DPP EXERCISE
NEET
INORGANIC CHEMISTRY

BY
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PERIODIC TABLE
&
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DPP -1

1 . Modern periodic law is

(1) The physical and chemical properties of the elements are periodic function of their atomic numbers.

(2) The physical and chemical properties of the elements depend upon the energy of the electrons.

(3) The physical and chemical properties of the elements depend upon atomic weight.

(4) None of these.

Ans. (1)

2 . Which of the following statements about modern periodic table is incorrect ?

(1) The p-block has 6 columns because a maximum of 6 electrons can occupy all the orbitals in the p-subshell.

(2) The d-block has 8 columns because a maximum of 8 electrons can occupy all the orbitals in the d-subshell.

(3) Each block contains a number of columns equal to number of electrons that can occupy the subshell.

(4) The block indicates the value of azimuthal quantum number for the last subshell which received electrons.

Ans. (2)

3 . Elements which generally exhibit multiple oxidation states and whose ions are usually coloured are

(1) Metalloids (2) Transition elements (3) Non-metals (4) Gases

Ans. (2)

4 . IUPAC name of the element having atomic number 108 is

(1) Unniloctium (2) Ununoctium (3) Nilniloctinium (4) Ununoctinium

Ans. (1)

5 . Which of the following is a representative element ?

(1) Zn (2) Sr (3) Cu (4) Fe

Ans. (2)

6. The electronic configuration of an element is $1s^2\ 2s^2\ 2p^6\ 3s^2\ 3p^3$. What is the atomic number of the element, which is just below the above element in the periodic table ?

(1) 36 (2) 49 (3) 33 (4) 34

Ans. (3)

7. The valence shell electronic configuration of transition elements is

(1) ns^1 (2) ns^2np^5 (3) $ns^{0-2}(n-1)d^{1-10}$ (4) $ns^2(n-1)d^{10}$

Ans. (3)

8. Eka-aluminium and Eka-silicon are known as

(1) Gallium and Germanium (2) Aluminium and Silicon

(3) Iron and Sulphur (4) Boron and Technitium

Ans. (1)

9. Which is mismatched regarding the position of the element as given below ?

(1) X(Z = 89) - f block, 6^{th} period (2) Y(Z = 100) - f block, 7^{th} period

(3) Z(Z = 115) - d block, 7^{th} period (4) Both (1) & (3)

Ans. (4)

10. Which set does not show correct matching ?

(1) SC^{3+} $[Ne]3s^2\ 3p^6$ zero group (2) Fe^{2+} $[Ar]3d^6$ VIII group

(3) Cr[Ar] $3d^5\ 4s^1$ VIB group (4) All of the above

Ans. (1)

11. $4d^3 5s^2$ configuration belongs to which group :-

(1) IIA (2) IIB (3) V B (4) III B

Ans. **3**

12. An ion M^{+3} has electronic configuration [Ar] $3d^{10}$ $4s^2$ element M belongs to :-

(1) s-block (2) p-block (3) d-block (4) f-block

Ans. **(2)**

DPP - 2

1 . When a neutral atom is converted into a cation its

(1) Atomic weight increases (2) Atomic weight decreases

(3) Size increases (4) Size decreases

Ans. **(4)**

2 . Of the following, which one is a correct statement ?

(1) Ionic radius of a metal is same as its atomic radius

(2) The ionic radius of a metal is greater than its atomic radius

(3) The atomic radius of a non-metal is more than its ionic radius

(4) The ionic radius of a metal is less than its atomic radius

Ans. **(4)**

3 . Which of the following N^{3-}, O^{2-}, F^- is largest in size ?

(1) N^{3-} (2) O^{2-} (3) F^- (4) All of these

Ans. **(1)**

4 . Which of the following is not correct for iso-electronic ions?

(1) They have the same number of electrons around their nuclei.

(2) Higher the atomic number, higher will be positive charge in a series of isoelectronic ions of same period.

(3) Isoelectronic ions have same electric charge

(4) An isoelectronic series may have both positively and negatively charged ions.

Ans. **(3)**

5. The radii of F, F^-, O and O^{2-} are in the order

(1) $O^{2-} > O > F^- > F$ (2) $F^- > O^{2-} > O > F$ (3) $O^{2-} > F^- > O > F$ (4) $O^{2-} > F^- > F > O$

Ans. **(3)**

6. Which of the following is correct?

(1) $r_{ionic} \propto Z$ (2) $r_{ionic} \propto Z_{eff}$ (3) $r_{ionic} \propto \frac{1}{Z_{eff}}$ (4) $r_{ionic} \propto Z_{eff}^2$

Ans. **(3)**

7. Which ion has the largest radius ?

(1) Se^{2-} (2) F^- (3) O^{2-} (4) Rb^+

Ans. **(1)**

8. Which one of the following is correct order of the size of iodine species ?

(1) $I^+ > I^- > I$ (2) $I^- > I > I^+$ (3) $I > I^- > I^+$ (4) $I > I^+ > I^-$

Ans. **(2)**

9. According to Slater rule, which of the following has the highest screening constant for last electron ?

(1) Fluorine (F) (2) Oxygen (O) (3) Carbon (C) (4) Nitrogen (N)

Ans. **(1)**

10. The ionic sizes decreases in the order :

(1) $K^+ > S^{2-} > Sc^{3+} < V^{5+} < Mn^{7+}$ (2) $S^{2-} < K^+ > Sc^{3+} > V^{5+} > Mn^{7+}$

(3) $Mn^{7+} > V^{5+} < Sc^{3+} > K^+ > S^{2-}$ (4) $Mn^{7+} < V^{5+} < Sc^{3+} < S^{2-} > K^+$

Ans. **(2)**

11. The set representing the correct order of ionic radius is :

(1) $Li^+ > Be^{2+} > Na^+ > Mg^{2+}$ (2) $Na^+ > Li^+ > Mg^{2+} > Be^{2+}$

(3) $Li^+ > Na^+ > Mg^{2+} > Be^{2+}$ (4) $Mg^{2+} > Be^{2+} > Li^+ > Na^+$

Ans. **(2)**

12. Crystal radius of three ions have 100 pm, 81 pm and 75 pm respectively. If all the three ions have same number of protons, then select the correct statement.

(1) All the three ions are isoelectronic

(2) All the three ions have same charge

(3) All the three ions have different charge but metal is same

(4) All are correct

Ans. **(3)**

13. Which of the following has largest radius :-

(1) $1s^2, 2s^2, 2p^6, 3s^2$ (2) $1s^2, 2s^2, 2p^6, 3s^2, 3p^1$ (3) $1s^2, 2s^2, 2p^6, 3s^2, 3p^3$ (4) $1s^2, 2s^2, 2p^6, 3s^2, 3p^5$

Ans. **1**

14. Ionic radii of :-

(1) $Ti^{4+} < Mn^{7+}$ (2) $^{37}Cl^- < ^{35}Cl^-$ (3) $K^+ > Cl^-$ (4) $P^{3+} > P^{5+}$

Ans. **4**

15. In an anion :-

(1) Number of proton decreases (2) Protons are more than electrons

(3) Effective nuclear charge is more (4) radius is larger than neutral atom

Ans. **4**

DPP - 3

1. Which of the following processes involves absorption of energy ?

(1) $Cl(g) + e^- \longrightarrow Cl^-(g)$ (2) $O^-(g) + e^- \longrightarrow O^{2-}(g)$

(3) $O(g) + e^- \longrightarrow O^-(g)$ (4) $S(g) + e^- \longrightarrow S^-(g)$

Ans. **(2)**

2. Energy required for the ionisation of 0.02 gram atom of magnesium is x kJ. The amount of energy required to ionise 1 atom of magnesium is

(1) x kJ (2) $\frac{x}{0.02N_A}$ J (3) $\frac{x \times 10^3}{0.02N_A}$ J (4) xN_A kJ

Ans. **(3)**

3. Which systematic diagram is correct about ionisation energy of coinage metals ?

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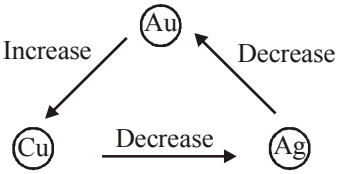

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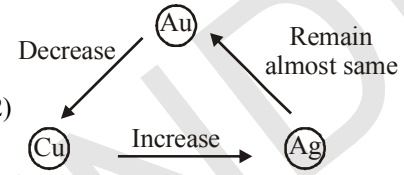

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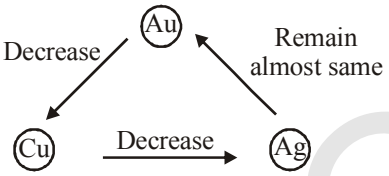

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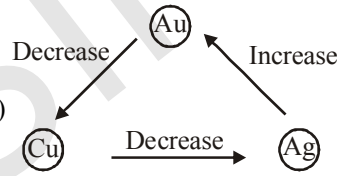


Ans. **(4)**

4. Assign true (T) or false (F) for the following statements and select correct option for your answer.

(I) I.P. of $O_{(g)}$ is less than I.P. of $O^-_{(g)}$ (II) I.P. of $Ne_{(g)}$ is greater than I.P. of $Ne^+_{(g)}$

(III) E.A. of $Ne_{(g)}$ is greater than E.A. of $O_{(g)}$ (IV) I.P. of $N_{(g)}$ is greater than I.P. of $N^+_{(g)}$

(1) F, F, T. T (2) T, T, T, T (3) T, T, T, F (4) F, T, F, T

Ans. **(1)**

5. Process $Na^+ \xrightarrow{I} Na_{(g)} \xrightarrow{II} Na_{(s)}$:

(1) In (I) energy released, (II) energy absorbed (2) In both (I) & (II) energy is absorbed

(3) In both (I) & (II) energy is released (4) In (I) energy absorbed, (II) energy released

Ans. **(3)**

6. Arrange the elements with the following electronic configuration of valence electron in decreasing order of $\Delta_{eg}H^{(-)}$

(A) $3s^2 3p^4$ (B) $2s^2 2p^4$ (C) $2s^2 2p^3$ (D) $2s^2 2p^5$

(1) C > A > B > D (2) C > B > A > D (3) b > C > D > A (4) A > B > C > D

Ans. **(2)**

7. Be and Mg have zero value of electron affinity, because :

(1) Be and Mg have [He] $2s_2$ and [Ne] $3s^2$ configuration respectively

(2) 2s and 3s orbitals are filled to their capacity

(3) Be and Mg are unable to accept electron

(4) All the above are correct

Ans. **(4)**

8. Compared to the first ionisation potential, the value of second ionisation potential of an element is :-

(1) Negligible (2) Smaller (3) Greater (4) Double

Ans. **3**

9. Least ionisation potential will be of :-

(1) Be^{3+} (2) H (3) Li^{+2} (4) He^{+}

Ans. **2**

10. Select the correct order of I.E. :-

(1) $Cl^- > Cl > Cl^+$ (2) $Cl^+ > Cl > Cl^-$ (3) $Cl > Cl^+ > Cl^-$ (4) $Cl^- > Cl^+ > Cl$

Ans. **2**

11. Least electronegative element is :-

(1) I (2) Br (3) C (4) Fr

Ans. **4**

DPP - 4

1. Which of the following oxide is expected to react readily with NaOH ?

(1) Na_2O (2) CaO (3) NO (4) Cl_2O_7

Ans. **(4)**

2. Match the following, regarding nature of the oxides

	Column-I	**Column-II**
a.	N_2O	(i) Basic
b.	BaO	(ii) Amphoteric
c.	As_2O_3	(iii) Acidic
d.	Cl_2O_7	(iv) Neutral

(1) a(ii), b(i), c(iii), d(iv) (2) a(iv), b(i), c(iii), d(ii) (3) a(iv), b(i), c(ii), d(iii) (4) a(ii), b(i), c(iv), d(iii)

Ans. **(3)**

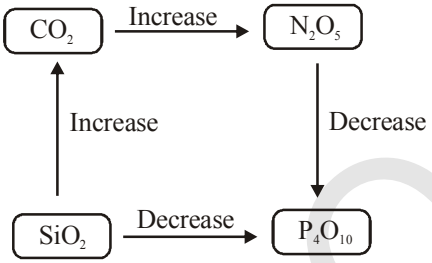
3. Valence electrons in the element A are 3 and that in element B are 6. Most probable compound formed from A and B is

(1) A_2B (2) AB_2 (3) A_6B_3 (4) A_2B_3

Ans. **(4)**

4. Select correct diagram about the acidic strength of oxides :

(1)



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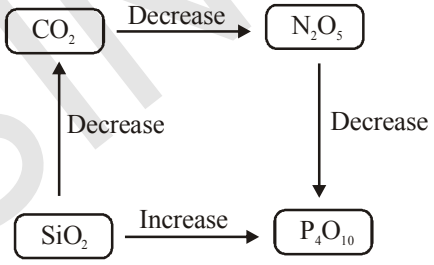

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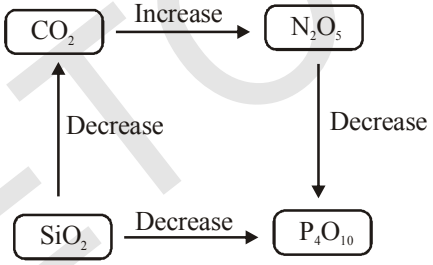

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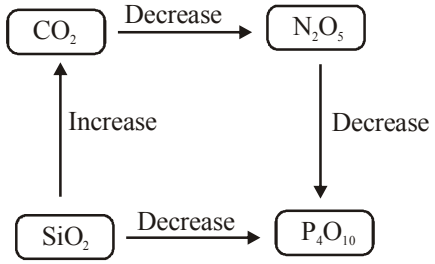

Ans. **(1)**

5. Which of the following elements will form alkaline oxide ?

(1) K (2) P (3) S (4) Cl

Ans. **(1)**

6. Identify the correct order of acidic strength of CO_2, CuO, CaO, H_2O -

(1) $CaO < CuO < H_2O < CO_2$ (2) $H_2O < CuO < CaO < CO_2$

(3) $CaO < H_2O < CuO < CO_2$ (4) $H_2O < CO_2 < CaO < CuO$

Ans. **(1)**

7. In which of the following sets of oxides, all are amphoteric oxide ?

(1) ZnO, K_2O, SO_3 (2) ZnO, P_2O_5, Cl_2O_7 (3) SnO_2, Al_2O_3, ZnO (4) PbO_2, SnO_2, SO_3

Ans. **(3)**

8. The most acidic oxide among the following is :

(1) Cl_2O_5 (2) Cl_2O (3) Cl_2O_3 (4) Cl_2O_7

Ans. **(4)**

9. The decreasing order of the acidic properties of oxides :

(1) $P_2O_5 > KO_2 > ZnO > MgO$ (2) $P_2O_5 > ZnO > MgO > KO_2$

(3) $KO_2 > P_2O_5 > ZnO > MgO$ (4) $KO_2 > MgO > ZnO > KO_2$

Ans. **(2)**

10. The decreasing order of the basic properties of oxides

(1) $Tl_2O > Tlo_3 > Ga_2O_3 > Al_2O_3$ (2) $Ga_2O_3 > Tl_2O > Tl_2O_3 > Al_2O_3$

(3) $Al_2O_3 > Tl_2O > Tl_2O_3 > Ga_2O_3$ (4) $Tl_2O > Ga_2O_3 > Al_2O_3 > Tl_2O_3$

Ans. **(1)**