ENGLAND GCSE COMBINED SCIENCE AQA TRILOGY HIGHER · UNIT 9 · 25 QUESTIONS

Bonding, Structure, and the Properties of Matter — 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 stop moving

B they get smaller

C they lose energy and slow down a lot

D they gain energy and move more

Understand It with Pulse

Flag a mistake

2 **Paintbrushes are used with paint. What is paint an example of?**

A an element

B a pure substance

C a formulation

D a compound

Understand It with Pulse | Flag a mistake

3 **Glass marbles in a tray are used as a model for particles in a solid. What do the marbles show?**

A particles flow past each other easily

B particles move freely through space

C particles are far apart from each other

D particles vibrate in fixed positions

Understand It with Pulse | Flag a mistake

4 **A hot air balloon rises because the air inside it is less dense than the air outside. What happens to the density of air when it is heated?**

- A it increases
- B it decreases
- C it becomes zero
- D it stays the same

Understand It with Pulse | Flag a mistake

5 **Silver coins conduct electricity well. Why?**

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

Understand It with Pulse | Flag a mistake

6 **A chocolate cake is made from flour, sugar and eggs. Which ingredient provides protein?**

- A sugar
- B water
- C flour
- D eggs

Understand It with Pulse | Flag a mistake

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

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

Understand It with Pulse | Flag a mistake

8

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

A 8

B 5

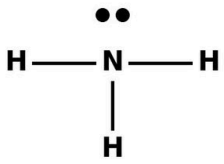
C 7

D 6

Understand It with Pulse

Flag a mistake

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



A 2

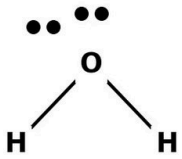
B 1

C 3

D 4

Understand It with Pulse | Flag a mistake

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



A 2

B 3

C 1

D 4

Understand It with Pulse | Flag a mistake

11 How many covalent bonds does an oxygen atom form in a water molecule?

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

Understand It with Pulse | Flag a mistake

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

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

Understand It with Pulse | Flag a mistake

13 **What type of bonding is in diamond?**

A intermolecular forces

B covalent

C ionic

D metallic

Understand It with Pulse | Flag a mistake

14 **How does chlorine form an ion?**

A it gains one electron

B it gains two electrons

C it loses one electron

D it shares one electron

Understand It with Pulse | Flag a mistake

15 **An element is in period 3 of the periodic table. How many electron shells do its atoms have?**

A 3

B 5

C 2

D 4

Understand It with Pulse | Flag a mistake

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

A 16

B 19

C 17

D 18

Understand It with Pulse | Flag a mistake

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

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

Understand It with Pulse | Flag a mistake

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

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

Understand It with Pulse | Flag a mistake

19 **In which state do particles move most freely?**

A liquid

B plasma

C solid

D gas

Understand It with Pulse | Flag a mistake

20 **What type of bonding is in water?**

A metallic

B ionic

C covalent

D intermolecular forces

Understand It with Pulse | Flag a mistake

21 **An atom has 11 protons. How many electrons does the neutral atom have?**

A 12

B 11

C 13

D 10

Understand It with Pulse | Flag a mistake

22 **What is the formula of carbon dioxide?**

A C_2O

B CO_2

C CO

D CO_3

Understand It with Pulse | Flag a mistake

23 **What type of bonding is in graphite?**

- A covalent
- B intermolecular forces
- C metallic
- D ionic

Understand It with Pulse | Flag a mistake

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

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

Understand It with Pulse | Flag a mistake

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

A 0

B +2

C -1

D -2

Understand It with Pulse | Flag a mistake

ANSWER KEY

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

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