

Year 10 Science

**Chemistry 2 Test: Chemical reactions**

**SECTION 1: MULTIPLE CHOICE** (1 mark each)

Circle your answer on the multiple choice answer sheet.

1. A student mixed two clear liquids together and then observed them. Which of these observations does **not** indicate that a chemical reaction has taken place?
   1. They changed colour.
   2. They went cloudy.
   3. They made bubbles and got warm.
   4. The mass stays the same.
2. Which one of the following is NOT an example of a chemical reaction?
3. Coating a piece of iron with copper by dipping the iron into a solution of copper sulfate.
4. Burning a piece of magnesium ribbon.
5. The passing of an electric current through the filament of a light bulb.
6. Rusting of iron.
7. A student put a small amount of two white powders in a test tube, then put in a stopper and shook it vigorously for a few seconds. To his surprise, the test tube went very cold and the solids turned to liquid. This kind of reaction is
   1. a physical change.
   2. an exothermic reaction.
   3. an endothermic reaction.
   4. a precipitation reaction.
8. Hydrogen gas is produced from the reaction of magnesium metal with hydrochloric acid. Which of the following could not be used to monitor the rate of the reaction?
9. concentration of magnesium ions in solution
10. volume of hydrogen gas produced
11. mass of magnesium remaining
12. total mass of reactants and products in a closed container
13. When a complex compound is broken into simpler compounds in a reaction, the reaction type is called
    1. combination.
    2. decomposition.
    3. displacement.
    4. combustion.
14. Which of the following explains why milk “goes off” quicker if it’s left out of the fridge?
    1. Chemical reactions happen faster at higher temperatures.
    2. Chemical reactions happen faster in daylight.
    3. Chemical reactions happen faster when you stir them.
    4. Chemical reactions happen faster then the ingredients are more concentrated.
15. Which of the following does **not** affect the rate of a chemical reaction?
    1. The amount of each reactant.
    2. The temperature.
    3. The concentration of reactants.
    4. The state of the reactants.
16. Which of these word equations describes a combustion reaction?
    1. Methane + oxygen 🡪 carbon dioxide + water
    2. Silver nitrate + copper 🡪 copper nitrate + silver
    3. Hydrochloric acid + zinc 🡪 hydrogen + zinc chloride
    4. Water 🡪 hydrogen + oxygen

**The next 2 questions refer to the equation below:**

2C8H18(l) + 25O2(g) 🡪 16CO2(g) + 18H2O(g)

1. Which of the following is a reactant?
   1. water
   2. carbon dioxide
   3. oxygen gas
   4. hydrochloric acid
2. Octane (C8H18) is a
   1. reactant
   2. product
   3. catalyst
   4. base



Name\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

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**Chemistry 2 Test: Chemical reactions**

**Multiple choice answer section.**

Circle your choice:

1. **A B C D**
2. **A B C D**
3. **A B C D**
4. **A B C D**

**10. A B C D**

1. **A B C D**
2. **A B C D**
3. **A B C D**
4. **A B C D**
5. **A B C D**

**SECTION 2: WRITTEN**

**Write your answers in the spaces provided.**

1. When David added some hydrochloric acid solution to some zinc metal, he noticed that the zinc bubbled and produced the flammable gas, hydrogen. Zinc chloride was also made.

For this reaction

* 1. Name the reactants (2)
  2. Name the products (2)
  3. Write a word equation for this reaction (1)
  4. Write a balanced chemical equation for this reaction (2)
  5. List three ways that David could speed up the rate of this reaction? (3)

1. When fuel, such as ethanol, is burned in oxygen, it releases a lot of heat and light.

Tick any that apply to this reaction (You can tick more than one) (6)

* This is classified as combustion.
* This is a type of exothermic reaction.
* Ethanol is a reactant.
* This is a type of decomposition reaction.
* The reactants contain more chemical potential energy than the products.
* This reaction would go faster if it there was less oxygen in the air.

1. Balance the following equations (2)

* 1. N2 + H2 🡪 NH3
  2. Na2CO3 + HCl 🡪 NaCl + H2O + CO2

1. What is a catalyst? (2)

End of Test (Out of 30)