BRITISH COLUMBIA CHEMISTRY 11 (MCH--11) · UNIT A · 25 QUESTIONS

Atoms, Molecules and Bonding — 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 to let Brett know so he can fix it.

1 **An atom has 11 protons and 12 neutrons. The element is**



A sodium

B magnesium

C neon

D aluminium

Understand It with Pulse | Flag a mistake

2 **A neutral atom has 17 protons. The number of electrons it has is**

- A 16
- B 17
- C 18
- D 35

Understand It with Pulse | Flag a mistake

3 **Chlorine has atomic number 17 and mass number 37. The number of neutrons in this atom is ____**

ANSWER _____

Understand It with Pulse | Flag a mistake

4 **Isotopes of an element have the same number of**

A protons but different numbers of neutrons

B neutrons but different numbers of protons

C electrons but different numbers of protons

D protons and neutrons in every case

Understand It with Pulse | Flag a mistake

5 **An atom loses two electrons to form an ion. The charge on the ion is**

A 2-

B 2+

C 0

D 1-

Understand It with Pulse | Flag a mistake

6 **Magnesium has atomic number 12. The number of electrons in Mg^{2+} is**

A 10

B 12

C 14

D 8

Understand It with Pulse | Flag a mistake

7 **Oxygen has atomic number 8. The number of electrons in O^{2-} is ____**

ANSWER _____

Understand It with Pulse | Flag a mistake

8 **Going down a group in the periodic table, atomic radius generally**



A increases because a new energy level is added

B decreases because nuclear charge increases

C stays the same in every group

D increases because protons are lost

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9 **Going across a period from left to right, electronegativity generally**

A increases

B decreases

C stays the same

D falls to zero

Understand It with Pulse | Flag a mistake

10 **The element in group 17 and period 3 is**



A fluorine

B chlorine

C bromine

D sulfur

Understand It with Pulse | Flag a mistake

11 **Sulfur is in group 16. The number of valence electrons it has is ____**

ANSWER _____

Understand It with Pulse | Flag a mistake

12 **An ionic bond forms when electrons are**

A transferred from a metal to a nonmetal

B shared equally between two metals

C shared between two noble gases

D destroyed by the metal atom

Understand It with Pulse | Flag a mistake

13 **Sodium forms Na^{+} and chlorine forms Cl^{-}. The formula of the ionic compound formed is**

- A $NaCl$
- B $NaCl_2$
- C Na_2Cl
- D Na_2Cl_2

Understand It with Pulse | Flag a mistake

14 **Magnesium forms Mg^{2+} and oxygen forms O^{2-}. The formula of the compound formed is**

- A MgO_2
- B Mg_2O
- C MgO
- D Mg_2O_2

Understand It with Pulse | Flag a mistake

15 **Aluminium forms Al^{3+} and oxygen forms O^{2-}. The formula of the compound formed is**

- **A** AlO
- **B** Al_2O_3
- **C** Al_3O_2
- **D** AlO_2

Understand It with Pulse | Flag a mistake

16 **A covalent bond forms when atoms**

- **A** share pairs of electrons
- **B** transfer all their protons
- **C** lose all their neutrons
- **D** become positively charged only

Understand It with Pulse | Flag a mistake

17 **In a water molecule, the oxygen atom has this many lone pairs of electrons**



A 0

B 1

C 2

D 3

Understand It with Pulse | Flag a mistake

18 **Carbon dioxide has a central carbon atom bonded to two oxygen atoms and no lone pairs. The shape of the molecule is**

A bent

B linear

C trigonal planar

D tetrahedral

Understand It with Pulse | Flag a mistake

19 **Ammonia has a central nitrogen atom bonded to three hydrogen atoms and one lone pair. The shape of the molecule is**

A tetrahedral

B trigonal pyramidal

C linear

D bent

Understand It with Pulse | Flag a mistake

20 **Methane has a central carbon atom bonded to four hydrogen atoms and no lone pairs. The shape of the molecule is**

A tetrahedral

B square planar

C bent

D linear

Understand It with Pulse | Flag a mistake

21 **Water has a central oxygen atom bonded to two hydrogen atoms and two lone pairs. The shape of the molecule is**



A linear

B trigonal planar

C tetrahedral

D bent

Understand It with Pulse | Flag a mistake

22 **Which of these molecules can form hydrogen bonds with other molecules of the same kind**

- **A** NH_3
- **B** CH_4
- **C** CO_2
- **D** O_2

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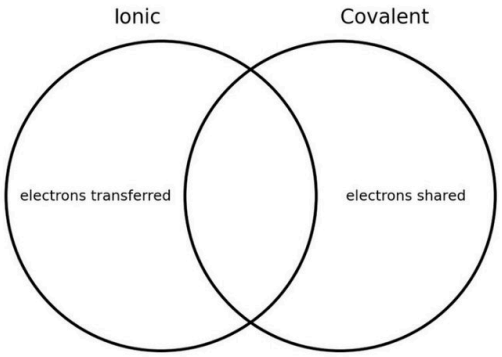
23 **London dispersion forces are present**

- **A** between all molecules, polar or nonpolar
- **B** only between ions in a crystal
- **C** only between metals and water
- **D** only inside a single atom

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24 **The diagram compares ionic and covalent bonding. Which statement belongs in the overlapping region**

24 **The diagram compares ionic and covalent bonding. Which statement belongs in the overlapping region**



Question 24

The diagram compares ionic and covalent bonding. Which statement belongs in the overlapping region

A) atoms gain a stable electron arrangement

B) electrons are transferred

C) electrons are shared

D) a crystal lattice always forms

A atoms gain a stable electron arrangement

B electrons are transferred

C electrons are shared

D a crystal lattice always forms

A atoms gain a stable electron arrangement

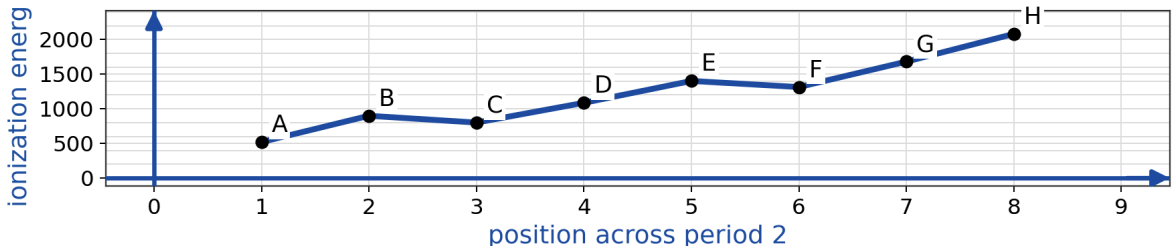
B electrons are transferred

C electrons are shared

D a crystal lattice always forms

Understand It with Pulse | Flag a mistake

25 **The graph shows first ionization energy across period 2, from lithium at A to neon at H. The element with the highest value is at point**



A A

B C

C F

D H

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ANSWER KEY

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

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