Redox Reactions

Question1

100 mL of aqueous solution of $0.05 M Cu^{2+}$ is added to 1 L of 0.1 M KI solution. The resultant solution was titrated with $0.01 M Na_2 S_2O_3$ solution using starch indicator till blue colour disappeared. What is the volume (in mL) of $Na_2 S_2O_3$ used?

AP EAPCET 2025 - 26th May Morning Shift

Options:

A.

2000

B.

1000

C.

500

D.

250

Answer: C

Solution:

Moles of Cu^{2+} : $n_{Cu^{2+}} = M_{Cu^{2+}} \times V_{Cu^{2+}}$

$= 0.05 \times 0.1 = 0.005$ mol

For the reaction,

$2Cu^{2+} + 4I^- \longrightarrow Cu_2I_2 + I_2$

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

2 moles of Cu^{2+} produces 1 mol of I_2

Moles of I_2 : $n_{1_2} = \frac{1}{2} \times n_{Cu^{2+}} = 0.0025$ mol

For the reaction;

$I_2 + 2Na_2\ S_2O_3 \longrightarrow 2NaI + Na_2\ S_4O_6$

1 mole I_2 react with 2 moles of $Na_2\ S_2O_3$

$n_{NaS_2S_3} = 2 \times 0.0025 = 0.005$ mol

Volume of $Na_2\ S_2O_3$: $V_{Na_2\ S_2O_3} = \frac{n_{Na_2\ S_2O_3}}{M_{Na_2\ S_2O_3}}$

$= \frac{0.005}{0.01} = 0.5$ L or 500 mL

Question2

H_2O_2 reduces $KMnO_4$ in acidic medium to ' x ' and in basic medium to ' y '. What are x and y ?

AP EAPCET 2025 - 23rd May Evening Shift

Options:

A.

$x = MnO_2, y = Mn^{2+}$

B.

$x = Mn^{2+}, y = MnO_2$

C.

$x = MnO_4^{2-}, y = Mn^{2+}$

D.

$x = MnO_2, y = MnO_4^{2-}$

Answer: B

Solution:

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

In acidic condition, $KMnO_4$ (Mn $= +7$ oxidation state) reduced by H_2O_2 to Mn^{2+}

So, $x = Mn^{2+}$

In basic condition $KMnO_4$(Mn $= +7$ oxidation state)

is reduced by H_2O_2 to $MnO_2 y = MnO_2$

Acidic $2KMnO_4 + 5H_2O_2 + 3H_2SO_4 \longrightarrow 2MnSO_4 + K_2SO_4 + 8H_2O + 5O_2$

Basic

$2KMnO_4 + 3H_2O \rightarrow 2MnO_2 + 2KOH + 2H_2O + 3O_2$

Question3

Which one of the following reactions is not feasible?

AP EAPCET 2025 - 23rd May Morning Shift

Options:

A.

$Cl_2(g) + 2KBr(aq) \longrightarrow 2KCl(g) + Br_2(l)$

B.

$Cl_2(\text{ g}) + 2KI(aq) \longrightarrow 2KCl(aq) + I_2(\text{ s})$

C.

$Br_2(l) + 2KI(aq) \longrightarrow 2KBr(aq) + I_2(\text{ s})$

D.

$I_2(\text{ s}) + 2KBr(aq) \longrightarrow 2KI(aq) + Br_2(\text{l})$

Answer: D

Solution:

Among the given reactions, the reaction

$I_2(s) + 2KBr(aq) \longrightarrow 2KI(aq) + Br_2(l)$

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

is not feasible because iodine is less reactive than bromine. In a displacement reaction, more reactive element can displace a less reactive element in compound.

Question4

Which one of the following acts as autocatalyst during titration of $KMnO_4$ and oxalic acid in presence of dilute H_2SO_4 ?

AP EAPCET 2025 - 23rd May Morning Shift

Options:

A.

H_2SO_4

B.

$KMnO_4$

C.

$H_2C_2O_4$

D.

$MnSO_4$

Answer: D

Solution:

$MnSO_4$ acts as the autocatalyst during the titration of $KMnO_4$ and oxalic acid.

An autocatalyst is the substance that is formed during a chemical reaction and then speeds up the reaction.

Question5

H_2O_2 with $KMnO_4$ in acidic medium gives a manganese compound ' X ' and in basic medium gives another manganese compound ' Y '. The oxidation state of manganese in X and Y respectively are

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

AP EAPCET 2025 - 21st May Evening Shift

Options:

A.

$+2, +4$

B.

$+4, +2$

C.

$+3, +4$

D.

$+4, +3$

Answer: A

Solution:

Oxidation state of Mn in acidic medium

$KMnO_4$ reduced to Mn^{2+}

Thus, oxidation state $= +2$

In basic medium,

$KMnO_4$ reduced to MnO_2

$0 = x + 2(-2) \Rightarrow x = +4$

Question6

The volume (in mL) of 10 volume H_2O_2 solution required to completely react with 200 mL of 0.4 M $KMnO_4$ solution in acidic medium is

AP EAPCET 2025 - 21st May Morning Shift

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

Options:

A.

112

B.

336

C.

224

D.

448

Answer: C

Solution:

Normality of $KMnO_4$ solution,

$N_{KMnO_4} = n_{\text{factor}} \quad \times M = 0.4 \times 5 = 2\text{ N}$

Normality of H_2O_2

$N_{H_2O_2} = \frac{\text{Volume strength}}{5.6} = \frac{10}{5.6}\text{ N}$

Using normality equation

$N_1V_1 = N_2V_2$
$N_{KMnO_4} \times V_{KMnO_4} = N_{H_2O_2} \times V_{H_2O_2}$
$2 \times 200 = \frac{10}{5.6} \times V_{H_2O_2}$
$V_{H_2O_2} = 224\text{ mL}$

Question7

Observe the following reactions

(i) $2KClO_3(s) \xrightarrow{\Delta} 2KCl(s) + 3O_2(g)$

(ii) $2H_2O_2(aq) \xrightarrow{\Delta} 2H_2O(l) + O_2(g)$

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

(iii) $AgNO_3(aq) + KCl(aq) \longrightarrow AgCl(s) + KNO_3(aq)$

(iv) $2Na(s) + \frac{1}{2}O_2(g) \longrightarrow Na_2O(s)$

The number of redox reactions in thsi list is

AP EAPCET 2024 - 23th May Morning Shift

Options:

A. 3

B. 4

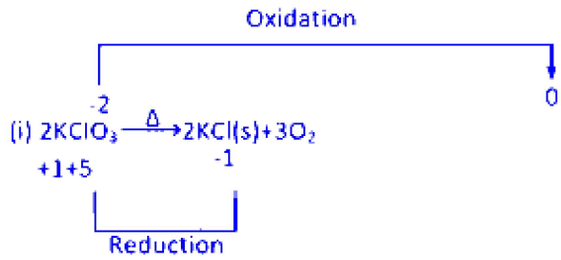
C. 2

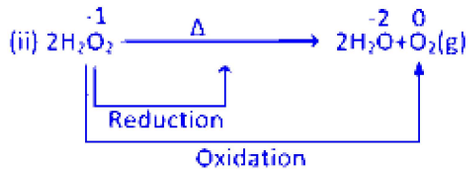
D. 1

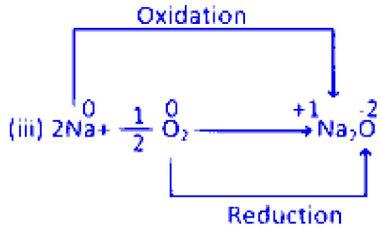
Answer: A

Solution:

The following reactions are redox reactions.







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

Reaction (iii) is a double displacement reaction.

Question8

Acidification of chromate gives ' Z '. The oxidation state of chromium in ' Z ' is

AP EAPCET 2024 - 23th May Morning Shift

Options:

A. +3

B. +6

C. +7

D. +2

Answer: B

Solution:

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

The process of acidifying chromate involves the following reaction:

$2Na_2CrO_4 + H_2SO_4 \rightarrow Na_2Cr_2O_7 + H_2O + Na_2O_4$

This can be simplified to:

$CrO_4^{2-} \xrightarrow{H^+} Cr_2O_7^{2-}$

In this reaction, chromate ions (CrO_4^{2-}) are converted into dichromate ions ($Cr_2O_7^{2-}$).

In the compound $Na_2Cr_2O_7$, sodium (Na) is in the +1 oxidation state and oxygen (O) is in the -2 oxidation state. To find the oxidation state of chromium (Cr) in $Cr_2O_7^{2-}$, we analyze the overall charge balance:

Total charge contributed by two sodium atoms: $2 \times (+1) = +2$.

Each oxygen atom contributes a -2 charge, and there are 7 oxygen atoms: $7 \times (-2) = -14$.

The net charge on the ion $Cr_2O_7^{2-}$ is -2.

Setting up the equation for chromium:

$2 + 2x - 14 = 0$

Solving for x gives:

$2x = 12x = +6$

Thus, the oxidation state of chromium in $Na_2Cr_2O_7$ is +6.

Question9

100 mL of $0.1MFe^{2+}$ solution was titrated with $\frac{1}{60}$M $Cr_2O_7^{2-}$ solution in acid medium. What is the volume (in L) of $Cr_2O_7^{2-}$ solution consumed ?

AP EAPCET 2024 - 22th May Evening Shift

Options:

A. 100

B. 10

C. 1

D. 0.1

Answer: D

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

Solution:

Given, 100 mL of $0.1 M Fe^{2+}$ titrated with $\frac{1}{60} M Cr_2O_7^{2-}$ solution.

The complete reaction is,

$$\underset{\text{n-factor}}{6Fe^{2+}} + \overset{(\cdot 6)}{\underset{6}{Cr_2O_7^{2-}}} \xrightarrow{14H^+} 6Fe^{3+} + Cr^{3+} + 7H_2O$$

$$\Rightarrow \quad 0.1 M \quad \frac{1}{60} M = 0.1 \text{ N} = \frac{1}{10} \text{ N} [\because N = M \times n\text{-factor}]$$

$$\Rightarrow \quad V \text{ mL} \quad 100 \text{ mL} \qquad (say)$$

$$\Rightarrow \quad V = \frac{1}{0.1} \times \left(100 \times \frac{1}{10}\right) = 100 \text{ mL}$$

So, $V = 0.1$ L

Question10

Which of the following reactions of $KMnO_4$ occurs in acidic medium ?

AP EAPCET 2024 - 22th May Evening Shift

Options:

A. Oxidation of thiosulphate to sulphate

B. Precipitation of sulphur from H_2S

C. Oxidation of iodide to iodate

D. Oxidation of manganous salt to MnO_2

Answer: B

Solution:

When hydrogen sulfide (H_2S) is passed through acidic potassium permanganate ($KMnO_4$), sulfur is produced.

The balanced chemical equation for this reaction is:

$KMnO_4 + H_2S + H_2SO_4 \rightarrow H_2O + K_2SO_4 + MnSO_4 + S$

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

In this reaction, $KMnO_4$ acts as an oxidizing agent, converting H_2S into sulfur (S).

Question11

Which of the following occurs with $KMnO_4$ in neutral medium?

AP EAPCET 2024 - 21th May Evening Shift

Options:

A. Oxidation of oxalate ion

B. Precipitation of sulphur from hydrogen sulphide

C. Oxidation of Fe^{2+} to Fe^{3+}

D. Oxidation of iodide to iodate

Answer: D

Solution:

In a neutral medium, the permanganate ion oxidizes iodine to form iodate. Here's the reaction illustrating this process:

$$KMnO_4 \rightleftharpoons MnO_4^- + K^+$$
$$2MnO_4^- + H_2O + I^- \longrightarrow$$
$$2MnO_2 + 2OH^- + IO_3^-$$

This reaction shows how permanganate ions in a neutral solution can facilitate the conversion of iodide ions to iodate ions, with manganese dioxide and hydroxide ions as additional products.

Question12

In the reaction of sulphur with concentrated sulphuric acid, the oxidised product is X and reduced product is Y, X and Y are respectively.

AP EAPCET 2024 - 21th May Morning Shift

Options:

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

A. SO_3, SO_2

B. SO_2, SO_2

C. SO_2, H_2S

D. SO_2, H_2O

Answer: B

Solution:

The complete reaction is as follows,

(a) $S + 2H_2SO_4 \longrightarrow 3SO_2 + 2H_2O$

Here, sulphur (S) is oxidised to SO_2

H_2SO_4 is reduced to SO_2.

Hence, both X and Y are SO_2.

Question13

Given below are two statements.

Statement I : In the decomposition of potassium chlorate Cl is reduced.

Statement II : Reaction of Na with O_2 to form Na_2O is a redox reaction.

The correct answer is

AP EAPCET 2024 - 20th May Morning Shift

Options:

A. Both statements I and II are correct.

B. Both statements I and II are not correct.

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

C. Statement I is correct but statement II is not correct.

D. Statement I is not correct but statement II is correct.

Answer: A

Solution:

Let's analyze each statement step by step:

For Statement I (Decomposition of potassium chlorate):

Consider the reaction:

$2KClO_3 \rightarrow 2KCl + 3O_2$

In potassium chlorate ($KClO_3$), let's determine the oxidation state of chlorine.

For $KClO_3$, potassium (K) has an oxidation number of +1 and oxygen (O) is typically -2. Setting chlorine's oxidation number as x:

$+1 + x + 3(-2) = 0 \quad \Rightarrow \quad x = +5$

In potassium chloride (KCl), K is +1 and Cl must be -1 (to balance the compound).

Since chlorine goes from +5 to -1, it has gained electrons. This is a reduction. So Statement I is correct.

For Statement II (Reaction of sodium with oxygen to form Na_2O):

Consider the reaction:

$4Na + O_2 \rightarrow 2Na_2O$

Sodium (Na) starts with an oxidation state of 0 and in Na_2O, sodium is +1.

Oxygen (O_2) starts with 0 and in Na_2O, it is -2.

With sodium being oxidized (gain in oxidation number) and oxygen being reduced (loss in oxidation number), this clearly is a redox reaction. So Statement II is correct.

Since both statements are correct, the correct option is:

Option A

Both statements I and II are correct.

Question14

In neutral medium potassium permanganate oxidises I^- to X.. Identify the X.

AP EAPCET 2024 - 19th May Evening Shift

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

Options:

A. Iodine

B. Iodate

C. Per iodate

D. Hypo iodite

Answer: B

Solution:

In a neutral medium, potassium permanganate oxidizes I^- to IO_3^- (iodate). The balanced chemical reaction for this process is as follows:

$2KMnO_4 + H_2O + KI \longrightarrow 2MnO_2 + 2KOH + KIO_3$

In this reaction, the permanganate ion acts as an oxidizing agent, facilitating the conversion of iodide ions into iodate ions.

Question15

What are the oxidation numbers of S atoms in $S_4O_6^{2-}$?

AP EAPCET 2022 - 5th July Morning Shift

Options:

A. $6, -1, -1, 6$

B. $5, 0, 0, 5$

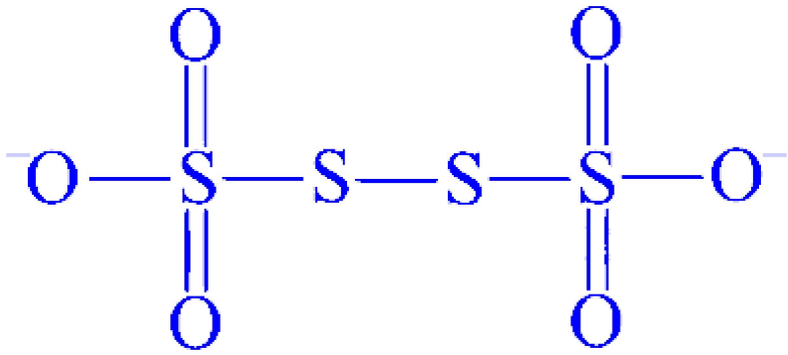
C. $2.5, 2.5, 2.5, 2.5$

D. $7, -2, -2, 7$

Answer: B

Solution:

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



When an atom is bonded to similar atoms, has zero oxidation state.

$\therefore$ Two middle sulphur atoms have zero oxidation state.

For other two sulphur atoms.

$$\begin{aligned} 2x + 6 \times (-2) &= -2 \\ 2x - 12 &= -2 \\ 2x &= -2 + 12 \\ 2x &= +10 \\ x &= +5 \end{aligned}$$

$\therefore$ The oxidation number on S-atoms in $S_4O_6^{2-}$ is $+5, 0, 0 + 5$.

Question16

How many grams of Mg is required to completely reduce $100\ \text{mL}, 0.1\ \text{M}\ NO_3^-$ solution using the following reaction?

$$NO_3^- + Mg \longrightarrow Mg^{2+} + NH_3$$

AP EAPCET 2022 - 4th July Evening Shift

Options:

A. 0.96

B. 0.62

C. 0.24

D. 0.75

Answer: A

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

Solution:

$Mg + NO_3^- \longrightarrow Mg^{2+} + NH_3$

The complete balanced equation of the given reaction is

$4Mg + NO_3^- + 9H^{\oplus} \longrightarrow 4Mg^{2+} + NH_3 + 3H_2O$

Given, conc. of $NO_3^- = 0.1$ M

Volume of $NO_3^- = 100$ mL

We know that,

$$\text{Molarity} = \frac{\text{Number of moles}}{\text{Volume of solution (in L)}}$$

Hence, number of moles = molarity × volume of solution (in L)

$$\begin{aligned}\text{So, number of moles} &= 0.1 \times 100 \times 10^{-3} \\ &= 10 \text{ m mol} \\ &= 10^{-2} \text{ mol}\end{aligned}$$

From above Eq.,1 mole NO_3^- reacts with 4 moles Mg. So, 10^{-2} mole NO_3^- reacts with 4×10^{-2} moles Mg. Now, to calculate the mass of Mg required, use the formula,

$$\text{Number of moles} = \frac{\text{Given mass}}{\text{Molar mass}}$$

Molar mass of Mg $= 24$ g mol^{-1}

On substituting the value,

$$4 \times 10^{-2} = \frac{\text{Mass of Mg}}{24}$$

We will get,

Mass of Mg $= 24 \times 4 \times 10^{-2}$

Mass of Mg $= 0.96$ g

Question17

What is the oxidation state of S in the sulphur containing product of the following reaction?

$$SO_3^{2-}(aq) + Br_2(l) + H_2O \longrightarrow$$

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

Options:

A. +6

B. +4

C. +2.5

D. +2

Answer: A

Solution:

The given reaction is:

$SO_3^{2-}(aq) + Br_2(l) + H_2O(l) \rightarrow SO_4^{2-}(aq) + 2Br^-(aq) + 2H^+$

To determine the oxidation state of sulfur (S) in the product, we first identify that the sulfur-containing product is SO_4^{2-} (sulfate ion). Let's denote the oxidation state of sulfur as x.

For the sulfate ion SO_4^{2-}:

- Each oxygen (O) atom has an oxidation state of -2.
- There are four oxygen atoms, contributing a total of $4 \times (-2) = -8$.

The net charge on the sulfate ion is -2. Using these data, we set up the following equation to solve for x:

$x + 4(-2) = -2$

Simplifying this:

$x - 8 = -2$

Solving for x:

$x = -2 + 8$

$x = +6$

Therefore, the oxidation state of sulfur in the sulfate ion SO_4^{2-} is $+6$.

Question18

In the reaction of phosphorus with conc. HNO_3, the oxidised and reduced products respectively are

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

AP EAPCET 2022 - 4th July Evening Shift

Options:

A. H_3PO_4, NO_2

B. H_3PO_2, NO

C. $H_3PO_3,\ N_2O$

D. HPO_3, NO

Answer: A

Solution:

Phosphorus reacts with HNO_3 to give H_3PO_4 and NO_2. In this reaction, phosphorus is oxidised to H_3PO_4 and also N is reduced to NO_2.The reaction is

$P + 5HNO_3 \longrightarrow H_3PO_4 + 5NO_2 + H_2O$

Question19

What are the oxidation states of three Br atoms in Br_3O_8 molecule?

AP EAPCET 2022 - 4th July Morning Shift

Options:

A. $+5, +6, +5$

B. $+6, +4, +6$

C. $+7, +2, +7$

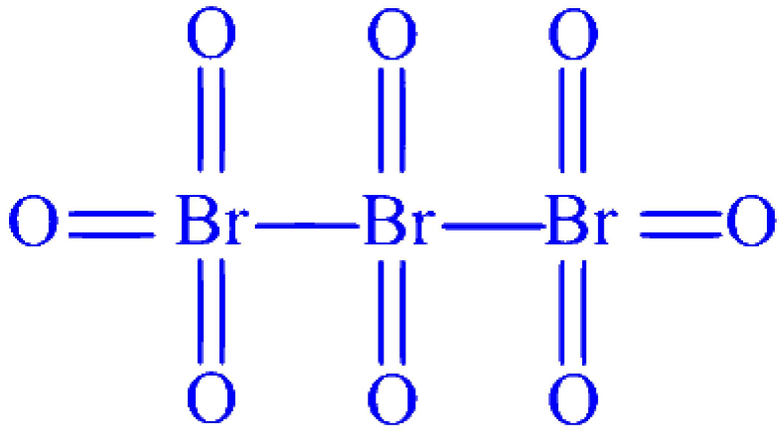
D. $+6 + 3, +7$

Answer: B

Solution:

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

Structure of Br_3O_8 is



Each terminal Br has three oxygen atoms attached to it. So, the oxidation state of Br -atom on terminals is +6 .

The bromine atom in the middle has two oxygen atoms attached to it. So, the oxidation state of Br atom in middle is +4.

Hence, the oxidation states of three Br -atoms in Br_3O_8 molecule are $+6, +4, +6$.

Question20

Which of the following statement is incorrect?

AP EAPCET 2021 - 20th August Morning Shift

Options:

A. T^{3+} salts are oxidising agents.

B. Ga^{+} salts are reducing agents.

C. Pb^{4+} salts are better oxidising agents.

D. As^{+5} salts are better oxidising agents.

Answer: D

Solution:

(a) Tl is more stable in +1 oxidation state, then +3 oxidation state, therefore Tl^{3+} salts are oxidising agents.

(b) $Ga^{+} - 2e^{-} \rightarrow Ga^{3+}$ (More stable)

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

$\therefore$ Ga^+ is a reducing agent.

(c) $Pb^{4+} + 2e^- \rightarrow Pb^{2+}$ (More stable)

Pb^{4+} is an oxidising agent.

(d) $As^{5+} + 2e^- \rightarrow As^{3+}$ (Less stable)

Thus, As^{5+} cannot be reduced so as^{5+} salts are not a good oxidising agent. An oxidising agent is defined as substance whoseoxidation number decreases while reducing agentdefined as substance whose oxidation numberincreases.

Question21

Which among the following species does not show disproportionation reaction?

AP EAPCET 2021 - 20th August Morning Shift

Options:

A. ClO^-

B. ClO_2^-

C. ClO_3^-

D. ClO_4^-

Answer: D

Solution:

Disproportionation is a specific type of redoxreaction in which a species is simultaneouslyreduced and oxidised to form two differentproducts.

Electronic configuration of Cl is $1s^2\ 2s^2\ 2p^2\ 3s^2\ 3p^6\ 4s^1$. It can exhibit maximum oxidation state of +7.

All species can exhibit disproportionation reactionwhich simultaneously oxidise as well as reduce.

In ClO_4^-, Cl cannot undergo oxidation as +7 is maximum oxidation state exhibited by chlorine.

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

Question22

For the redox reaction

$$MnO_4^- + C_2O_4^{2-} + H^+ \longrightarrow Mn^{2+} + CO_2 + H_2O,$$

the correct coefficients of the reactants for the balanced reaction are respectively

AP EAPCET 2021 - 19th August Evening Shift

Options:

A. $2, 5, 16$

B. $16, 3, 12$

C. $15, 16, 12$

D. $2, 16, 5$

Answer: A

Solution:

The unbalanced redox reaction is

$$MnO_4^- + C_2O_4^{2-} + H^+ \longrightarrow Mn^{2+} + CO_2 + H_2O$$

(i) Balanced C atoms

$$\overset{+7}{Mn}O_4^- + C_2O_4^{2-} + H^+ \longrightarrow Mn^{2+} + 2CO_2 + H_2O$$

Oxidation state of Mn decreases from +7 to +2 .

To balance the increase or decrease in oxidation number, multiply Mn containing species with 2 and C containing species with 5 .

$$2MnO_4^- + 5C_2O_4^{2-} \rightarrow 2Mn^{2+} + 10CO_2$$

(ii) Balance 'O' atoms by adding 8 water molecules to the product side.

$$2MnO_4^- + 5C_2O_4^{2-} \rightarrow 2Mn^{2+} + 10CO_2 + 8H_2O$$

(iii) Balance 'H' atoms by adding $16H^+$ ions to the reactant side.

$$2MnO_4^- + 5C_2O_4^{2-} + 16H^+ \rightarrow \\ 2Mn^{2+} + 10CO_2 + 8H_2O$$

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

Hence, $MnO_4^- \Rightarrow 2, C_2O_4^{2-} \Rightarrow 5; H^+ = 16$

Question23

Assertion (A) The colour of old lead paintings can be restored by washing them with a dilute solution of H_2O_2.

Reason (R) Hydrogen peroxide reduces PbS to Pb.

AP EAPCET 2021 - 19th August Evening Shift

Options:

A. Both A and R are true and R is a correct explanation for A.

B. Both A and R are true but R is not a correct explanation for A.

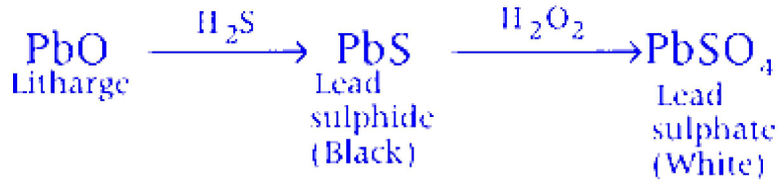
C. A is true but R is false.

D. A is false but R is true.

Answer: C

Solution:

When the old oil painting are kept in theatmosphere for a longer time the tracer of gaspresent in atmosphere converts lead oxide (PbO)into PbS which is black in colour.



Therefore, these paintings get transhed. It can berestored by keeping then in H_2O_2 solution forsometime as a result of which lead sulphide isoxidised to lead sulphate.

So, A is true but R is false.

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

Question24

Which among the following species acts as aself-indicator?

AP EAPCET 2021 - 19th August Morning Shift

Options:

A. H_2O_2

B. I^-

C. $Cr_2O_7^{2-}$

D. MnO_4^-

Answer: D

Solution:

$$KMnO_4 \longrightarrow K^+ + \underset{(+7)}{MnO_4^-}$$

In presence of a reducing agent, MnO_4^- acts as a self-indicator its and end point is pink to colourless. This is because in MnO_4^-, Mn is in +7 oxidation state and is in highest oxidation state. Thus, will tends to get reduced and easily takes electrons and being a charge transfer (CT) complex, showsintense colour.

After titration, it is MnO_2 in +4 state and has noelectronic charge transfer, therefore colourless.

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