Structure of the Atom

Assertion & Reason Type Questions

Directions : Each of the following questions consists of two statements, one is Assertion (A) and the other is Reason (R). Select the correct answer to these questions from the codes (a), (b), (c) and (d) as given below:

a. Both Assertion (A) and Reason (R) are true and Reason (R) is the correct explanation of Assertion (A).

b. Both Assertion (A) and Reason (R) are true but Reason (R) is not the correct explanation of Assertion (A).

c. Assertion (A) is true but Reason (R) is false.

d. Assertion (A) is false but Reason (R) is true.

Q1. Assertion (A): Thomson's atomic model is known as 'raisin pudding' model.

Reason (R): The atom is visualised as a pudding of positive charge with electrons (raisins) embedded in it.

Answer : (a) Both Assertion (A) and Reason (R) are true and Reason (R) is the correct explanation of Assertion (A).

Q2. Assertion (A): Most of the space in an atom is empty.

Reason (R): Most of the a-rays in Rutherford's a-scattering experiment passed through a thin gold foil straight.

Answer : (a) Both Assertion (A) and Reason (R) are true and Reason (R) is the correct explanation of Assertion (A).

Q3. Assertion (A): The size of the nucleus is very small as compared to the size of the atom.

Reason (R): The electrons revolve around the nucleus of the atom in circular paths.

Answer : (b) Both Assertion (A) and Reason (R) are true but Reason (R) is not the correct explanation of Assertion (A).

Q4. Assertion (A): The distribution of electrons in different orbits or shells is governed by a scheme known as Bohr-Bury scheme.

Get More Learning Materials Here : CLICK HERE www.studentbro.in

Reason (R): Electrons are filled in the shells in a stepwise manner.

Answer : (b) Both Assertion (A) and Reason (R) are true but Reason (R) is not the correct explanation of Assertion (A).

Q5. Assertion (A): The number of electrons gained, lost or shared by the atom of an element so as to complete its octet is called the valency of the element.

Reason (R): Elements having the same number of valence electrons in their atoms possess different chemical properties.

Answer : (c) Reason (R) is false because elements having the same number of valence electrons in their atoms possess similar chemical properties.

Q6. Assertion (A): Nat has completely filled K-and L-shells.

Reason (R): Nat has 10 electrons out of which K-shell contains 2 electrons and L-shell contains 8 electrons.

Answer : (a) Both Assertion (A) and Reason (R) are true and Reason (R) is the correct explanation of Assertion (A).

Q7. Assertion (A): For noble gases, valency is zero.

Reason (R): Noble gases have 8 valence electrons.

Answer : (a) Both Assertion (A) and Reason (R) are true and Reason (R) is correct explanation of Assertion (A).

Q8. Assertion (A): The mass of the total number of protons and neutrons is a measure of the approximate mass of an atom.

Reason (R): The mass of an electron is negligible.

Answer : (a) Both Assertion (A) and Reason (R) are true and Reason (R) is the correct explanation of Assertion (A).

Since the mass of an electron is negligible, the mass of the total number of neutrons and protons (nucleons) is a measure of the approximate mass of an atom.

Q9. Assertion (A): Isotopes are electrically neutral.

Reason (R): Isotopes of an element have equal number of protons and electrons.

Answer : (a) Both Assertion (A) and Reason (R) are true and Reason (R) is the correct explanation of Assertion (A).

Get More Learning Materials Here : CLICK HERE www.studentbro.in

Q10. Assertion (A): Isobars are atoms of different elements having the same mass number.

Reason (R): Isobars have identical chemical properties.

Answer : (c) Reason (R) is false because the chemical properties of isobars are different.

Get More Learning Materials Here : CLICK HERE www.studentbro.in