ENGLAND GCSE CHEMISTRY OCR TWENTY FIRST CENTURY HIGHER · UNIT 2 · 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 **A swimming pool holds water. Why does a person float in the pool?**

- A they are heavier than water and sink
- B the water pushes them down
- C their density is close to water
- D they are made of air

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2 **Silver coins are made of a metal. Which property do metals have?**

- A they conduct electricity
- B they do not conduct electricity at all
- C they dissolve in water
- D they are brittle

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

- A an alkali is present
- B an acid is present
- C a salt is present
- D a metal is present

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4 **Glass marbles are used to model atoms. What is a limitation of the model?**

- A marbles are the wrong colour for atoms
- B marbles are too small to see properly
- C marbles are much bigger than atoms
- D marbles cannot be counted accurately at all

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

A it stays the same

B it becomes zero

C it decreases

D it increases

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

A it freezes

B it contracts

C it expands

D it evaporates

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

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

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8 **An atom of oxygen gains 2 electrons. What is the charge on the ion formed?**

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

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9 **An element, magnesium, has isotopes. 79 percent have a mass of 24 and 10 percent have a mass of 25 and 11 percent have a mass of 26. What is the relative atomic mass of magnesium?**

A 23.3

B 24.8

C 24.3

D 25.3

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10 **What is the relative atomic mass of an element?**

A the average mass of its atoms

B the number of protons in its atoms

C the total mass of all its isotopes

D the mass of its heaviest isotope

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11 What is the electronic structure of chlorine (atomic number 17)?

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

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12 What is the charge on a chloride ion?

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

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13 **Which group contains the noble gases?**

A Group 0

B Group 7

C Group 2

D Group 1

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14 **How many electrons can the second shell hold?**

A 18

B 2

C 4

D 8

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15 **An atom has 17 protons. How many electrons does the neutral atom have?**

A 18

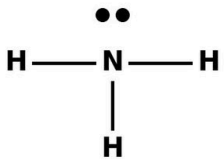
B 17

C 19

D 16

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



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

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17 **Who discovered the neutron?**

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

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18 **Which of these is a typical property of a metal?**

A it is brittle

B it is dull

C it conducts electricity

D it does not conduct heat

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19 **Why do giant covalent structures have high melting points?**

A their molecules are very small

B many strong bonds must break

C their layers slide apart easily

D weak forces between molecules break

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

A 5

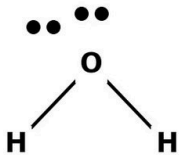
B 6

C 3

D 4

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



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

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22 **How did Mendeleev arrange the elements?**

- **A** by colour and appearance
- **B** by atomic mass
- **C** by the date each was found
- **D** by atomic number in order

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23 **An atom has atomic number 8 and mass number 16. How many electrons does it have?**

- **A** 24
- **B** 16
- **C** 6
- **D** 8

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24 **What is the formula of methane?**

- **A** CH_2
- **B** C_2H_4
- **C** CH_4
- **D** CH_3

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25 **An atom of sodium loses 1 electron. What is the charge on the ion formed?**

A 0

B +2

C +1

D -1

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ANSWER KEY

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

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