_____ _____
Student Name **Class**

Chemical Reactions

1. A chemical reaction takes place when two or more …
A. molecular compound are mixed
B. ionic compounds are mixed
C. substances are mixed
D. substances combine to form new substances

2. Different types of chemical reactions can occur when two or more substances react to form new substances. Corrosion (iron + oxygen + water ⟶ rust) is this type of chemical reaction.
A. exchange
B. combination
C. displacement
D. decomposition

3. A chemical change, which **releases** energy, is called …
A. exothermic
B. endothermic
C. combustible
D. dangerously reactive

4. Chemical reactions can be written as **word equations** which gives the names of all the reactants followed by an arrow which points to the names of all the products.
eg. (***iron + oxygen + water → rust***)
The arrow in the word equation indicates …
A. The rate of the reaction
B. The reactants produced
C. The products produced
D. What is used in the reaction

5. Use the following chemical reaction word equation to answer the question.

wood + oxygen ⟶ carbon dioxide + water + energy released

The reactants in this chemical word equation are …
A. wood and oxygen
B. carbon dioxide and water
C. oxygen and energy
D. wood and energy

6. A chemical equation may look complicated, but, by knowing what you know now, it should be much easier to understand

$$HC_2H_3O_{2(l)} + NaHCO_{3(g)} \rightarrow NaC_2H_3O_{2(aq)} + H_2O_{(l)} + CO_{2(g)}$$

This chemical equation happens when you mix …
A. vinegar and calcium carbonate
B. carbon dioxide and flavored water
C. calcium carbonate and water
D. vinegar and baking soda

7. A chemical reaction occurs when this evidence is present …

A. a solution is formed
B. a change of state occurs
C. energy is needed or released
D. the reaction is reversible

8. The following word equation identifies what happens when hydrogen peroxide is left out in the sun. It changes to water and oxygen gas.

A. Water + Oxygen ⟶ Hydrogen peroxide
B. Hydrogen peroxide + Energy ⟶ Water + Oxygen
C. Water + Energy + Oxygen ⟶ Hydrogen peroxide
D. Hydrogen peroxide + Oxygen ⟶ Water + Energy

9. The reaction above is classified as …

A. catalytic
B. exothermic
C. endothermic
D. oxidization

10. Fire keeps going because of three factors. These factors are …

A. fire - water - air
B. fire – fuel - air
C. fuel – air - energy
D. fuel - air - heat

11. The following reaction takes place in the cells in your body.

food + oxygen ⟶ carbon dioxide + water + energy used to keep cells alive
($C_6H_{12}O_6$) (O_2) (CO_2) (H_2O)

This word equation represents …

A. cellular respiration
B. photosynthesis
C. transpiration
D. combustion

12. The difference between a ***combustion*** reaction and a ***corrosion*** reaction is **..**

A. intensity
B. products
C. speed
D. reactants

13. To treat an injury in sport, ***cold packs*** are used to reduce the swelling where the injury occurs. These cold packs are examples of …

A. Endothermic reactions
B. Exothermic reactions
C. Combustion reactions
D. Corrosion reactions

14. Some substances are used in foods to slow down decomposition. Plant seeds prevent germination until the right conditions are present by these natural …

A. reactors
B. enzymes
C. catalysts
D. inhibitors

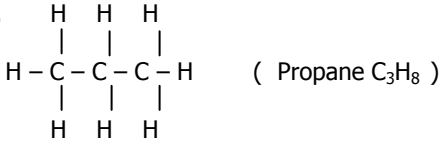
15. By crushing a tablet of medicine before you take it, you are changing the reaction rate by changing the …

A. temperature
B. surface area
C. concentration
D. a catalyst

16. Corrosion protection involves protecting metal from contact with the environment and the factors that affect the reaction rate of this chemical reaction. Coating a corrosive metal with a thin layer of zinc is called …

A. galvanization
B. sterilization
C. electrolysis
D. Electro-engineering

17.



(Propane C_3H_8)

The burning of propane (C_3H_8) in a barbeque is an exothermic reaction that produces heat to cook the food. If the heat is too intense, the products being cooked (will be burnt) will be changed into.

A. hydrocarbons
B. hydrogen dioxide
C. carbon monoxide
D. pure carbon

18. Alexander performed an experiment with Alka-Seltzer and water. He carefully weighed the reactants and found that the total mass was 110 g. When he recovered the products and weighed them the combined mass was only 106g. The difference was 4g. What would account for the difference in mass?

A. The mass of the reactants didn't account for the oxygen need for the reaction to occur.
B. The mass of the products didn't account for the gas bubbles that were released.
C. The total mass did not include the mass of the beaker he used.
D. The beaker had a crack in it and some of the water leaked out.

19. A catalyst was used in an experiment. The effect that the catalyst had was …

A. There was no effect at all
B. The reaction happened slower
C. The reaction produced more products
D. The reaction happened faster

20. Enzymes are catalysts used in our body to break down food. Without the presence of enzyme the reactions in our body would …

A. not occur at all
B. happen more quickly
C. require much higher temperatures
D. produce different substances

21. Chewing on a **TUMS** tablet enables the reaction that occurs in our mouth and body to happen faster. This is because we have increased the …

A. surface area
B. concentration
C. temperature
D. work of enzymes

22. Conserving mass means to keep the same amount. The **Law of Conservation of Mass** does not apply to nuclear reaction because …

A. this reaction can destroy mass
B. nothing happens to the mass in this reaction
C. energy is changed into mass
D. mass is changed into energy

23. Burning fossil fuels (such as propane) produces carbon monoxide, carbon dioxide, sulfur oxides, nitrogen oxides, smoke, soot, ash and heat. These products are called …

A. pesticides
B. pollutants
C. combustibles
D. hydrocarbons

24. In a ***nuclear reaction*** some of the mass is converted into energy.
as expressed by this scientist …

_____ _____

In his famous equation …

ANSWER KEY

_____ _____
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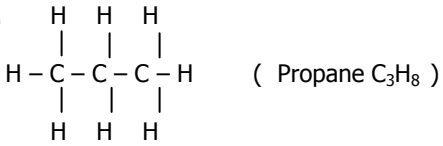

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_____ALBERT EINSTEIN_____

In his famous equation …

$$E = MC^2$$