YUKON 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 _____

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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

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

A 2-

B 2+

C 0

D 1-

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

A 10

B 12

C 14

D 8

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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

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

- A fluorine
- B chlorine
- C bromine
- D sulfur

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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

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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

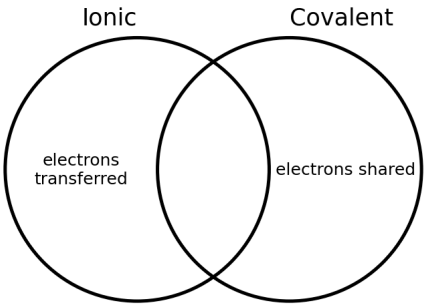
Understand It with Pulse | Flag a mistake

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

Understand It with Pulse | Flag a mistake

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

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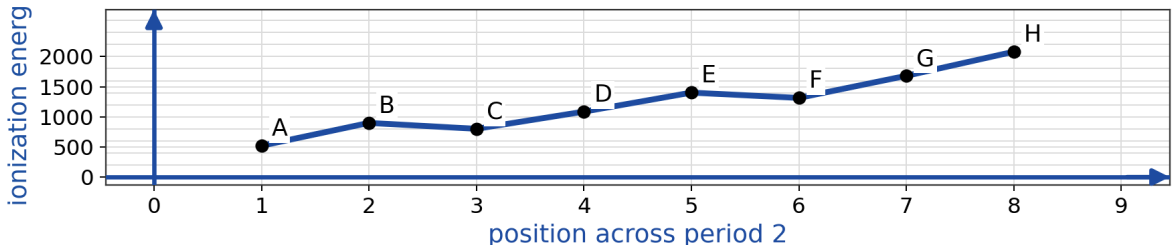
25 **The graph shows first ionization energy across period 2, from lithium at A to neon at H. The element with the highest value is at point**



A A

B C

C F

D H

Understand It with Pulse **Flag a mistake**

ANSWER KEY

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

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