ENGLAND GCSE COMBINED SCIENCE EDEXCEL FOUNDATION · UNIT 13 · 25 QUESTIONS

# Extracting Metals and Equilibria — 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** **An ice cream cone melts in the Sun. What is happening to the particles in the ice cream?**

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

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

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

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

- A it falls to zero degrees
- B it rises above room temperature
- C it falls to room temperature
- D it stays the same all day

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4

## A castle is built of limestone. What is limestone made of?

A sodium chloride, common salt

B calcium sulfate, found in plaster

C magnesium oxide, a white powder

D calcium carbonate

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5

## Silver coins conduct electricity well. Why?

A they are cold

B they are shiny and reflective

C they are heavy

D they have free electrons

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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 metal is least reactive?**

A zinc

B gold

C magnesium

D iron

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8 **In the Haber process, 1 mole of nitrogen reacts with 3 moles of hydrogen. How many moles of hydrogen react with 4 moles of nitrogen?**

- A 12
- B 11
- C 24
- D 13

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9 **What is a displacement reaction?**

- A a more reactive metal takes the place of a less reactive one
- B two metals swap places in a solution
- C a metal dissolves in water
- D a less reactive metal takes the place of a more reactive metal

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10 **What is oxidation?**

A gain of oxygen

B loss of oxygen from a substance

C gain of a metal from an ore

D loss of a metal from an ore

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11 **Why is a catalyst used in the Haber process?**

A to use up the nitrogen faster

B to shift the equilibrium towards ammonia

C to raise the temperature of the reaction

D to speed the reaction up

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**12** **What happens to equilibrium if the temperature rises?**

- **A** the reaction stops
- **B** it moves to take in heat
- **C** it moves to give out heat
- **D** it stays in the same place

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**13** **What shows the order of reactivity of metals?**

- **A** a list of metals in alphabetical order
- **B** the reactivity series
- **C** a list of metals in order of their cost
- **D** the periodic table, in order of atomic number

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14 **What is the reactivity series?**

A a list of metals in order of their cost

B a list of metals in order of reactivity

C a list of metals in alphabetical order

D a list of metals in order of their melting points

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15 **What is a dynamic equilibrium?**

A the reaction has stopped completely and nothing changes

B the products have all been removed

C forward and reverse rates are equal

D all the reactants have been used up

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16 **In the Haber process, 1 mole of nitrogen reacts with 3 moles of hydrogen. How many moles of hydrogen react with 3 moles of nitrogen?**

- A 18
- B 9
- C 8
- D 10

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17 **How are metals below carbon in the reactivity series extracted?**

- A by dissolving them in water first
- B by heating them on their own in air
- C by reduction with carbon
- D by electrolysis, which needs a lot of energy

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**18** **What happens to an equilibrium if the temperature is raised?**

- A it stays exactly where it was before
- B it shifts to the endothermic side
- C the reaction stops completely at once
- D it shifts to the exothermic side, releasing heat

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**19** **Will zinc displace copper from copper sulfate?**

- A yes, zinc is more reactive
- B no, copper is more reactive
- C yes, copper is more reactive
- D no, zinc is less reactive

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20 **In the Haber process, 1 mole of nitrogen reacts with 3 moles of hydrogen. How many moles of hydrogen react with 2 moles of nitrogen?**

- A 12
- B 5
- C 6
- D 7

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21 **Why does iron displace copper from copper sulfate?**

- A iron is less reactive than copper
- B iron is more reactive than copper
- C iron dissolves in water more easily
- D copper is more reactive than iron

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22 **Which metal is extracted by electrolysis?**

A aluminium

B copper, which is extracted with carbon

C zinc, which is extracted with carbon

D iron, which is extracted with carbon

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23 **What does the Haber process make?**

A nitrogen gas for the air

B ammonia

C ammonium nitrate, used as a fertiliser

D nitric acid, used to make fertilisers

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24 **Will copper displace zinc from zinc sulfate?**

A yes, copper is more reactive

B yes, zinc is less reactive

C no, zinc is more reactive

D no, copper is less reactive

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25 **Why is aluminium extracted by electrolysis?**

A it is cheap to do

B it is too reactive for carbon

C it melts easily

D carbon does not react with it

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# ANSWER KEY

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

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