NEET REVISION SERIES

P-BLOCK (GROUP-15, 16, 17, 18)

Revise Most Important Questions to Crack NEET 2020

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Q-1 - 11479224

One mole of H_3PO_3 on reaction with excess of NaOH gives :

(A) One mole of Na_2HPO_3

(B) Two moles of $Na_2H_2PO_3$

(C) Two moles of Na_2HPO_3

(D) One mole of Na_3PO_3

CORRECT ANSWER: A



SOLUTION:

 $H_3PO_3 + 2NaOH$ Express1 mole $\rightarrow Na_2HPO_3$ 1 mole $+ 2H_2O$ Watch Video Solution On Doubtnut App

If O_2 is removed from the formula of anhydride of HNO_2 , then the formula of the resulting compound satisfies which of the following properties ?

(A) It produces tears in eyes.

(B) It supports combustion

(C) It is paramagnetic

Q-2 - 11479225

(D) It cannot react with red hot copper.

CORRECT ANSWER: B

The anhydride of HNO_2 is N_2O_3 . If O_2 is removed

from N_2O_3 , then the resulting compound is N_2O_3 .

Nitrous acid supports combustion.



Q-3 - 11479227

The compound is covalent in gaseous state but ionic in solid state is.

(A) PCl_5

(B) PCl_3

(C) CCl_4

(D) NH_3

CORRECT ANSWER: A

 PCl_5 exists as PCl_5 in gaseous state i.e. a covalent molecule. In solid state, it exists as $[PCl_4]^{\oplus} [PCl_6]^?$ an ionic compound.

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Q-4 - 12226957

The equivalent weight of phosphoric acid (H_3PO_4) in the reaction $NaOH + H_3PO_4$ $\rightarrow NaH_2PO_4 + H_2O$

is

(A) 25



(C) 59



Molecular weight of H_3PO_4 is 98 and change in its

valency = 1 equivalent wieght of H_3PO_4

- Molecular weight
- change in valency
- $=rac{98}{1}=98$

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Q-5 - 18255436

Phosphorus has the oxidation state +3 in

(A) orthophosphoric

(B) phosphorous acid

(C) metaphosphoric acid

(D) pyrophosphoric acid

Orthophosphoric acid (H_3PO_3) , ON of P = +5Phosphorous acid (H_3PO_3) , ON of P = +3Metaphosphoric acid (HPO_3) , ON of P = +5Pyrophosphoric acid $(H_4P_2O_7)$, ON of P = +5

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Q-6 - 13169657

Which of the following oxoacide of phosphorus is a reducing agent

and a monobasic acid as well?

(A) Orthophosphorous acid (H_3PO_3)

(B) Orthophosphoric acid (H_3PO_4)

(C) Hypophosphorous acid (H_3PO_2)

(D) Cyclotrimetaphosphoric acid, $(HPO_3)_3$

CORRECT ANSWER: 3

SOLUTION:

The oxoacids which contain P - H bond have strong reducing properties. Thus ,hypophosporous acid is a good reducing agent as it contains two P - H bonds. For example ,it reduces silver nitrate to metallic silver. $4AgNO_3 + 2H_2O$ $+ H_3PO_2 \rightarrow 4Ag$ $+ 4HNO_3 + H_3PO_4$

The P-H bonds are not ionisable to give H^+ and do not play any role in basicity. Only those H atoms which

are attached with oxygen in P - OH bonds are

ionisable and cause bacity .Thus ,hyprophosphorous is

monobasic as its structure has only one P_OH bond. On

the other hand, H_3PO_3 and H_3PO_4 are dibasic and tribasic,respectively as the structure of H_3PO_3 has two P_OH bonds and H_3PO_3 three.

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Q-7 - 12227007

Oxidation no. of P in $H_4P_2O_5$, $H_4P_2O_6$, and $H_4P_2O_7$ are respectively

(A) +3, +4, +5(B) +4, +3, +5

(C) + 3, +5, +4

(D) + 5, +3, +4

CORRECT ANSWER: A

SOLUTION:

$$egin{array}{ll} H_4P_2O_5\!:\!4 imes1+2\ imes a-5 imes2=0 \end{array}$$

a = +5

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Q-8 - 11032649

The oxidation number of phosphorus in PO_4^{3-} , P_4O_{10} , and $P_2O_7^{4-}$

is

(A) + 5

 $(\mathsf{B})+3$

$$(C) - 3$$

(D) + 2

CORRECT ANSWER: A

SOLUTION:

Maximum oxidation number of P in all is +5.

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Q-9 - 18256063

In P_4O_{10} ,

(A) second bond in P=O is formed by $p\pi - d\pi$ back



(B) P=O bond is formed by $p\pi - p\pi$ bonding

(C) P=O bond is formed by $d\pi - d\pi$ bonding

(D) P=O bond is formed by $d\pi - d\pi - 3\sigma$ back

bonding

CORRECT ANSWER: A

SOLUTION:

The terminal bond formed is $ho\pi-d\pi$ bonding .

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Q-10 - 18255185

The number of oxygen atoms bonded to one phosphorus atom in

 P_4O_6 is



(B) 3

(C) 6

(D) 5

SOLUTION:

(b) One phosphorus is bonded to three O-atoms as represented by 1,2,3 for P-atom present in the structure

given below



Structure of P₄O₆



 P_4O_{10} is the anhydride of the following

(A) H_3PO_2

(B) H_3PO_3

(C) H_3PO_4

(D) H_3PO_5

CORRECT ANSWER: C

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Q-12 - 11479232

Complete and balance the following reactions :

(i) $P_4O_{10} + PCl_5 \rightarrow __$



 $NH_3 + NaOCl \rightarrow ___$ + $NaCl + H_2O$

(iii) $Ca(PO_4)_3 + 4H_3PO_4$ $\rightarrow ___$

(iv) $AgCl + NH_4OH \rightarrow _____$ $+ _____$

(v)

 $Pb(NO_3)_2 \xrightarrow{\Delta} PbO + __$ + _____

(vi)

 $Mg + HNO_3 \rightarrow ___$

(II) NH_2NH_2

CORRECT ANSWER: (I) $POCL_3$

(III) $CA(H_2PO_4)_2$ (IV) $[AG(NH_3)_2]CL$ $+ H_2O$

(V) $NO_2 + O_2$ (VI) $MG(NO_3)_2 + H_2$.

SOLUTION:

(i) $P_4O_{10}+6PCl_5
ightarrow 10POCl_3$

(ii) $2NH_3+NaOCl$

$egin{array}{lll} ightarrow NH_2NH_2 + NaCl \ ightarrow H_2O \end{array}$



$$egin{aligned} Ca_3{(PO_4)}_3 + H_3PO_4 \ &
ightarrow 3Ca(H_2PO_4)_2 \end{aligned}$$

(iv) $AgCl + 2NH_4OH$ $\rightarrow \left\lceil Ag(NH_3)_2 \right\rceil Cl$ $+ 2H_2O$

$$2Pb(NO_3)_2 \stackrel{\Delta}{\longrightarrow} 2PbO \ + 4NO_2 + O_2$$

(vi) $Mg + 2HNO_3$ $\rightarrow Mg(NO_3)_2 + H_2$



Q-13 - 11479238

Solid N_2O_5 exists as $NO_2^{\oplus}NO_3^?$ and hence is called nitronium

nitrate.

Which of the following statement is correct for the oxides of nitrogen ?

(A) Dinitrogen trioxide dissolves in potassium hydroxide forming potassium nitrate.

(B) Aqueous solution of nitrogen dioxide behaves both as a reducing agent and as an oxidising agent.

(C) NO_2 is non-planar.

(D) Nitrous oxide is fairly soluble in cold water and turns blue litmus red.

CORRECT ANSWER: B



Q-14 - 13169618

which of the following statement is not correct for the nitrogen dioxide?

(A) It is paramagnetic

(B) It dimerizes into colourless N_2O_4

(C) It acts as an oxidizing as well as a reducing agent

(D) it is a neutral oxide

CORRECT ANSWER: 4

SOLUTION:

Nitrogen dioxide is an acidic oxide. It dissolves in water

very readily giving an acidic solution:

 $2NO_2(g) + H_2O(l)$ $\Leftrightarrow HNO_3(aq.)$ $+ HNO_2(aq.)$

On account of this, it is known as mixed an hydride of

these two acide. However, with an excess of warm water

it forms nitric acid and nitric oxide.

 $3NO_2 + H_2O \ \longrightarrow 2HNO_3 + NO$

When absorbed by alkalies, nitrates are formed: $2NO_2 + 2NaOH$ $\rightarrow NaNO_2$ $+ NaNO_3 + H_2O$

 NO_2 molecule is an odd electron molecule. The paramagnetic nature of NO_2 confirms this view. Due to possession of an odd electron, it is colored and has a tendency to form a colorless, diamagnetic dimer N_2O_4 . It acts as an oxidizing agent, oxidizing metals like

sodium, potassium, mercury, tin, copper etc

$egin{array}{l} NO_2+2Na ightarrow Na_2O \ +NO \end{array}$

 $NO_2 + 2Cu
ightarrow Cu_2O \ + NO$

. Nonmetals like carbon, sulphur, phosphorus when

burnt in its atmosphere are converted into corresponding

oxide:

 $2NO_2 + C
ightarrow CO_2 + 2NO$

 $2NO_2 + S
ightarrow SO_2 + 2NHO$

 $5NO_2 + 2P
ightarrow P_2O_5 \ + 5NO$

It liberates iodine form KI and turns starch- iodide paper

blue.

 $2Kl + 2NO_2$

 $ightarrow 2KNO_2 + I_2$

In aqueous solution it oxidizes sulphur dioxide to

sulphuric acid:

 $SO_2 + H_2O + NO_2 \
ightarrow H_2SO_4 + NO$

This reaction is used for the manufacture of H_2SO_4 by lead chamber process. Hydrogen sulphide is oxidized to sulphur while carbon monoxide is oxidized to carbon

duoxide:

 $egin{array}{ll} H_2S+NO_2
ightarrow H_2O \ +S+NO \end{array}$

$$CO + NO_2 \rightarrow CO_2 + NO$$

It aiso behaves as a reducing agent, e.g. it reduces

ozone to oxygen:

$$2NO_2 + O_3
ightarrow N_2O_5 \ + O_2$$

It declourises acidified $KMnO_4$ solution

 $2KMnO_4 + 3H_2SO_4 \
ightarrow K_2SO_4 \
ightarrow K_2SO_4 \
ightarrow 2MnSO_4 + 3H_2O \
ightarrow 5O \
ightarrow 5O \
ightarrow 10NO_2 + 5H_2O + 5O \
ightarrow 10HNO_3 \
ightarrow 2KMnO_4 + 3H_2SO_4 \
ightarrow 10NO_2 + 2H_2O \
ightarrow K_2SO_4 \
ightarrow 2MnSO_4 \
ightarrow 10HNO_3 \
ightarrow K_2SO_4 \
ightarrow K_2SO_4 \
ightarrow 10HNO_3 \
ightarrow K_2SO_4 \$

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Q-15 - 11479457

Which of the following oxides of nitrogen is a coloured gas?



(B) *NO*

(C) NH_3



CORRECT ANSWER: D

SOLUTION:

 NO_2 is a brown-coloured gas.

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Q-16 - 13169828

Which of the following oxides of nitrogen is a linear and

asymmetrical molecules?

(A) N_2O



(C) NO_2

(D) N_2O_4

 N_2O molecule has a linear asymmetrical structure and

is a resonance hybrid of the two forms:

$$egin{aligned} & \stackrel{-}{N} = \stackrel{+}{N} = \stackrel{\cdots}{O} \leftrightarrow :N \ & \equiv \stackrel{+}{N} - \stackrel{\cdots}{O} :^{-} \end{aligned}$$

Other oxides have symmetrical structures:



Which of the following oxides of nitrogen is a mixed anhydride of two acids?

(A) NO_2

(B) N_2O_4

(C) both (1) and (2)

(D) N_2O_5

CORRECT ANSWER: 3

SOLUTION:

Nitrogenn tetroxide and dioxide are in equilibrium with

each other:

$N_2O_4 \Leftrightarrow 2NO_2$

The mixture is usually called by the name of the form

which predominates at the temperature, neither form is a

true peroxide, and it is incorrect to refer to this substance

as nitrogen peroxide for that reason. The degree of dissociation is about 20 % at the boiling point, but vapour density measurements show that the proportion of dioxide increases rapidly as the temperature is raised, reaching nearly 100 % at 140C. This is also apparent from the change in colour from yellow to dark brown as the temperature rises.

At higher temperature further dissociation occurs, which explains why nitrogen dioxide supports the combustion

of strongly burning materials:

The dark colour, which is caused by the NO_2

molecules, is at its deepest at about 150C and fades to

colourless above 6006()C reappearing on cooling. The

arrows stress the reversibility of these changes, which provide good examples of thermal dissociation. The equilibrium mixture of the two oxides is strongly acidic, very soluble in water, forming a mixture of nitrous and nitric acide, of which it the mixed anhydride: $N_2O_4 \Leftrightarrow 2NO_2$ $\xrightarrow{H_2O(l)} HNO_2(aq.)$ $+ HNO_3(aq.)$

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Q-18 - 13169826

Which of the following oxides of nitrogen is known as laughing

gas?

(C) Dinitrogen monoxide

(B) Dinitrogen oxide

(A) Dinnitrogen trioxide

en trioxide

CORRECT ANSWER: 2

SOLUTION:

When inhaled in moderate quantity, N_2O produces

hysterical laughter, hence named as laughing gas.

However, when inhaled for long, it produces insensibility

and may prove fatal too.

Nitrous oxide (N_2O) is nontoxic in small amounts but all

the other nitrogen oxides are highly toxic.

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Sulphur on reaction with concentrated HNO_3 . Gives (A) which

reacts with reacts with NaOH gives (B). (A) and (B) are

(A) $H_2SO_3, Na_2S_2O_3$

(B) NO_2, Na_2S

(C) H_2SO_4, Na_2SO_4

(D) $H_2S_2O_3, Na_2S_2O_3$

CORRECT ANSWER: C

SOLUTION:

 $H_2SO_4 + 2NaOH$ (A)

$ightarrow Na_2SO_4 + 2H_2O_4$



Q-20 - 11479553

- In which of the following species, S-atom assumes sp^3 hybrid state
- ?
- (I) (SO_3) ,
- (II) (SO_2) ,
- (III) (H_2S) ,
- $(IV)(S_8).$
 - (A) I, II
 - $(\mathsf{B}) II, III$

(C) II, IV

(D) III, IV

CORRECT ANSWER: D

In H_2S and S_8 , S in sp^3 hybridised.

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Q-21 - 15217104

find the total numbers of compounds which contain S-S linkage. $H_2S_2O_3, H_2S_2O_5, H_2S_4O_6,$ $H_2S_2O_7, H_2SO_2O_8,$ $H_2SO_2O_6$

CORRECT ANSWER: 4

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Q-22 - 11479594

The crown structure is possessed by

(A) Phosphorous

(B) Cyclo-octaring of sulphur

(C) Cyclic trimer of SO_3

(D) Cyclic tetrameric form of SeO_3

CORRECT ANSWER: B

SOLUTION:

Sulphur exists as S_8 molecule.

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Q-23 - 12660779

In the reaction

 $2Ag + 2H_2SO_4 \rightarrow Ag_2SO_4$

$+2H_2O + SO_2, H_2SO_{40}$

acts as a / an

(A) Reducing agent

(B) Oxidising agent

(C) Catalytic agent

(D) Dehydrating agent

CORRECT ANSWER: B

SOLUTION:

$$\begin{array}{ccc} 2Ag &+ 2H_2SO_4 \\ \text{Reducing} & \text{Oxidising} \\ \text{agent} & \text{Agent} \end{array}$$

$$egin{array}{lll}
ightarrow Ag_2SO_4+2H_2O\ +SO_2 \end{array}$$

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Q-24 - 11479622

A boy accidently splashes a few drops of *conc*. H_2SO_4 on his

cotton shirt and splashed part blackens and holes appears. This is

because the sulphuric acid

(A) Heats up the cotton so that it burns

(B) Dehydrates the cotton

(C) Causes the cotton to react with oxygen in air

(D) Removes the elements of water from cotton.

CORRECT ANSWER: D

SOLUTION:

Charring occurs

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Q-25 - 11479639

From the following information

$X + H_2SO_4 \rightarrow Y$ (a colourless and irritating gas)

$Y + K_2 C r_2 O_7 + H_2 S O_4 \rightarrow$ green coloured solution Identify the

pair X and Y.

(A) $Cl^{?}, HCl$ (B) So_{3}^{2-}, SO_{2} (C) $S^{2-}, H_{2}S$ (D) CO_{3}^{2-}, CO_{2}

CORRECT ANSWER: B

SOLUTION:

$$egin{array}{c} SO_3^{2-} + 2H^{\oplus} &
ightarrow SO_2 \ {}_{(X)} & {}_{(Y)} \ + H_2 O \end{array}$$

$$egin{aligned} 3SO_2 + K_2 Cr_2 O_7 \ + H_2 SO_4 &
ightarrow K_2 SO_4 \ + Cr_2 (SO_4)_3 + H_2 O \end{aligned}$$

Green coloured solution



Which of the following acts as pickling agent ?

(A) HNO_3

(B) H_2SO_4

(C) HCl

(D) HNO_2

CORRECT ANSWER: B

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Q-27 - 11479672

The acid used in lead storage cells is

(A) Phosphoric acid

(B) Nitric acid

(C) Hydrochloric acid

(D) Sulphuric acid

CORRECT ANSWER: D

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Q-28 - 11479821

A gas X is passed through water to form a saturated solution. The aqueous solution on treatement with $AgNO_3$ gives a white precipitate. The saturated aqueous solution also dissolves Mg ribbon with evolution of colourless gas Y, X and Y are

(B) CI_2, CO_2

(A) CO_2, CI_2



(C) CI_2, H_2

(D) H_2, CI_2

CORRECT ANSWER: C

SOLUTION:

 $AgNO_3 + HCl$ $\rightarrow AgCl + HNO_3$

 $Mg+2HCl \
ightarrow MgCl_2+ egin{array}{c} H_2 \ (Y) \end{array}$



Q-29 - 11479825

In the halogen group, chlorine is a gas, bromine is a liquid and iodine exists as solid crystals. Then the next halogen astatine (At) would be

(A) Solid at room temperature

(B) Having higher electronegativity

(C) Liquid with higher ionisation enthalpy

(D) Least atomic size

CORRECT ANSWER: A

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Q-30 - 11482139

Which gas is called super halogen?

SOLUTION:

Flourine is called super halogen as it is more reactive

than other halogens.



Q-31 - 11479826

Indine is placed between two liquids C_6H_6 and water:

(A) It dissolves more in C_6H_6

(B) It dissolves more in water

(C) It dissolves equally in both

(D) Does not dissolved in both

CORRECT ANSWER: A



Q-32 - 11467923

Which of the following bonds is the strongest?.

(A) F - F(B) 1 - 1(C) CI - CI(D) O - O

CORRECT ANSWER: C

SOLUTION:

Bond strength of halogens should be

 $F_2 > CI_2 > Br_2 > I_2$

But experimentally it was found to be

 $CI_2 > Br_2 > F_2 > I_2$

Due to very small size of the F-atoms which leads to

repulsions between non-bonding e^{-is} present on each

F-atom thus making F - F bond weaker than

Br-Br bond





Q-33 - 11479837

Halogens react with each other to form a number of compounds called interalogen compounds. Their genral formula is AX_n , where A is less electronegative halogen while X is a more electronegative

halogen and n is its number. The interhalogen compounds are

essentially convalent and more reactive than the halogens since the

bond A-X is weaker than A-A or X-X bond. The reaction of

interhalogens are similar to those of halogens.

Which of the following statement is wrong for interhalogen?

(A) The value of n in AX_n (interhalogen) can be 1,3,5 or 7

(B) The value of n in AX_n (intrehalogen) can be 2,4, or 6

(C) A can never be fluorine as it is most electronegative halogen.

(D) X can never be iodine as it is least electronegative halogen.

CORRECT ANSWER: B

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Q-34 - 12660983

Asseration: The reaciton between $HClO_4$ and liquid HF is:

 $HClO_4 + HF \rightarrow ClO_4^ + H_2F$

Reason: Liquid *HF* acts as base.\

(A) If both asseration and reson are true and the reason is the correct explanation of the asseration.

(B) If both asseration and reason are true ans the reason

is the correct explanation of the asseration.

(C) If asseration is true but reason is false.

(D) If asseration is false but reason is true.

CORRECT ANSWER: A

SOLUTION:

$HClO_4$ acts as proton donor in Liq. HF.

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Find the number of compounds which do not exist.

 ClF_3 BrF_5 HFO_4 $HClO_2$ NCl_5 $PCl_5 OF_4 OF_2 OF_6$

CORRECT ANSWER: 4

SOLUTION:

 $HFO_4, NCl_5, OF_4,$ OF_6

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Q-36 - 11479878

Reducing properties of halogen acid are

(A) HF > HCI > HBr> HI

(B)

HF > HCI > HBr> HI

(C)

HCI > HF > HBr> HI

(D)

HCI > HBr > HF< HI

CORRECT ANSWER: B

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Q-37 - 11479891

The sum of energy team involved in the reaction:

 $1/2X_{2(g)} \to X^{\Theta}_{(aq)}$ is highest in case of

(A) Fluorine

(B) Chlorine

(C) Bromine

(D) Iodine

CORRECT ANSWER: A

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Q-38 - 11479897

Which of the following will displace the halogen form the solution

of the halide ?

(A) Br_2 added to NaCl solution

(B) CI_2 added to KCI solution

(C) CI_2 added to NaF solution

(D) Br_2 added to KI solution

CORRECT ANSWER: D



Q-39 - 19124494

Tincture iodine is :

- (A) aqueous solution of I_2
- (B) solution of iodine in aqueous KI
- (C) alcoholic solution of I_2
- (D) aqueous solution of iodine

CORRECT ANSWER: B

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Q-40 - 11479914

A greenish yellow gas reacts with an alkin metal hydroxide to form

a halate which can be used in fireworks and saftey matches. The gas

and the halate are

(A) $Br_2, KBrO_3$

(B) $CI_2, KCIO_3$

(C) $I_2, NaIO_3$

(D) I_2, KIO_3

CORRECT ANSWER: B

SOLUTION:

The halte used in fireworks and safety matches in

 $KCIO_3$. Thus the gas is CI_2 $3CI_2 + 6KOH$ $ightarrow KCIO_3 + 5KCI$



CI_2 is greenish yellow gas.



A certain compound(X) when treated with copper sulphate solution yields a brown precipatate ,On adding hypo solution ,the ppt ,turns white.The compound (X) is

(A) K_3PO_4

(B) *KI*

(C) KBr

(D) K_2CO_3

CORRECT ANSWER: 2

SOLUTION:

when we add potassium iodide solution to copper

sulphate brown coloured I_2 is obtained:

$egin{aligned} CuSO_4 + 2Kl ightarrow Cul_2 \ + K_2SO_4 \end{aligned}$

$$2Cul_2
ightarrow Cu_2l_2 + I_2$$

lodine is decolourised by sodium thiosulphate (hypo)

where white ppt of sodium tetrathionate is formed:

 $2Na_2S_2O_3+I_2 \
ightarrow 2Nal+Na_2S_4O_6$

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Q-42 - 11479922

Fluorine on reaction with $KIO_{3(aq)}$ gives (A) and on reaction with

 $KHCO_4$ gives (B). (A) and (B) are

(A) $KIO_4, K_2S_2O_3$



(C) $HF, K_2S_2O_8$

(D) $I_2 K_2 S_2 O_8$

CORRECT ANSWER: C

SOLUTION:

 $KIO_3 + F_2 + H_2O \
ightarrow KIO_4 + H_2F_2$

 $2KHSO_4 + F_2 \
ightarrow K_2S_2O_8 + 2HF$

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Q-43 - 11479924

 $(A) + (B) + H^{\oplus} \rightarrow Br_2$

(A) gives yellow precipitate with $AgNO_3$. (A) and (B) are

(A) Br^{Θ}, Br^{Θ}

(B) $Br^{\Theta}, BrO_3^{\Theta}$

(C) BrO^{Θ} , BrO_3^{Θ}

(D) BrO^{Θ} , BrO_4^{Θ}

CORRECT ANSWER: B

SOLUTION:

- $egin{aligned} & 3Br_2+6O^{\,\Theta}\,H\ &
 ightarrow 5Br^{\,\Theta}+BrO_3^{\,\Theta}\ & + \,3H_2O \end{aligned}$

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Q-44 - 11479927

$HCIO_4 + P_2O_5 ightarrow (A) + (B)$

(A) and (B) are

(A) $HCIO_3, H_3PO_4$

(B) CI_2O_6 , HPO_3

(C) $CIO_2H_3PO_4$

(D) CI_2O_7, HPO_3

CORRECT ANSWER: D

SOLUTION:

 $2HCIO_4 + P_2O_5$ $\rightarrow CI_2O_7 + 2HPO_3$

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Q-45 - 11479931

Which one of the following pairs of reactantas does not form

oxygen when they react with each other ?

(A) F_2 , NaOH solution (hot, conc.)

(B) F_2, H_2O

(C) CI_2 , NaOH solution (cold, dilute)

(D) $CaOCI_2, H_2SO_4$ (dilute, small amount)

CORRECT ANSWER: C

SOLUTION:

 $2F_2+2H_2O
ightarrow 4HF +O_2$

$egin{aligned} CI_2 + 2NaOH \ & ightarrow NaCI + NaCIO \ & ightarrow H_2O \end{aligned}$

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Q-46 - 11479935

Bleaching powder is a mixture of

(A) Calcium hypochlorite and calcium chloride

(B) Calcium chlorate and calcium chloride

(C) Calcium hypochlorite and basic calcium chloride

(D) Calcium chlorate and calcium hydroxide

CORRECT ANSWER: C



Q-47 - 11479944

One gas bleaches the colour of flowers by reduction and other by

oxidation. These gases are

(A) SO_2 and CI_2

(B) CO and CI_2

(C) NH_3 and SO_2

(D) H_2 and Br_2

CORRECT ANSWER: A

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Q-48 - 11479950

Which has maximum pH in aqueous solution ?

(A) NaCIO

(B) $NaCIO_2$

(C) $NaCIO_3$

(D) $NaCIO_4$

CORRECT ANSWER: A

SOLUTION: $NaOCI = H_2O$ $\rightarrow NaOH + HOCI$

Since HOCI is the weakest acid among oxacids of

chlorine, HOCI has maximum pH.

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Q-49 - 11480136

The solubility of noble gases in water shown the order

(A)He > Ar > Kr > Na > Xe

(B)

$He > Na > Ar > Kr \ > Xe$

(C)

(D) none of above

CORRECT ANSWER: C

SOLUTION:

Solubility of noble gases in water is due to dipoleinduced dipole interaction. As dipole induced dipole interaction increases with the increase of molecular mass of noble gases, hence solubility of noble gases in

water increases down the group.



Q-50 - 11480214

Boiling point and melting point of noble gases are in the order

(A) He < Ne < Ar < kr< Xe**(B)** He > Ne > Kr > Ar> Xe(C) He < Kr < Ne < Ar< xe(D) He > Kr > Ne > Ar> xe

CORRECT ANSWER: A

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Q-51 - 11480221

He is added to the oxygen supply used by sea divers because

(A) it is less soluble in blood than N_2 a high pressure

(B) it is lighter than N_2

(C) it is readly miscible with O_2

(D) it is less poisonous than N_2

CORRECT ANSWER: B

SOLUTION:

He and Rn are obtained during radioationctive decay

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Q-52 - 11480066

Which of the following compound cannot be prepared by direct

betyween the consituent element?

(A) XeF

(B) XeO_3

(C) XeF_4

(D) XeO_2F_2

CORRECT ANSWER: B,D

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Q-53 - 11480083

The inert gas present in atmosphere are

(A) He and Ne

(B) He, Ne and Ar

(C) He, Ne, Ar and KR

(D) He, Ne, Ar, Kr and Xe

CORRECT ANSWER: D



Q-54 - 12661149

The correct order of solubility in water for He, Ne, Ar, Kr, Xe,

is

(A) He > Ne > Ar > Kr > Xe(B) Ne > Ar > Kr > He > Xe(C) Xe > Kr > Ar > Ne

> He

(D)

CORRECT ANSWER: C

Solubility in decreasing order.



Q-55 - 11480083

The inert gas present in atmosphere are

(A) He and Ne

(B) He, Ne and Ar

(C) He, Ne, Ar and KR

(D) He, Ne, Ar, Kr and Xe

CORRECT ANSWER: D

Q-56 - 11480097

- Compounds formed when the noble gases get entrapped in the cavities of crystal lattices of certain oreganic and inorganic compounds are known as
 - (A) interstitial compounds
 - (B) Clathrates
 - (C) Hydrates
 - (D) Picrates

CORRECT ANSWER: B



Q-57 - 12660987

- Assertion: All clatharate compound of noble gas are the compounds in which the molecules of noble gases are trapped in cavities in te crystal lattice of other compounds.
- Reason: He and Ne having smaller size do not form clatrate compound molecules are small because are small because their ehough to escape from cavities.
 - (A) If both asseration and reson are true and the reason is the correct explanation of the asseration.
 - (B) If both asseration and reason are true ans the reason is the correct explanation of the asseration.
 - (C) If asseration is true but reason is false.

(D) If asseration is false but reason is true.

CORRECT ANSWER: A

SOLUTION:

Both facts and explanation is correct reason for

statement.



Which compound is prepared by the following reaction

 $Xe + 2F_2 \xrightarrow{Nivestel}{_{673K,5-6atm}}$ (1: 5volumeratio)

(A) XeF_2

(B) XeF_6

(C) XeF_4

(D) $XeOF_2$

CORRECT ANSWER: C



The noble gas which behaves abnormally in liquid state is

(A) Xe

(B) Ne

(C) He

(D) Ar

CORRECT ANSWER: C

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Q-60 - 18698591

Which of the following noble gas is the most polarized ?

(A) Radon

(B) Krypton

(C) Xenon

(D) Helium

CORRECT ANSWER: C

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