ENGLAND GCSE CHEMISTRY OCR GATEWAY HIGHER · UNIT 3 · 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 **Lemons contain citric acid. What do acids make with metals?**

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

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2 **A castle is built of limestone. What is limestone made of?**

- A calcium carbonate
- B calcium sulfate, found in plaster
- C sodium chloride, common salt
- D magnesium oxide, a white powder

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3 **Paintbrushes apply paint to a wall. What is the paint made of?**

A a mixture of substances

B a single compound, nothing else

C a single element, nothing else

D pure water with nothing in it

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4 **A cup of coffee is left for an hour. What happens to its temperature?**

A it stays the same all day

B it rises above room temperature

C it falls to room temperature

D it falls to zero degrees

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5 **A chocolate cake rises in the oven. What makes it rise?**

- A the sugar freezes
- B the egg evaporates
- C the flour melts
- D a gas is made

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6 **An ice cream cone is put in a freezer. What happens to the liquid?**

- A it evaporates
- B it freezes
- C it boils
- D it condenses

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7 **What forms at the anode during the electrolysis of copper sulfate solution?**

A lead

B oxygen

C bromine

D hydrogen

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8 **Which acid makes a nitrate salt?**

A hydrochloric acid

B nitric acid

C ethanoic acid

D sulfuric acid

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

A hydroxide ions

B hydrogen ions

C oxygen

D chloride ions

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10 **What is made when an acid reacts with a carbonate?**

A a salt and hydrogen gas from the acid

B a salt, water and carbon dioxide

C water only and nothing else at all

D a salt and oxygen gas from the air

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

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

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

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

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13 **A solution contains 3 moles of solute in 2 cubic decimetres of solution. What is its concentration in moles per cubic decimetre?**

- A 4.5 mol/dm³
- B 0.75 mol/dm³
- C 3 mol/dm³
- D 1.5 mol/dm³

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

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

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15 **When copper sulfate solution is electrolysed with carbon electrodes, what is made at the cathode?**

A copper

B sulfur from the sulfate ions

C oxygen gas from the water

D hydrogen gas from the water

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16 **What is the mass of 5 moles of a substance with a relative formula mass of 40?**

A 200 g

B 210 g

C 100 g

D 400 g

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17 **What volume does 4 moles of carbon dioxide occupy at room temperature and pressure?**

A 84 dm^3

B 96 dm^3

C 108 dm^3

D 192 dm^3

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18 **How many moles are there in 40 g of a substance with a relative formula mass of 20 ?**

A 6

B 2

C 4

D 1

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

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

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20 **A solution has a hydrogen ion concentration of 10^{-1}mol per cubic decimetre. What is its pH?**

- **A** 3
- **B** 2
- **C** 1
- **D** 0

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21 **In a reaction, hydrogen runs out first. Which reactant is limiting?**

- **A** hydrogen
- **B** the catalyst in the reaction
- **C** the other reactant in the mixture
- **D** the product that forms first

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22 **What is the half equation for oxygen gas forming at the anode?**

- **A** $O_2 \rightarrow 2O^{2-} + 4e^-$
- **B** $2O^{2-} \rightarrow O_2 + 4e^-$
- **C** $4O^{2-} \rightarrow 2O_2 + 4e^-$
- **D** $2O^{2-} + 4e^- \rightarrow O_2$

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23 **What is one disadvantage of hydrogen fuel cells?**

- A they are noisy when running
- B hydrogen is hard to store
- C they use a lot of water
- D they make carbon dioxide

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

- A oxidation
- B reduction
- C neutralisation
- D displacement

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25

What decides the voltage of a chemical cell?

A the size of the cell

B the temperature of the room

C the metals used

D the colour of the metals

Understand It with Pulse

Flag a mistake

ANSWER KEY

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

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