

**O Level Combined Chemistry MCQs**

**Chemical Bonding Test 1.0**

Q1

The atoms of element X have the electronic configuration 2,8,6. Which statement about element X is correct?

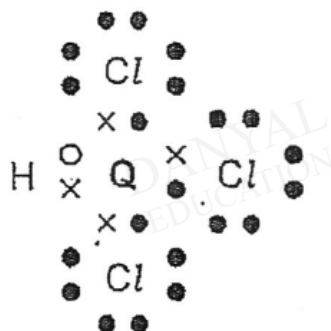
- A It forms an ionic compound with sodium.
- B It has 6 protons in the outer shell of an atom.
- C It forms an ion of charge 2+.
- D It only reacts with non-metals.

Q2

Element Q has four electrons in its outermost shell.

Element Q can combine with hydrogen and chlorine to form a compound  $\text{QHCl}_3$ .

The diagram shows the outer electronic configuration structure of  $\text{QHCl}_3$ .

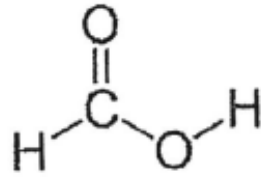


Which of these properties will this compound have?

- A It will be a solid at room temperature.
- B It will be readily soluble in water.
- C It will be a good conductor of electricity.
- D It will have a low boiling point.

Q3

What is the total number of shared electrons between carbon and oxygen atoms in the following molecule?



A 4

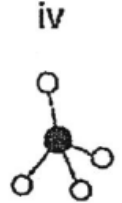
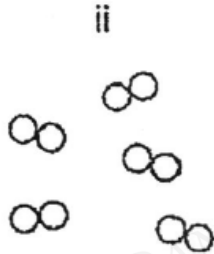
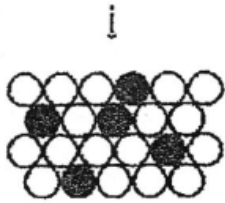
B 6

C 8

D 10

Q4

Which of the following best describes the substances shown below?



	elements	compounds	mixtures
A	ii	i, iii, iv	none
B	i, ii	iv	iii
C	ii	iii, iv	i
D	ii, iii	iv	i

Q5

The formulae of four covalent compounds are shown

- I H<sub>2</sub>O
- II CO<sub>2</sub>
- III CH<sub>3</sub>OH
- IV CH<sub>3</sub>COOH

In which following pair of molecules does oxygen form at least one double bond in both molecules?

- A I and II
- B I and III
- C II and IV
- D III and IV

Q6

Nitrogen trichloride, NCl<sub>3</sub> is a molecule formed when the elements, nitrogen (Group V) and chlorine (Group VII) react together.

How many electrons in the outer shell of the nitrogen atom are not involved in bonding?

- A 0
- B 1
- C 2
- D 3

Q7

Element Y has the electronic configuration 2, 2.

Element Z has the electronic configuration 2, 8, 7.

What is the formula of the compound formed between Y and Z?

- A YZ
- B YZ<sub>2</sub>
- C Y<sub>2</sub>Z
- D Y<sub>3</sub>Z<sub>2</sub>

Q8

Element X has an electronic configuration of 2,8,8,1.  
Element Y has an electronic configuration of 2,8,6.

Which statement describes the compound formed between element X and Y?

- A The compound has a low melting point.
- B The compound has formula  $XY_2$ .
- C The compound is able to conduct electricity in its aqueous state.
- D The compound is soluble in organic solvent.

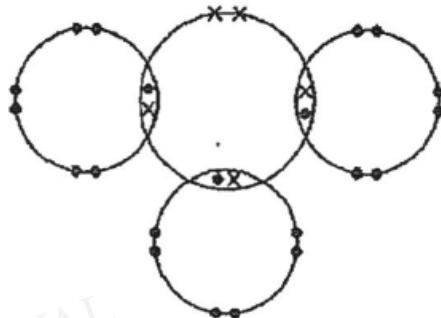
Q9

Which statement describes what happens when sodium chloride melts?

- A Covalent bonds in a giant lattice are broken.
- B Electrons are released from atoms.
- C Electrostatic forces of attraction between ions are overcome.
- D Molecules are separated into ions.

Q10

The diagram shows how the outer shell electrons are arranged in a compound formed between two elements.



Which statements about the compound are correct?

- 1 It is formed between two non-metallic elements.
- 2 It could be ammonia,  $NH_3$ .
- 3 It has a low boiling point.
- 4 It conducts electricity when molten.

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

**Answers**

**Chemical Bonding Test 1.0**

Q1 A

Q2 D

Q3 B

Q4 C

Q5 C

Q6 C

Q7 B

Q8 C

Q9 C

Q10 B

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