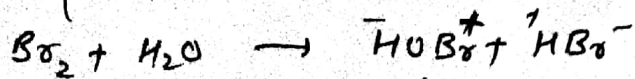
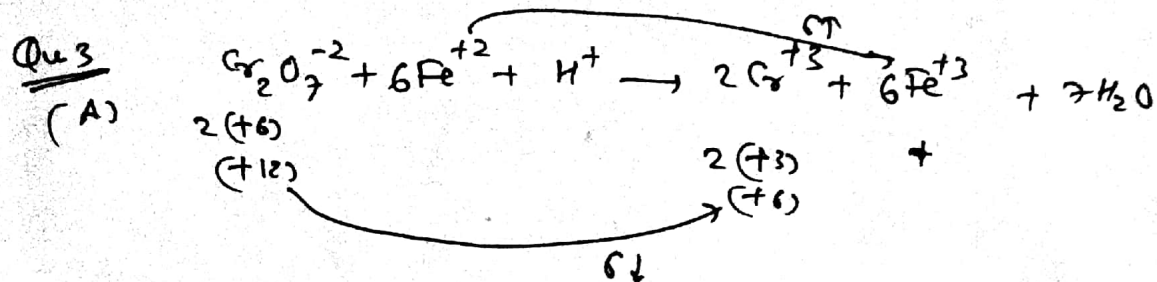


Ques (i) $\text{Zn} + \text{H}_2\text{SO}_4$



Ques 2 (13) ਤਮ ਥਾਂਤ ਸੀਓ H_2SO_4 ਅਣਿ ਪ੍ਰਕ੍ਰਿਤਿ, ਤਹਿਨਿ H⁺ ਲਾਪਸਨਿ ਲਾਇਨਿ.
 SO_4^{2-} ਕੇ ਰੀਤਤਲਾਗ ਬਖ਼ਲ SO_2 ਨਾਮੁ ਅਪੁ ਜਾਇ.

Qu 3



1 mol $\text{Cr}_2\text{O}_7^{2-}$ सँग 6 mol Fe^{+2} अगतिवाम।

0.01mole $\times 10^3$ —————> 9

$$= \frac{0.01 \times 6}{1} = 0.06 \text{ mol FeSO}_4$$

Ques 4 (B) $2\text{Na}_2\text{S}_2\text{O}_3 + \text{I}_2 \rightarrow \text{Na}_2\text{S}_4\text{O}_6 + 2\text{NaI}$ सिद्ध

$\text{Na}_2\text{S}_2\text{O}_3$ ની સિદ્ધાંત મ છે.

$$\left(\frac{M_1 v_1}{n_1} \right) N a_2 S_2 O_3 = \left(\frac{M_2 v_2}{n_2} \right) I_2$$

$$m_1 \times \frac{25}{2} = \frac{1}{100} \times \frac{12.5}{1}$$

$$\therefore M_1 = 0.01M \quad N_2SO_3 \cdot xH_2O \quad \text{Zinc}$$
$$N_2S_2O_3 \cdot xH_2O \text{ in } 100 \text{ g}$$

$$M = \frac{Na_2S_2O_3 \cdot xH_2O \text{ சிறித அளவு}}{\text{சிறித அளவு} \times \text{சிறித காரணி}}$$

$$0.01 = \frac{2.48}{[258 + 18(x)] \times 1}$$

$$2.48 = 0.01(158 + 18x)$$

$$\frac{248}{0.01} = 158 + 18x$$

$$248 = 158 + 18x$$

$$18x = 248 - 158$$

$$18x = 90$$

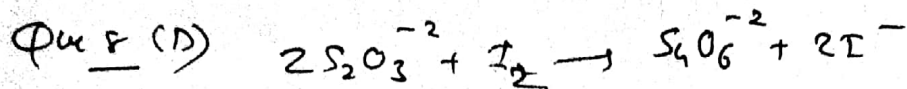
$$x = \frac{90}{18}$$

Ques 5 (D) $\left(\frac{M_1 V_1}{n_1}\right) K_2Cr_2O_7 = \left(\frac{M_2 V_2}{n_2}\right) FeSO_4$

$$0.125 \times \frac{V_1}{1} = \frac{0.25 \times 25.0}{6}$$

$$\therefore V_1 = \frac{0.25 \times 25}{0.125 \times 6} = 8.33 \text{ ml}$$

Ques 6 (A) Ques 7 (C) ~~Ques 8 (D)~~



$$\frac{M_1 \times 10}{2} = \frac{1}{50} \times \frac{25}{1} = 0.1M$$

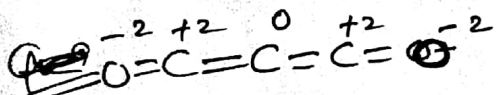
OR $\frac{M_1 V_1}{n_1} = \frac{M_2 V_2}{n_2} \quad \left(\frac{M_1 V_1}{n_1}\right) Na_2S_2O_3 \cdot 5H_2O = \left(\frac{M_2 V_2}{n_2}\right) I_2$

$$\frac{1 \times 25}{2} = \frac{M_2 \times 10}{1}$$

$$\frac{M_1 \times 10}{2} = \frac{1}{50} \times 25$$

$$M_2 = \frac{1 \times 25}{4 \times 10} =$$

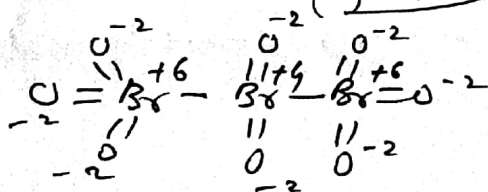
$$M_1 = \frac{1 \times 25 \times 2}{50 \times 10} = 0.1M$$



$$(2, 0, 2) \text{ B.N.}$$

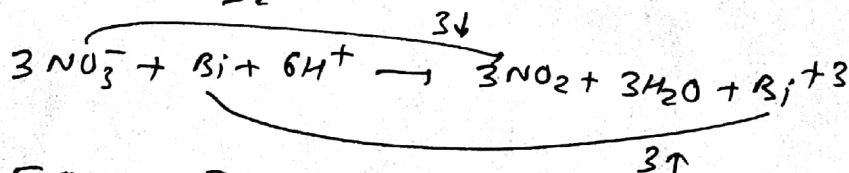
Ques 9 (A)

Ques 10 (B)



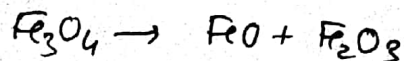
$$(6, 4, 6)$$

Ques 11 (B)



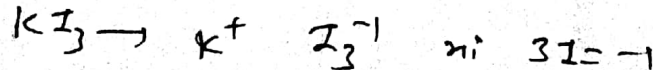
Ques 12

(A)



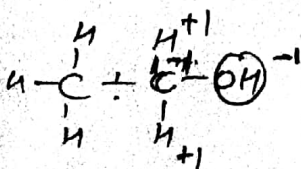
Fe in Fe^{+2} and Fe^{+3} in Fe_2O_3

Ques 13 (B)



$$I = -\frac{1}{3} \text{ B.N.}$$

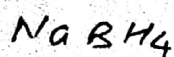
Ques 14 (D)



C.N. = 1 B.N.

Ques 15

(C)



$$1(Na) + 1(B) + 4(H) = 0$$

$$+1 + B + 4(-1) = 0$$

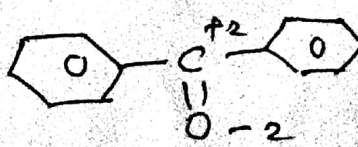
$$+1 + B - 4 = 0$$

$$B - 3 = 0$$

$$B = +3$$

Ques 16

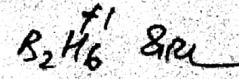
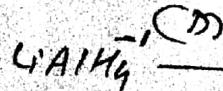
(B)



$$+2 \text{ B.N.}$$

Ques 17

$$[H]$$



Ques 18 (C) Ques 19 (A) NaClO_4 ni c/nī zhi. zhit +7 ē.
 cō nē ē gūnī ~~gūnī~~ zūfī nīl

Ques 20 (A) Ques 21 (C) F zhi. nīhō gūnī nīl.

Ques 22 (A) Ques 23 (D) Ques 24 (D) Ques 25 (A)
 $\text{SO}_2 \xrightarrow{+4} \text{SO}_3 \xrightarrow{+6}$

Ques 26 (C) kīzāz kmmōhni m/nī zhi. zhit +7 ē. zūnī cō nēz
 zūfīzūfī nīl nīl zūfī nīl nīl zūfī nīl.

Ques 27 (C) Ques 28 (C) $2\text{HClO} + 3\text{H}_2\text{O} \rightarrow 2\text{HCl} + 2\text{HClO}_3$
 fōfōzūfī ē.

Ques 29 (C) [C] Ques 30 (B) $\text{HNO}_3 / +5, \text{NO} / +2, \text{N}_2 / 0, \text{NH}_4\text{Cl} / -3$

Ques 31 (C) $2\text{MnO}_4^- + 5\text{C}_2\text{O}_4^{2-} + 16\text{H}^+ \rightarrow 2\text{Mn}^{+2} + 10\text{CO}_2 + 8\text{H}_2\text{O}$
 $\underline{x} \quad \underline{y} \quad \underline{z}$

Ques 32 (D) $3\text{Cu} + 8\text{HNO}_3 \rightarrow 3\text{Cu}(\text{NO}_3)_2 + \text{NO} + \text{NO}_2 + 4\text{H}_2\text{O}$

Ques 33 (B) $\text{H}_2\text{O}_2 \rightarrow \text{H}_2\text{O} + \frac{1}{2}\text{O}_2$
 $\xrightarrow{\text{Red}} -1 \xrightarrow{\text{Oxi}} -2 \quad \quad \quad 0 \xrightarrow{\text{Oxi}} +1$

Ques 34 (C) $2\text{KMnO}_4 + 5\text{H}_2\text{O}_2 \rightarrow 2\text{Mn}^{+2} + 5\text{O}_2$
 $\xrightarrow{\text{Red}} +7 \xrightarrow{\text{Oxi}} +2 \quad \quad \quad 0 \xrightarrow{\text{Oxi}} +1$

Ques 35 (A) $\text{S}_2\text{O}_4^{2-} < \text{SO}_3^{2-} < \text{S}_2\text{O}_6^{2-}$
 $+3 \quad \quad \quad +4 \quad \quad \quad +5$

Ques 36 (B) $\text{V}(\text{BrO}_2)_2 \xrightarrow{+2} \text{V}(\text{O})_2\text{Br}^{+3} \xrightarrow{+2} \text{V}(\text{O})_2\text{Br}^{+5}$
 $\text{BrO}_2^- \text{ ni } \text{Br}^{+3} \text{ ni } \text{V}^{+2} \text{ zūnī}$

Ques 37 (15 m) 0.05M SeO_2 (Se^{+4}) ē.

(B) $M = \frac{\text{molar mass}}{\text{valence}}$
 $0.05 = \frac{\text{molar mass}}{15/1000}$
 $\text{Se}^{+4} \text{ molar mass} = 7.5 \times 10^{-4} \text{ mole ē.}$
 $30.6 \text{ ml } 0.1 \text{ M } \text{Cr}^{+2} (\text{CrSO}_4) \text{ ni ē.}$
 $M = \frac{\text{molar mass}}{\text{valence}} \Rightarrow 0.1 = \frac{\text{molar mass}}{30.6/1000}$
 $\text{molar mass} = 3.06 \times 10^{-3} \text{ molar mass}$

$\text{Cr}^{+2} \rightarrow \text{Cr}^{+3} + e^- \quad \text{--- (1)}$
 $\text{Se}^{+4} + ne^- \rightarrow \text{Se}^{(4-n)+} \quad \text{--- (2)}$
 zūnī (1) nī cō nēz nīl, (2) nī cō nēz nīl zūnī zūnī.
 $n \text{Cr}^{+2} + \text{Se}^{+4} \rightarrow 4\text{Cr}^{+2} + \text{Se}^{(4-n)+}$

ද්විතීයික

1 mol Ce^{+2} 1 mol Se^{+4} ග් අන්තර් කිරීම.

3.06×10^{-3} mol Ce^{+2} ස්කන්ධ 1 mol Se^{+4} ග් අන්තර් කිරීම.

$$= \frac{1}{n} \times 3.06 \times 10^{-3} \text{ mol}$$

420g Se^{+4} හි ස්කන්ධ 7.5×10^{-4} mol ග් වැටේ.

$$\frac{1}{n} \times 3.06 \times 10^{-3} = 7.5 \times 10^{-4}$$

$$n = \frac{3.06 \times 10^{-3}}{7.5 \times 10^{-4}} = 4$$

අන්තර් කිරීමේ 4 e^- ග් අත්පත් කර ගත් බැවින් Se^{+4} හි පරිණාමය $\boxed{\text{Se}^0}$ වේ.

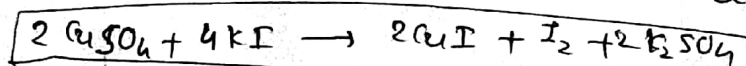
Ques 38 (D)

Ques 39 (C) $\text{Ag} > \text{Hg} > \text{Cu}$

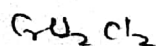
අඩු අන්තර් කිරීමේ ශක්තියක් ඇති බැවින් අන්තර් කිරීමේ ශක්තිය අඩු වේ.

Ques 40 (A)

Ques 41 (B)



Ques 42 (A)



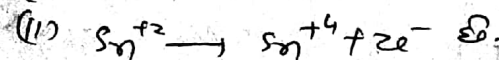
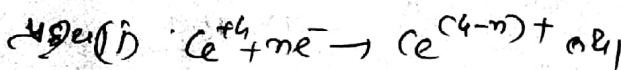
$$x + 2(-2) + 2(-1) = 0$$

$$\therefore x + 2(-2) + 2(-1) = 0$$

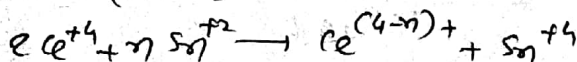
$$\therefore x - 6$$

$$= \boxed{x = +6}$$

Ques 43 (C)



අතීත (1) හි 2 අයුරු වේ (ii) හි 2 අයුරු වේ.



$$\text{Ce}^{+4} \text{ ග් mol} = \text{Mx factor}$$

$$= \frac{1}{1000} \times 40.05$$

$$= 40.05 \times 10^{-3} \text{ mol}$$

$$\therefore 2 \text{ mol } \text{Ce}^{+4} \text{ හි අන්තර් කිරීමේ ශක්තිය} = n \text{ mol } \text{Sn}^{+2}$$

$$\therefore 40.05 \times 10^{-3} \text{ mol } \text{Ce}^{+4} = ?$$

$$= \frac{n}{2} \times 40.05 \times 10^{-3}$$

$$= 20.02n \times 10^{-3} \text{ mol}$$

$$\text{Sn}^{+2} \text{ ග් mol} = \text{Mx factor}$$

$$= \frac{1}{1000} \times 20.0 = 20.0 \times 10^{-3} \text{ mol}$$

$$20.02n \times 10^{-3} \text{ mol} = 20.0 \times 10^{-3} \text{ mol}$$

$$n = \frac{20 \times 10^{-3}}{20 \times 10^{-3}}$$

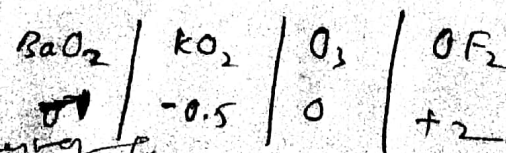
$$\boxed{n = 1}$$

එබැවින් $n=1$ බැවින් අන්තර් කිරීමේ ශක්තිය 1 වේ.

Ce^{+4} හි පරිණාමය Ce^{+3} වේ.

Ques 44 (C)

Ques 45 (B)



— Butyl Luer