ENGLAND GCSE COMBINED SCIENCE EDEXCEL HIGHER · UNIT 12 · 25 QUESTIONS

Chemical Changes — 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 cup of coffee cools down. Energy is transferred to the surroundings. What type of change is this?**

- A an energy transfer
- B a neutralisation
- C a chemical change
- D a reversible reaction

Understand It with Pulse | Flag a mistake

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

- A pure water with nothing in it
- B a mixture of substances
- C a single element, nothing else
- D a single compound, nothing else

Understand It with Pulse | Flag a mistake

3 **Lemons contain citric acid. What is the pH of lemon juice likely to be?**

- A 7
- B 14
- C 2
- D 12

Understand It with Pulse | Flag a mistake

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

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

Understand It with Pulse | Flag a mistake

5 **A castle built of limestone is damaged by acid rain. Which gas causes acid rain?**

- A oxygen
- B sulfur dioxide
- C carbon dioxide
- D nitrogen

Understand It with Pulse | Flag a mistake

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

- A they get smaller
- B they gain energy and move more
- C they lose energy and slow down a lot
- D they stop moving

Understand It with Pulse | Flag a mistake

7 **What happens to the pH when an acid is diluted?**

- **A** it stays the same
- **B** it falls to zero
- **C** it increases
- **D** it decreases

Understand It with Pulse | Flag a mistake

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

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

Understand It with Pulse | Flag a mistake

9 **Will zinc displace copper from its salt solution?**

A only when heated

B yes

C no

D only with a catalyst

Understand It with Pulse | Flag a mistake

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

A 1

B 0.5

C 0.25

D 1.5

Understand It with Pulse | Flag a mistake

11 **When concentrated sodium chloride solution is electrolysed, what is made at the cathode?**

A chlorine gas from the salt

B hydrogen

C oxygen gas from the water

D sodium metal from the solution

Understand It with Pulse | Flag a mistake

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

A displacement

B reduction

C neutralisation

D oxidation

Understand It with Pulse | Flag a mistake

13 **A solution has a hydrogen ion concentration of 10^{-3}mol per cubic decimetre. What is its pH?**

A 3

B 4

C 5

D 2

Understand It with Pulse | Flag a mistake

14 **What is the negative electrode called?**

A the cell

B the electrolyte

C the anode

D the cathode

Understand It with Pulse | Flag a mistake

15 **Which acid makes a sulfate salt?**

A hydrochloric acid

B sulfuric acid

C ethanoic acid

D nitric acid

Understand It with Pulse | Flag a mistake

16 **Which two solutions make barium sulfate when mixed?**

A barium chloride and sodium sulfate

B barium nitrate and sodium chloride

C barium chloride and sodium chloride

D sodium sulfate and sodium chloride

Understand It with Pulse | Flag a mistake

17 **What is made at the negative electrode in aluminium extraction?**

A oxygen gas from the air

B cryolite from the mixture

C aluminium

D carbon dioxide gas

Understand It with Pulse | Flag a mistake

18 **What forms at the anode during the electrolysis of sodium chloride solution?**

A lead

B chlorine

C bromine

D hydrogen

Understand It with Pulse | Flag a mistake

19 **What is the half equation for copper forming at the cathode?**

- **A** $Cu + 2e^- \rightarrow Cu^{2+}$
- **B** $Cu^{2+} + 2e^- \rightarrow Cu$
- **C** $Cu^{2+} \rightarrow Cu + 2e^-$
- **D** $2Cu^{2+} + 2e^- \rightarrow 2Cu$

Understand It with Pulse | Flag a mistake

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

- **A** hydrogen gas from the water
- **B** copper
- **C** oxygen gas from the water
- **D** sulfur from the sulfate ions

Understand It with Pulse | Flag a mistake

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

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

Understand It with Pulse | Flag a mistake

22 **What is made when an acid reacts with an alkali?**

- **A** hydrogen only
- **B** a salt and hydrogen
- **C** a salt and water
- **D** a salt and oxygen

Understand It with Pulse | Flag a mistake

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

A sulfuric acid

B ethanoic acid

C hydrochloric acid

D nitric acid

Understand It with Pulse | Flag a mistake

24 **How are insoluble salts made?**

A by filtration

B by precipitation

C by evaporation of the solvent

D by distillation

Understand It with Pulse | Flag a mistake

25 **Why do the carbon anodes in aluminium extraction need replacing?**

A they dissolve in the aluminium

B they melt in the hot electrolyte

C they burn away in oxygen

D they are used up making cryolite

Understand It with Pulse | Flag a mistake

ANSWER KEY

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

© 2026 Brett Robbins. All Rights Reserved.