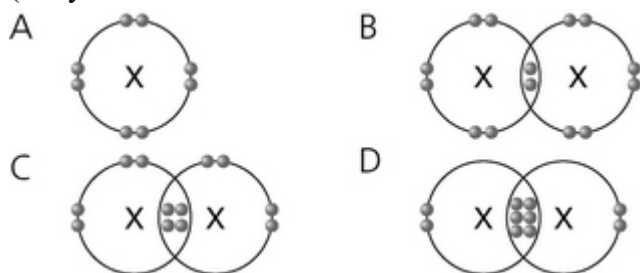


8 Covalent Bond

1. An element X exists as molecules and it has an atomic number 8. Which of the following is the electron diagram of a molecule of X?

(Only electrons in the *outermost shells* are shown.)



2. Consider the following elements.

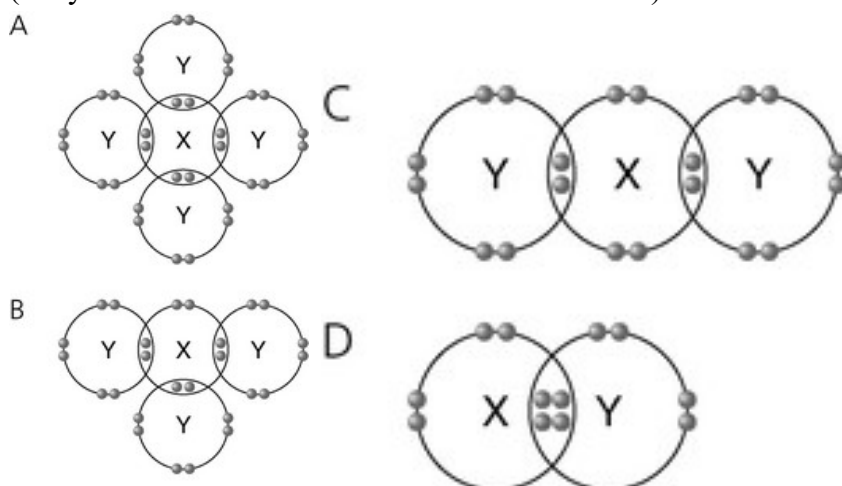
Element	W	X	Y	Z
Atomic number	4	6	7	9

Which of the elements exists as diatomic molecules with triple bonds?

- A W
 B X
 C Y
 D Z
3. Nitrogen and fluorine form a compound by
- A gaining electrons.
 B losing electrons.
 C sharing electrons.
 D both sharing and transferring electrons.
4. Which of the following pairs of elements will form a covalent compound?
- A Carbon and oxygen
 B Mercury and fluorine
 C Sodium and hydrogen
 D Potassium and sulphur

5. The atomic number of elements X and Y are 7 and 17 respectively. Which of the following electron diagrams best represents the compound formed between X and Y?

(Only electrons in the *outermost shells* are shown.)



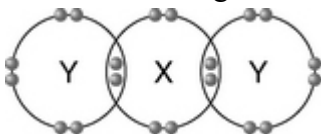
6. Consider the information given in the table below:

Element	Atomic number
w	7
x	9
y	10
z	11

Which of the following pairs of elements would form a covalent compound?

- A w and x
- B w and y
- C x and z
- D y and z

7. The electron diagram of a compound formed between element X and element Y is shown below:

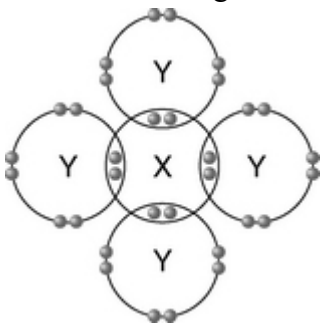


(Only electrons in the *outermost shells* are shown.)

Which of the following combinations is correct?

- | | <u>X</u> | <u>Y</u> |
|---|----------|----------|
| A | Carbon | chlorine |
| B | Carbon | oxygen |
| C | Sulphur | oxygen |
| D | Sulphur | chlorine |

8. The electron diagram of a compound formed between element X and element Y is shown below:



(Only electrons in the *outermost shells* are shown.) Which of the following combinations is correct?

- | | <u>X</u> | <u>Y</u> |
|---|-----------|----------|
| A | Germanium | fluorine |
| B | Germanium | oxygen |
| C | Nitrogen | oxygen |
| D | Nitrogen | fluorine |

9. Which of the following molecules contains a triple bond?

- A F₂O
- B NF₃
- C HCN
- D O₂

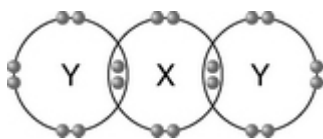
10. Which of the following molecules does NOT contain any lone pair of electrons?

- A F_2
- B NH_3
- C SiH_4
- D Cl_2O

11. Which of the following pairs of molecules have the same number of lone pairs of electrons?

- A Nitrogen, water
- B Oxygen, fluorine
- C Chlorine, hydrogen chloride
- D Hydrogen, carbon dioxide

12. X and Y are two different elements. The electron diagram of the compound formed between X and Y is shown below:

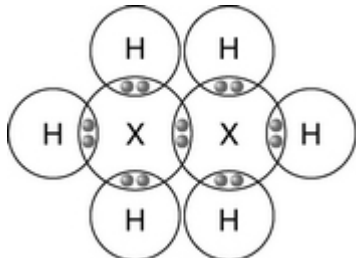


(Only electrons in the *outermost shells* are shown.)

How many electrons are there in the outermost shell of an atom of X?

- A 5
- B 6
- C 7
- D 8

13. The following is an electron diagram of the compound formed between element X and hydrogen.



(Only electrons in the *outermost shells* are shown.)

How many electrons are there in the outermost shell of an atom of X?

- A 4
- B 5
- C 6
- D 7

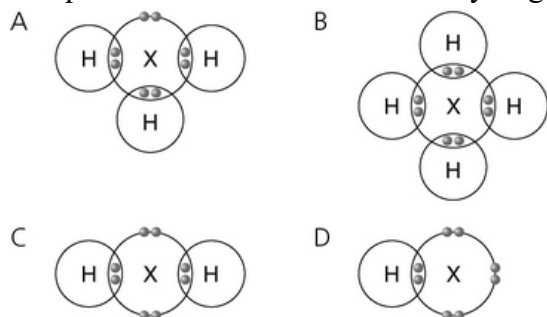
14. The atomic number of an element X is 9. The chemical formula of the compound formed between X and oxygen is

- A X_2O .
- B XO .
- C XO_2 .
- D X_2O_3 .

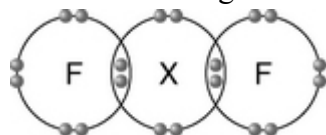
15. The atomic numbers of elements X and Y are 14 and 17 respectively. What is the chemical formula of the compound formed between X and Y?

- A XY B XY₂ C XY₃ D XY₄

16. X is an element in the second period of the periodic table. The chemical formula of the compound formed between magnesium and X is Mg₃X₂. Which of the following electron diagrams best represents the compound formed between X and hydrogen? (Only electrons in the *outermost shells* are shown.)



17. The electron diagram of a compound formed between element X and fluorine is shown below:



(Only electrons in the *outermost shells* are shown.)

What would be the chemical formula of the compound formed between calcium and X?

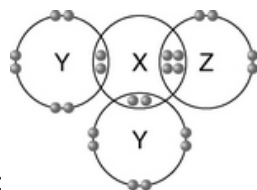
- A CaX B CaX₂ C Ca₂X D Ca₂X₃

18. Which of the following pairs of elements would form covalent compound(s)?

- (1) Nitrogen and oxygen
 (2) Mercury and oxygen
 (3) Neon and nitrogen

- A (1) only B (2) only C (1) and (3) only D (2) and (3) only

19. X, Y and Z are three different elements. The electron diagram of a compound formed by X, Y and Z is



shown below:

(Only electrons in the *outermost shells* are shown.) Which of the following statements is / are correct?

- (1) There are 4 electrons in the outermost shell of an atom of X.
 (2) There are 8 electrons in the outermost shell of an atom of Y.
 (3) There are 6 electrons in the outermost shell of an atom of Z.

- A (1) only B (2) only C (1) and (3) only D (2) and (3) only

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