ENGLAND GCSE COMBINED SCIENCE OCR TWENTY FIRST CENTURY HIGHER · UNIT 8 · 25 QUESTIONS

Chemical Patterns — 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 **Silver coins conduct electricity well. Why?**

- A they have free electrons
- B they are shiny and reflective
- C they are cold
- D they are heavy

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2 **A thermometer is placed in hot water. What happens to the liquid inside the thermometer?**

- A it contracts
- B it expands
- C it freezes
- D it evaporates

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3 **Glass marbles are shaken in a tray. What does this model?**

A particles gaining energy

B particles disappearing completely

C particles bonding together

D particles freezing into place

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4 **A swimming pool holds water. Why does a person float in the pool?**

A they are made of air

B their density is close to water

C the water pushes them down

D they are heavier than water and sink

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5 **Hardcover books are dropped. What happens to their speed as they fall?**

A it decreases

B it becomes zero

C it increases

D it stays the same

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6 **Lemons taste sour. What does sour taste show?**

A a salt is present

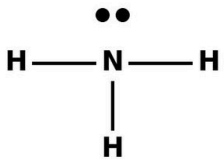
B an alkali is present

C an acid is present

D a metal is present

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7 **The diagram shows an ammonia molecule. How many covalent bonds does the nitrogen atom form?**



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

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8 **Which particle has no charge?**

- **A** the proton
- **B** the nucleus
- **C** the neutron
- **D** the electron

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9 **An element is in period 2 of the periodic table. How many electron shells do its atoms have?**

- A 2
- B 1
- C 4
- D 3

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10 **Who discovered the neutron?**

- A Dalton, who first described atoms
- B Bohr, who described shells
- C Chadwick
- D Thomson, who found the electron

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11 **What is the mass number of an isotope with 6 protons and 8 neutrons?**

- A 14
- B 20
- C 8
- D 6

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12 **An atom has 6 protons. How many electrons does the neutral atom have?**

- A 7
- B 6
- C 8
- D 5

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13 **Why was Mendeleev's table accepted?**

A his predictions came true

B he arranged the elements by number

C every scientist agreed with him at once

D his table had no gaps left in it

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14 **An element, chlorine, has isotopes. 75 percent have a mass of 35 and 25 percent have a mass of 37. What is the relative atomic mass of chlorine?**

A 34.5

B 36.5

C 36

D 35.5

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15 **What does the atomic number tell you?**

- **A** the mass of the atom
- **B** the number of neutrons
- **C** the number of electrons and neutrons
- **D** the number of protons

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16 **Which of these is a simple covalent molecule?**

- **A** NaCl
- **B** MgO
- **C** $CaCl_2$
- **D** CO_2

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17 **Why can metals be drawn into wires?**

A their bonds break very easily

B their atoms are far apart

C their layers can slide

D their electrons hold them rigid

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18 **Which group contains the alkali metals?**

A Group 1

B Group 7

C Group 2

D Group 0

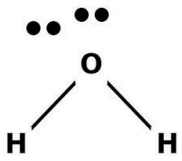
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19 **Which electronic structure is a noble gas?**

- A 2,8,8
- B 2,8,1
- C 2,8,7
- D 2,6

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20 **The diagram shows a water molecule. How many lone pairs of electrons does the oxygen atom have?**



- A 3
- B 2
- C 1
- D 4

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21 **An atom of calcium loses 2 electrons. What is the charge on the ion formed?**

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

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22 **What is the charge on a chloride ion?**

- **A** Cl^{2-}
- **B** Cl
- **C** Cl^{+}
- **D** Cl^{-}

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23 **An element is in period 4 of the periodic table. How many electron shells do its atoms have?**

- **A** 5
- **B** 6
- **C** 4
- **D** 3

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24 **What did Bohr suggest about electrons?**

- **A** they are stuck in a ball of charge
- **B** they sit inside the nucleus
- **C** they move about at random anywhere in the atom
- **D** they sit in shells at fixed distances

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25

Why do isotopes of the same element have the same chemical properties?

A they have the same number of neutrons in the nucleus

B they have the same mass number

C they have the same number of electrons

D they have the same density always

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ANSWER KEY

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

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