DPP EXERCISE
NEET
INORGANIC CHEMISTRY

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s-Block

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DPP -1

1 . The correct increasing order of densities of alkali metals is

(1) Li < Na < K < Rb < Cs (2) Cs < Rb < K < Na < Li

(2) Li < K < Na < Rb < Cs (4) K < Na < Li < Rb < Cs

Ans. **(3)**

2 . Which one of the following alkali metals is the most metallic ?

(1) Li (2) Na (3) K (4) Cs

Ans. **(4)**

3 . The metallic lusture exhibited by sodium is due to

(1) Diffusion of Na^+ ions (2) Oscillation of loose electrons

(3) Excitation of free protons (4) Existence of body centred cubic lattice

Ans. **(2)**

4 . Which one of the following ions has the largest size in aqueous solution ?

(1) Rb^+ (2) Na^+ (3) K^+ (4) Li^+

Ans. **(4)**

5 . Which among the following is the strongest reducing agent ?

(1) K (2) Na (3) Al (4) Mg

Ans. **(1)**

6 . Sodium chloride gives a golden yellow colour to the bunsen flame, which is due to

(1) Sublimation of metallic sodium to give yellow vapour

(2) Photosensitivity of sodium

(3) Low ionization potential of sodium

(4) Emission of excess of energy absorbed as a radiation in the visible region

Ans. **(4)**

7 . Which of the following oxides is the most basic in nature ?

(1) Na_2O (2) BeO (3) Li_2O (4) H_2O

Ans. **(1)**

8 . Which of the following hydride is the most stable ?

(1) LiH (2) KH (3) NaH (4) CsH

Ans. **(1)**

9 . Na_2CO_3 can be manufactured by Solvay's process but K_2CO_3 cannot be prepared because

(1) K_2CO_3 is more soluble (2) K_2CO_3 is less soluble

(3) $KHCO_3$ is more soluble than $NaHCO_3$ (4) $KHCO_3$ is less soluble than $NaHCO_3$

Ans. **(3)**

10. Which hydroxide decomposes on heating ?

(1) NaOH (2) KOH (3) LiOH (4) RbOH

Ans. **(3)**

DPP - 2

1. Solvay's process is used for the manufacture of

(1) Sodium metal (2) Washing soda

(3) Bleaching powder (4) Quick lime

Ans. **(2)**

2. In the manufacture of sodium hydroxide, by product obtained is

(1) O_2 (2) Cl_2 (3) Na_2CO_3 (4) NaCl

Ans. **(2)**

3. Which of the following alkali metal bicarbonates readily decomposes ?

(1) $LiHCO_3$ (2) $KHCO_3$ (3) $CsHCO_3$ (4) $NaHCO_3$

Ans. **(1)**

4. The polarizing power of magnesium is nearly same as

(1) Lithium (2) Sodium (3) Potassium (4) Cesium

Ans. **(1)**

5. In the preparation of sodium carbonate (Na_2CO_3) which of the following is used as raw material ?

(1) Slaked lime (2) Brine (3) Quick lime (4) Sodium hydroxide

Ans. **(2)**

6. Which of the following halides has the highest melting point ?

(1) NaCl (2) NaBr (3) NaF (4) NaI

Ans. **(3)**

7. The first ionization energies of alkaline earth metals are higher than those of the alkali metals because

(1) There is increase in the nuclear charge of the alkaline earth metals

(2) There is decrease in the nuclear charge of the alkaline earth metals

(3) There is no change is the nuclear charge

(4) All of these

Ans. **(1)**

8. The most electropositive metal among the alkaline earth metal is

(1) Be (2) Mg (3) Ca (4) Ba

Ans. **(4)**

9. Why does magnesium form Mg^{2+} and not Mg^{+} ?

(1) Magnesium (II) is insoluble in water

(2) Commonly higher oxidation states are preferred by metals

(3) Ionic radius of Mg(II) is smaller than of Mg(I)

(4) High hydration energy as well as high latice energy of divalent magnesium ion

Ans. **(4)**

10. Which of the following alkaline earth metal does not impart any colour to flame ?

(1) Be (2) Mg (3) Ca (4) Sr

Ans. **(2)**

DPP - 3

1. Lime water is an aqueous solution of

(1) $MgSO_4$ (2) $Ca(OH)_2$ (3) $CaCO_3$ (4) $CaSO_4$

Ans. **(2)**

2. Which one of the following chlorides has maximum tendency to form hydrate ?

(1) $BaCl_2$ (2) NaCl (3) $MgCl_2$ (4) LiCl

Ans. **(3)**

3. Setting of plaster of paris involves

(1) Oxidation with atmospheric oxygen (2) Combination with atmospheric CO_2

(3) Dehydration (4) Hydration

Ans. **(4)**

4. Which of the following is 'dead burnt plaster' ?

(1) $CaCO_3$ (2) $CaSO_4 \cdot \frac{1}{2}H_2O$ (3) $CaSO_4.2H_2O$ (4) $CaSO_4$

Ans. **(4)**

5. Identify the unknown product (x) in the following reaction

Milk of lime + $Cl_2 \rightarrow x + CaCl_2 + H_2O$

(1) $Ca(OCl)_2$ (2) $Ca(OH)_2$ (3) CaO (4) $CaCO_3$

Ans. **(1)**

6. Formula of Gypsum is

(1) $CaSO_4.2H_2O$ (2) $CaSO_4 \cdot \frac{1}{2}H_2O$ (3) $2CaSO_4.H_2O$ (4) $CaSiO_3$

Ans. **(1)**

7. Which one of the following compounds is the most soluble in water ?

(1) $Mg(OH)_2$ (2) $Sr(OH)_2$ (3) $Ca(OH)_2$ (4) $Ba(OH)_2$

Ans. **(4)**

8. Which of the following metals is most commonly used in photochemical cells ?

(1) Lithium (2) Calcium (3) Caesium (4) Francium

Ans. **(3)**

9. Which of the following is an amphoteric oxide ?

(1) CaO (2) NaOH (3) BeO (4) LiOH

Ans. **(3)**

10. Which of the following statement is true for all the alkali metals ?

(1) Their nitrates decompose on heating to give NO_2 and O_2

(2) Their carbonates decompose on heating to give CO_2 and metal oxide

(3) They react with oxygen to give mainly the oxide MO_2

(4) They react with halogens to give halides M^+X^-

Ans. **(4)**

DPP-4

1. Which of these give oxide on strong heating ?

(1) $LiNO_3$ (2) $NaNO_3$ (3) KNO_3 (4) $RbNO_3$

Ans. **(1)**

2. Which among the following shows the tendency to from peroxide ?

(1) Li (2) Mg (3) Be (4) Ba

Ans. **(4)**

3. Which one of the following statements is correct ? The chlorides of group II metals

(1) Are all hygroscopic in nature

(2) Increase in lattice enthalpy from $BeCl_2$ to $BaCl_2$

(3) Decrease in m.p. from $BeCl_2$ to $BaCl_2$

(4) Are all insoluble except $BaCl_2$

Ans. **(1)**

4. The solubility order of the chlorides of the alkali metals is

(1) NaCl > KCl > RbCl > CsCl (2) CsCl > RbCl > KCl > NaCl

(3) KCl > NaCl > RbCl > CsCl (4) CsCl > RbCl > NaCl > KCl

Ans. **(4)**

5. The thermal stability order of the carbonates is

(1) $Na_2CO_3 > K_2CO_3 > BeCO_3 > BaCO_3$ (2) $K_2CO_3 > Na_2CO_3 > BaCO_3 > BeCO_3$

(3) $BaCO_3 > BeCO_3 > K_2CO_3 > Na_2CO_3$ (4) $BeCO_3 > Na_2CO_3 > BaCO_3 > K_2CO_3$

Ans. **(2)**

6. The thermal stability of alkaline earth metal carbonates increases from Be to Ba. This is because

(1) Covalent nature decreases and ionic nature increases

(2) Lattice energy increases

(3) Electropositive nature decreases

(4) None of these

Ans. **(1)**

7. The solubility of sulphates in water decreases from $MgSO_4$ to $BaSO_4$. It is due to the fact that

(1) Ionic nature increases (2) Size of M^{2+} ion increases

(3) Lattice energy decreases (4) Hydration enthalpy of M^{2+} ions decreases

Ans. **(4)**

8. Which of the following order is correct for thermal stability ?

(1) $MgCO_3 < CaCO_3 < BeCO_3$ (2) $BeCO_3 < MgCO_3 < CaCO_3$

(3) $CaCO_3 < BeCO_3 < MgCO_3$ (4) $CaCO_3 < MgCO_3 < BeCO_3$

Ans. **(2)**

9. Which one of the following statements concerning the compounds of Lithium is false ?

(1) The hydroxide, carbonate, nitrate, decompose to give the oxide on heating

(2) It is the most electronegative among alkali metals

(3) The hydrogen carbonate cannot be isolated as a stable solid

(4) It forms a peroxide but not superoxide

Ans. **(4)**

10. Which of the following statements is incorrect for Be ?

(1) Most of its compound are largely covalent

(2) $BeCl_2$ has bridged covalent structure and is a linear molecule above 1200 K

(3) It has distinctive group properties due to smaller size and high electronegativity

(4) It forms Be^{2+} ions because of the lower value the sum of Ist and 2nd I.E.

Ans. **(4)**

DPP–5

1. Which of the following is not an acidic salt

(1) NaH_2PO_2 (2) NaH_2PO_3 (3) NaH_2PO_4 (4) Na_2HPO_4

Ans. **(1)**

2. Baking soda is

(1) NaCl (2) $NaHCO_3$ (3) Na_2SO_4 (4) Na_2CO_3

Ans. **(2)**

3. Sodium is usually kept under

(1) Alcohol (2) Kerosene oil (3) Water (4) Petrol

Ans. **(2)**

4. Metallic Magnesium is prepared by

(1) Displacement of Mg by iron from $MgSO_4$ solution

(2) Electrolysis of an aqueous solution of $Mg(NO_3)_2$

(3) Electrolysis of molten $MgCl_2$

(4) Reduction of MgO by aluminium

Ans. **(3)**

5. Chemical 'A' is used for water softening to remove temporary hardness. 'A' reacts with sodium carbonate to generate caustic soda. When carbon dioxide is bubbled through 'A', it turns cloudy. What is the chemical formula of 'A' ?

(1) $CaCO_3$ (2) CaO (3) $Ca(OH)_2$ (4) $Ca(HCO_3)_2$

Ans. **(3)**

6. Alums are not formed by which alkali metal ?

(1) Li (2) K (3) Na (4) Cs

Ans. **(1)**

7. Epsom salt's chemical formula is

(1) $MgSO_4.7H_2O$ (2) $Mg(OH)_2$ (3) $2CaSO_4.H_2O$ (4) $BaSO_4$

Ans. **(1)**

8. Molecular formula of Glauber's salt is

(1) $MgSO_4.7H_2O$ (2) $CuSO_4.5H_2O$ (3) $FeSO_4.7H_2O$ (4) $Na_2SO_4.10H_2O$

Ans. **(4)**

9. The electrolysis of molten $KCl . MgCl_2 . 6H_2O$ gives

(1) Mg only (2) K only (3) K and Mg only (4) Mg and Cl_2

Ans. **(4)**

10. Alkaline earth metals from hydrated crystalline solids such as $MgCl_2 . 6H_2O$ and $CaCl_2 . 6H_2O$.
This is due to

(1) Smaller ionic size (2) Increased charge on ions

(3) Higher hydration enthalpies (4) High oxidation potential

Ans. **(3)**

DPP-6

1. Compared with the alkaline earth metals, the alkali metals show

(1) Greater hardness (2) Higher m.p.

(3) Smaller ionic radii (4) Lower ionization energy

Ans. **(4)**

2. Which is not the compound of sodium ?

(1) Chile salt petre (2) Salt petre (3) Glauber's salt (4) Soda ash

Ans. **(2)**

3. $CaCO_3 \xrightarrow{\Delta} A + B_{(gas)}$, $A \xrightarrow{H_2O} C \xrightarrow[40°C]{Cl_2} D$

Product D is

(1) $CaCl_2$ (2) $Ca(OH)_2$ (3) $CaCl_2.6H_2O$ (4) $CaOCl_2$

Ans. **(4)**

4. Correct order of solubility

(1) $BeSO_4 > BaSO_4$ (2) $LiCl > LiF$ (3) $NaHCO_3 < KHCO_3$ (4) All of these

Ans. **(4)**

5. Among the oxides of group 2, least basic is

(1) MgO (2) CaO (3) SrO (4) BaO

Ans. **(1)**

6. Beryllium on ignition in air gives

(1) BeO (2) Be_3N_2 (3) Both (1) and (2) (4) BeC

Ans. **(3)**

7. $Na_2CO_3 + H_2O + CO_2 \rightarrow$ (A). White crystalline powder (A) on reaction with phenolphthalein gives

(1) Pink colour (2) Yellow colour (3) Orange colour (4) No colour

Ans. **(1)**

8. Composition of baking soda is

(1) Starch (2) $Ca(H_2PO_4)_2$ (3) $NaHCO_3$ (4) All of these

Ans. **(3)**

9. Which of the following statement is true ?

(1) $NaHCO_3$ is strongly basic nature

(2) Pure NaCl is hygroscopic

(3) On increasing temperature increase in solubility of NaCl in water occurs

(4) All of these

Ans. **(3)**

10. On heating sodium hydrogen carbonate, the product formed is

(1) $Na_2O + CO_2 + H_2O$ (2) $Na_2CO_3 + CO_2$

(3) $Na_2CO_3 + H_2O + CO_2$ (4) $Na_2CO_3 + H_2O$

Ans. **(3)**