _____



PHYSICAL VS CHEMICAL CHANGES QUIZ - Answer Key

1. Define the following terms:

a. Physical change

Changes that lead to alterations in the physical state or appearance of a substance without changing its chemical nature or composition.

b. Chemical change

Changes that lead to changes in the chemical nature of a substance.

c. Temporary chemical change

Changes that lead to changes in the chemical properties of a substance temporarily. The original substance can be reversed to its initial state under specific conditions.

d. Permanent chemical change

Changes that lead to changes in the chemical properties of a substance permanently. Results in the formation of new substances with different chemical compositions.

2. Which of the following are physical changes? D

- A. Burning a newspaper
- B. Steel girders become rusty when left open to moist air
- C. Carbonic acid in soft drinks decomposes to carbon dioxide in the stomach after consumption
- D. Pulverizing a paracetamol tablet into a powder

3. Which of the following are chemical changes: A, B, D, E, G

- A. Growth of a plant
- B. Rusting of iron
- C. Mixing of iron fillings and sand
- D. Cooking of food

- E. Digestion of food
- F. Freezing of water
- G. Burning of candle

4. Classify the following changes as chemical and physical changes by putting a tick in the appropriate box:

Change	Physical change	Chemical change
Cutting of a tree	✓	
Melting of butter in a pan	✓	
Rusting of iron		✓
Formation of clouds in the air	✓	
Dissolving common salt in water	✓	
Making fruit salad with raw fruits	✓	
Heating hydrated copper sulfate in air		✓
Heating water into steam	✓	
Milk going sour		✓
Acid rain drips onto limestone and produces carbon dioxide gas		✓
Breaking a glass into pieces	✓	
Digesting food into nutrients		✓
Heating of naphthalene	✓	
Electrical conduction by copper wire	✓	
Evaporation	✓	
Wood rotting		✓
Pancake cooking on a griddle		✓
Grass growing on a lawn		✓
Water is absorbed in a paper towel	✓	

Sugar browns when heated		✓
An egg boils in water		✓
Heating and cooling zinc oxide	✓	
Burning magnesium in the air		✓

5. Burning of candles involves both physical and chemical changes. Explain

Two processes occur during the burning of a candle: melting of wax and burning of the thread and wax. The former is a physical change while the latter is a chemical change.

6. Eating chocolate and its digestion involves both physical and chemical changes. Explain

During the eating of chocolate, it melts in the mouth. This is a physical change. When it is digested in the stomach, compounds present in the chocolate are broken down into water and carbon dioxide, releasing energy. This is a chemical change.

7. Complete the table below by giving at least 3 differences between physical changes and chemical changes.

Physical Changes	Chemical Changes
Result in changes in the physical state or appearance of a substance without changing its chemical nature or composition	Result in change in chemical nature or composition of a substance.
No new substance is formed (The substances changed either their	New substances with different chemical properties are formed.

physical states or color but didn't change chemically)	
Temporary (easily reversible i.e original substance can be recovered)	Permanent (are irreversible i.e. original substance cannot be recovered)
The mass of the substances does not change	Are accompanied by a change in mass
Are not accompanied by net heat changes	Heat energy is released or absorbed
Some examples include freezing, melting, boiling, condensation, sublimation, deposition, mixing, magnetizing, filtering, etc	Some examples include combustion, oxidation, decomposition, rusting, and many types of chemical reactions that lead to the creation of new compounds or molecules