ENGLAND GCSE COMBINED SCIENCE OCR GATEWAY HIGHER · UNIT 9 · 25 QUESTIONS

Chemical Reactions — Practice Test

This practice test was made by AI and there may be mistakes. If a question or answer looks wrong, use the Flag a mistake button so it can be fixed.

1 **A chocolate cake is baked. Is baking a chemical change?**

- A sometimes
- B no
- C never
- D yes

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2 **Paintbrushes are used with paint. What is paint an example of?**

- A an element
- B a pure substance
- C a compound
- D a formulation

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3 **A cup of coffee cools down. Energy is transferred to the surroundings. What type of change is this?**

A a neutralisation

B a reversible reaction

C a chemical change

D an energy transfer

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4 **An ice cream cone melts in the Sun. What is happening to the particles in the ice cream?**

A they gain energy and move more

B they lose energy and slow down a lot

C they stop moving

D they get smaller

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5 **A castle wall is made of stone. What type of rock is limestone?**

- A metamorphic
- B sedimentary
- C igneous
- D volcanic

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6 **Lemons contain citric acid. What do acids make with metals?**

- A water only, nothing else
- B a salt and water, never hydrogen
- C a salt and hydrogen
- D a salt and oxygen gas

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7 **Which pair of metals gives the biggest voltage in a cell?**

A zinc and iron in the same cell

B copper and zinc in the same cell

C iron and copper in the same cell

D magnesium and copper

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8 **During the electrolysis of sodium chloride solution, why is hydrogen made at the cathode?**

A chlorine is made at the cathode instead

B sodium ions cannot gain electrons

C hydrogen is more reactive than sodium

D sodium is more reactive than hydrogen

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9 **What do acids produce in water?**

A hydrogen ions

B oxygen

C hydroxide ions

D chloride ions

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10 **What is the relative formula mass of sulfuric acid, H_2SO_4?**

A 66

B 82

C 98

D 114

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11 **What is the relative formula mass of calcium oxide, CaO?**

- A 64
- B 56
- C 52
- D 112

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12 **How many moles are there in 20 g of a substance with a relative formula mass of 20 ?**

- A 3
- B 2
- C 0.5
- D 1

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13 **During electrolysis, metal ions gain electrons at the cathode. What is this process called?**

A oxidation

B neutralisation

C displacement

D reduction

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14 **What do hydrogen fuel cells make?**

A electricity and water

B electricity and oxygen

C electricity and carbon dioxide

D heat and carbon dioxide

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15 **Why does the limiting reactant control how much product is made?**

- A the reaction stops when it runs out
- B the catalyst is used up with it
- C the product stops the reaction happening
- D the other reactants evaporate away

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16 **What is the difference between a strong acid and a weak acid?**

- A a strong acid is always dangerous
- B a strong acid is more concentrated
- C a strong acid is fully ionised
- D a strong acid has a higher pH

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17 **Why is cryolite added to aluminium oxide in its electrolysis?**

- **A** it makes the reaction go faster
- **B** it makes the aluminium purer
- **C** it lowers the melting point
- **D** it stops the carbon anodes burning

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18 **The maximum possible mass of product is 40 g. A student makes 16 g. What is the percentage yield?**

- **A** 50%
- **B** 40%
- **C** 80%
- **D** 30%

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19 **How many moles of gas occupy 48 cubic decimetres at room temperature and pressure?**

A 2

B 1

C 4

D 3

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20 **Why is the precipitate washed with distilled water?**

A to dissolve the precipitate

B to make the precipitate dry out fully

C to remove soluble impurities

D to add more precipitate

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21 **Which piece of apparatus measures the volume of acid in a titration?**

- **A** a pipette
- **B** a beaker
- **C** a measuring cylinder
- **D** a burette

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22 **What is an ionic equation?**

- **A** an equation with no charges shown at all
- **B** an equation showing only the reacting ions
- **C** an equation for ionic bonding only
- **D** an equation showing every ion in the mixture

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23 **Will magnesium displace iron from its salt solution?**

- A yes
- B only when heated
- C no
- D only with a catalyst

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24 **A reaction makes 30 g of useful product from 50 g of reactants in total. What is the atom economy?**

- A 60%
- B 180%
- C 120%
- D 30%

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25

A solution contains 2 moles of solute in 1 cubic decimetres of solution. What is its concentration in moles per cubic decimetre?

A 4 mol/dm³

B 2 mol/dm³

C 1 mol/dm³

D 6 mol/dm³

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Flag a mistake

ANSWER KEY

1.	D	**10.**	C	**19.**	A
2.	D	**11.**	B	**20.**	C
3.	D	**12.**	D	**21.**	D
4.	A	**13.**	D	**22.**	B
5.	B	**14.**	A	**23.**	A
6.	C	**15.**	A	**24.**	A
7.	D	**16.**	C	**25.**	B
8.	D	**17.**	C		
9.	A	**18.**	B		

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