

Delhi Public School, Jammu
Session: 2021-22
Month: August

Class : XI
Chemistry assignment

Topics: 1) Redox reactions
2) Classification of elements and their periodicity

Section A (MCQ's)

1. Periodic classification of elements is used to examine the
 - (a) periodic trends in physical properties of elements
 - (b) periodic trends in chemical properties of elements
 - (c) Both (a) and (b)
 - (d) None of the above
2. Increasing order of electro negativity is
 - (a) $\text{Bi} < \text{P} < \text{S} < \text{Cl}$
 - (b) $\text{P} < \text{Bi} < \text{S} < \text{Cl}$
 - (c) $\text{S} < \text{Bi} < \text{P} < \text{Cl}$
 - (d) $\text{Cl} < \text{S} < \text{Bi} < \text{P}$
3. Which of the following pairs has both members from the same period of the periodic table.
 - (a) Na – Ca (b) Na – Cl
 - (c) Ca – Cl (d) Cl – Br
4. The chemistry of lithium is very similar to that of magnesium even though they are placed in different groups. Its reason is:
 - (a) Both are found together in nature
 - (b) Both have nearly the same size
 - (c) Both have similar electronic configuration
 - (d) The ratio of their charge and size (i.e. charge density) is nearly the same
5. Why the size of an anion is larger than the parent atom?
 - (a) Due to increased repulsion among the electrons.
 - (b) Due to decrease in effective nuclear charge.
 - (c) Due to increased in effective nuclear charge.
 - (d) Both (a) and (b)
6. Which of the following is not an example of redox reaction?
 - (a) $\text{CuO} + \text{H}_2 \longrightarrow \text{Cu} + \text{H}_2\text{O}$
 - (b) $\text{Fe}_2\text{O}_3 + 3\text{CO} \longrightarrow 2\text{Fe} + 3\text{CO}_2$

- (c) $2K + F_2 \longrightarrow 2KF$
(d) $BaCl_2 + H_2SO_4 \longrightarrow BaSO_4 + 2HCl$
7. Using the standard electrode potential, find out the pair between which redox reaction is not feasible.
- (a) Fe^{3+} and I^-
(b) Ag^+ and Cu
(c) Fe^{3+}
(d) Ag and Fe^{3+}
8. In which of the following compounds, an element exhibits two different oxidation states.
- (a) NH_2OH
(b) NH_4NO_3
(c) N_2H_4
(d) N_3H
9. Which of the following elements does not show disproportionation tendency?
- (a) Cl
(b) Br
(c) F
(d) I
10. The more positive the value of E^\ominus , the greater is the tendency of the species to get reduced. Using the standard electrode potential of redox couples given below find out which of the following is the strongest oxidising agent.
- (a) Fe^{3+}
(b) $I_2 (s)$
(c) Cu^{2+}
(d) Ag^+

SECTION B (Reasoning assertion type)

These questions consist of two statements, each printed as Assertion and Reason. While answering these questions, you are required to choose any one of the following four responses.

- (a) If both Assertion and Reason are correct and the Reason is a correct explanation of the Assertion.
(b) If both Assertion and Reason are correct but Reason is not a correct explanation of the Assertion.
(c) If the Assertion is correct but Reason is incorrect.
(d) If both the Assertion and Reason are incorrect.

1.Assertion (A) : Generally, ionisation enthalpy increases from left to right in a

period.

Reason (R) : When successive electrons are added to the orbitals in the same principal quantum level, the shielding effect of inner core of electrons does not increase very much to compensate for the increased attraction of the electron to the nucleus.

2.Assertion (A) : Boron has a smaller first ionisation enthalpy than beryllium.

Reason (R) : The penetration of a 2s electron to the nucleus is more than the 2p electron hence 2p electron is more shielded by the inner core of electrons than the 2s electrons.

3.Assertion (A) : Electron gain enthalpy becomes less negative as we go down a group.

Reason (R) : Size of the atom increases on going down the group and the added electron would be farther from the nucleus.

4.Assertion (A) : Among halogens fluorine is the best oxidant.

Reason (R) : Fluorine is the most electronegative atom.

5.Assertion (A): In the reaction between potassium permanganate and potassium iodide, permanganate ions act as oxidising agent.

Reason (R) : Oxidation state of manganese changes from +2 to +7 during the reaction.

6.Assertion (A) : The decomposition of hydrogen peroxide to form water and oxygen is an example of disproportionation reaction.

Reason (R) : The oxygen of peroxide is in -1 oxidation state and it is converted to zero oxidation state in O_2 and -2 oxidation state in H_2O .
