

Chapter - 5

Periodic Classification of Elements

(Assertion and Reasoning Questions)

Following questions consist of two statements – Assertion (A) and Reason (R). Answer these questions selecting the appropriate option given below:

- (a) Both A and R are true and R is the correct explanation of A.
- (b) Both A and R are true but R is not the correct explanation of A.
- (c) A is true but R is false.
- (d) A is false but R is true.

Q.1. Assertion (A): Mendeléev concentrated on the compounds formed by elements with oxygen and hydrogen in his periodic table.

Reason (R) : Hydrogen and oxygen are very reactive and form compounds with most elements.

Q.2. Assertion (A): In Mendeléev Periodic Table, cobalt was placed before nickel.

Reason (R): The atomic mass of cobalt is less than nickel.

Q.3. Assertion (A): According to Mendeléev, the properties of elements are a periodic function of their atomic masses.

Reason (R) : Atomic number is equal to the number of protons.

Q.4. Assertion (A): Noble gases have zero valency.

Reason (R) : Noble gases have stable electronic configuration.

Q.5. Assertion (A): Elements in the same vertical column have similar properties.

Reason (R) : Elements have periodic dependence upon the atomic number.

Q.6. Assertion (A): Silicon is a metalloid.

Reason (R) : Silicon shows only properties of non-metals.

Q.7. Assertion (A): Fluorine has greater atomic radius than nitrogen.

Reason (R): Atomic radius decreases along a period.

Q.8. Assertion (A): Li, Na, K form Döbereiner's triads.

Reason (R) : Atomic mass of Na is roughly the average of atomic masses of Li and K.

Q.9. Assertion (A): Magnesium belongs to 3rd period of modern periodic table.

Reason (R) : The valence electrons of magnesium is 2.

Q.10. Assertion (A): Isotopes are placed together in the modern periodic table.

Reason (R) : Isotopes have same atomic number.

-X-X-X-

ANSWER KEY

Q.1 : (a)

Q.2 : (c)

Q.3 : (b)

Q.4 : (a)

Q.5 : (b)

Q.6 : (c)

Q.7 : (d)

Q.8 : (a)

Q.9 : (b)

Q.10 : (a)