

YAKEEN NEET 2.0

2026

Redox Reaction

MPQ Solution - 02

Physical Chemistry

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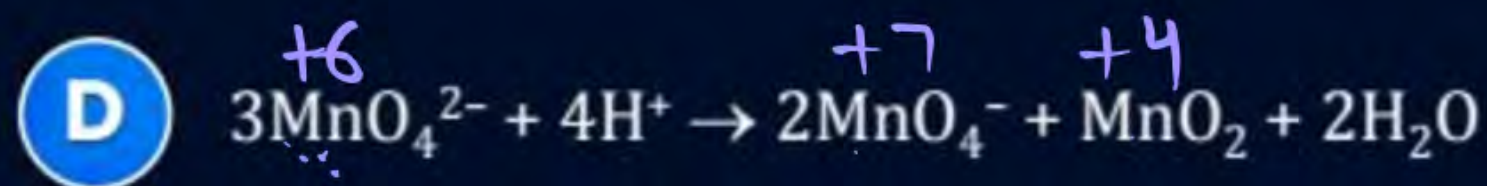
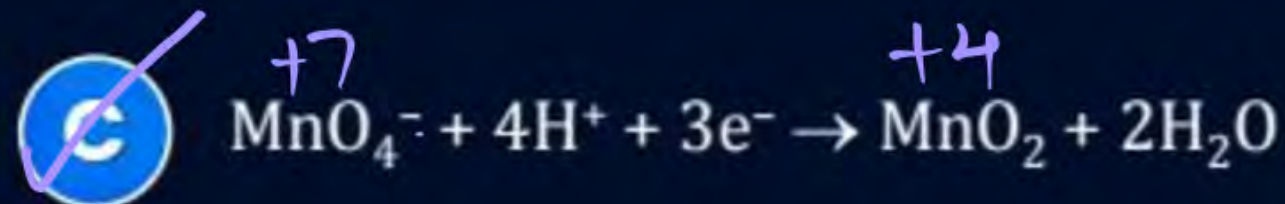
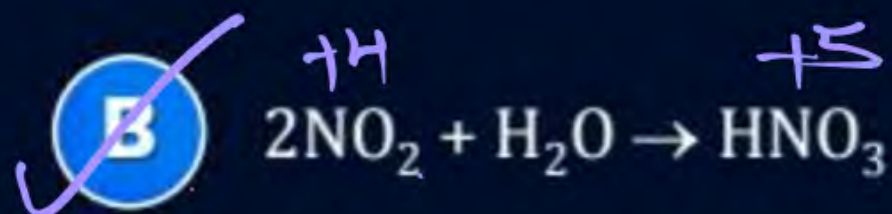
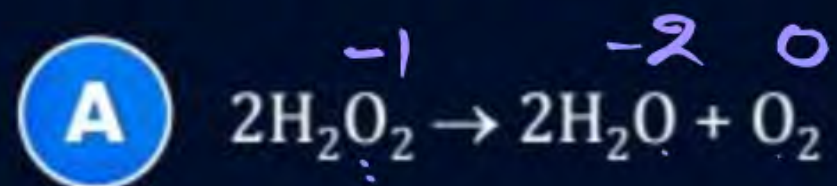
QUESTION – (26th June 2nd Shift 2022)

Which one of the following is an example of disproportionation reaction?

- ✓ **A** $3\overset{+6}{\text{MnO}_4^{2-}} + 4\text{H}^+ \rightarrow 2\overset{+7}{\text{MnO}_4^-} + \overset{+4}{\text{MnO}_2} + 2\text{H}_2\text{O}$
- B** $\text{MnO}_4^- + 4\text{H}^+ + 4\text{e}^- \rightarrow \overset{+4}{\text{MnO}_2} + 2\text{H}_2\text{O}$
- C** $10\overset{-1}{\text{I}^-} + 2\overset{+7}{\text{MnO}_4^-} + 16\text{H}^+ \rightarrow 2\text{Mn}^{2+} + 8\text{H}_2\text{O} + 5\overset{0}{\text{I}_2}$
- D** $8\overset{+7}{\text{MnO}_4^-} + \underline{\underline{3\overset{+2}{\text{S}_2\text{O}_3^{2-}}}} + \text{H}_2\text{O} \rightarrow 8\overset{+4}{\text{MnO}_2} + \underline{\underline{6\overset{+6}{\text{SO}_4^{2-}}}} + 20\text{H}^-$

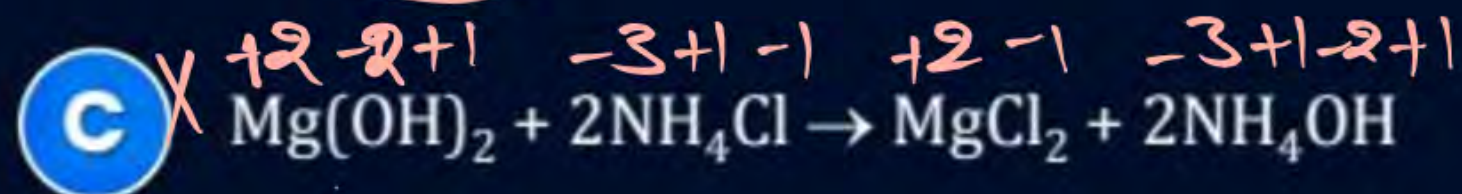
QUESTION – (26th July 1st Shift 2022)

Which of the given reactions is not an example of disproportionation reaction?



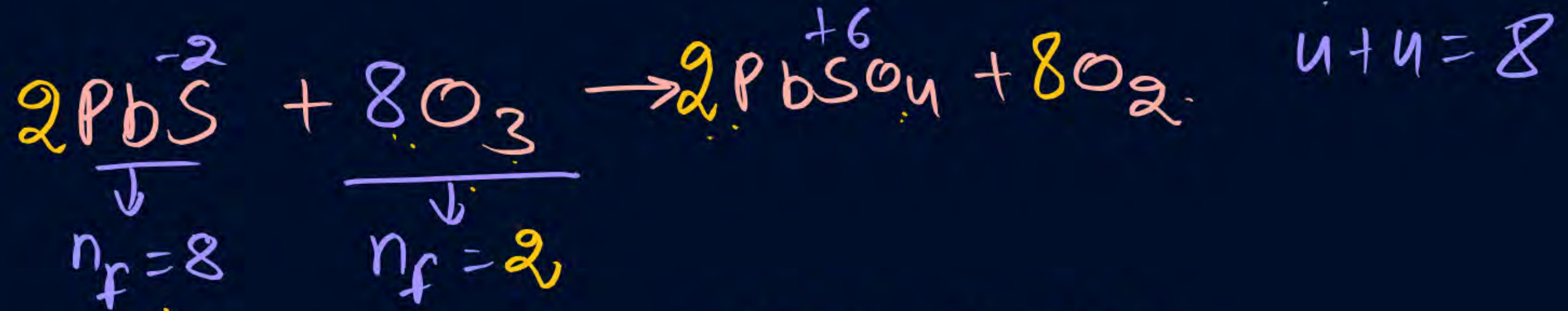
QUESTION – (2002)

Which of the following is a redox reaction?

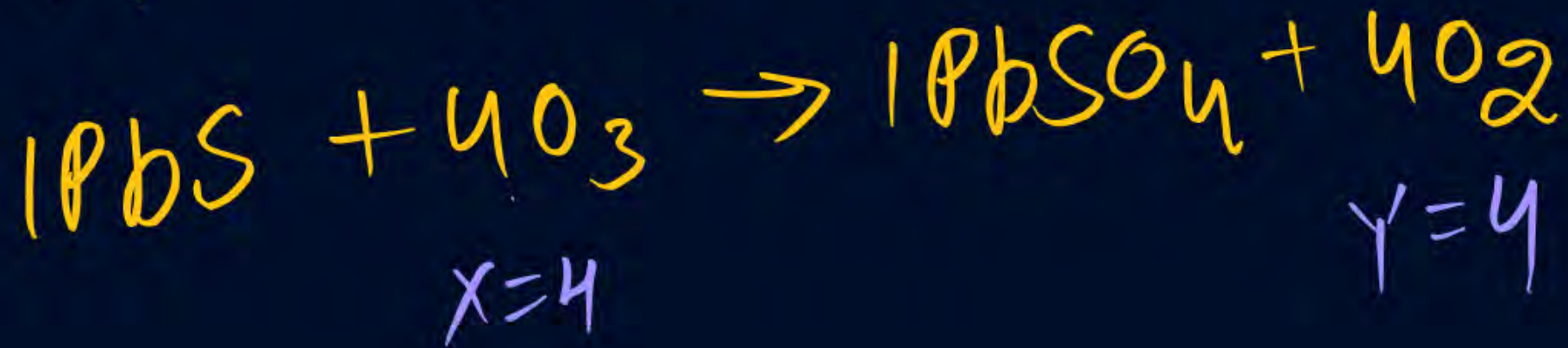


QUESTION – (NCERT: PL-239 | NV, JEE Main Jan. 27, 2024 (II))

1 mole of PbS is oxidized by "X" moles of O_3 to ^{give} "Y" moles of O_2 . $X + Y =$



$$4 + 4 = 8$$



QUESTION – (NCERT: PL-242, 243 | JEE Main April 6, 2024 (II))

Match List-I with List-II

List-I (Reaction)		List-II (Type of Redox reaction)	
A.	$\text{N}_2(\text{g}) + \text{O}_2(\text{g}) \rightarrow 2\text{NO}(\text{g})$ <i>A → IV</i>	(I)	Decomposition
B.	$2\text{Pb}(\text{NO}_3)_2(\text{s}) \rightarrow 2\text{PbO}(\text{s}) + 4\text{NO}_2(\text{g}) + \text{O}_2(\text{g})$ <i>B - I</i>	(II)	Displacement
C.	$2\text{Na}(\text{s}) + 2\text{H}_2\text{O}(\text{l}) \rightarrow 2\text{NaOH}(\text{aq.}) + \text{H}_2(\text{g})$ <i>C - II</i>	(III)	Disproportionation
D.	$2\text{NO}_2(\text{g}) + 2\text{OH}^-(\text{aq.}) \rightarrow \text{NO}_2^-(\text{aq.}) + \text{NO}_3^-(\text{aq.}) + \text{H}_2\text{O}(\text{l})$ <i>D - III</i>	(IV)	combination

Choose the correct answer from the options give below:

- A** (A)-(I), (B)-(II), (C)-(III), (D)-(IV)

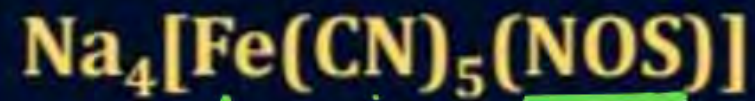
B (A)-(III), (B)-(II), (C)-(I), (D)-(IV)

C (A)-(II), (B)-(III), (C)-(IV), (D)-(I)

D (A)-(IV), (B)-(I), (C)-(II), (D)-(III)

QUESTION – (NCERT: PL-239 | NV, JEE Main Sep. 02, 2020 (I))

The oxidation states of iron atom in compound (A), (B) and (C), respectively, are x , y and z . The sum of x , y and z is



(A)

$$4 + x - 5 - 1 = 0$$

$$x - 2 = 0$$

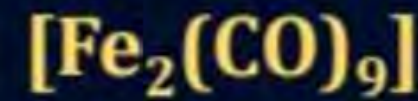
$$x = 2$$



(B)

$$4 + y - 8 = 0$$

$$y = +4$$



(C)

$$2z + 9 \times 0 = 0$$

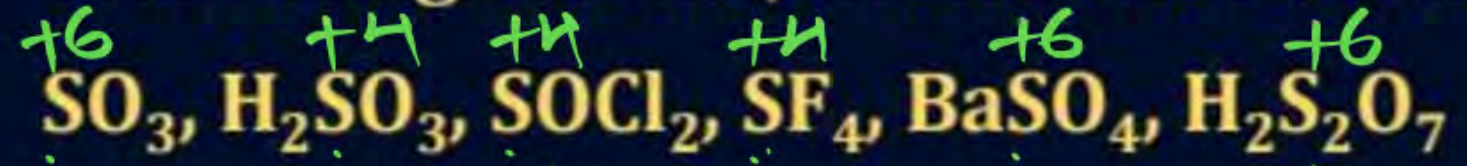
$$2z = 0$$

$$z = 0$$

$$x + y + z = 2 + 4 + 0 = 6$$

QUESTION – (NCERT: PL-239 | NV, JEE Main Jan. 27, 2024 (I))

From the given list, the number of compounds with +4 oxidation state of Sulphur



Ans 3

QUESTION – (NCERT: PL-239 | NV, JEE Main Sep. 02, 2020 (II))

The oxidation states of transition metal atoms in $\text{K}_2\text{Cr}_2\text{O}_7$, KMnO_4 and K_2FeO_4 , respectively, are x , y and z . The ^{sum} of x , y and z is 19.

$$\begin{aligned} 2 + 2x - 14 &= 0 \\ 2x &= 12 \\ x &= +6 \end{aligned}$$

$$\begin{aligned} 1 + y - 8 &= 0 \\ y &= +7 \end{aligned}$$

$$\begin{aligned} 2 + z - 8 &= 0 \\ z &= +6 \end{aligned}$$

$$\begin{aligned} x + y + z &= 19 \\ 6 + 7 + 6 &= 19 \end{aligned}$$

QUESTION – (NCERT: PL-239, | JEE Main Jan. 07, 2020 (I))

Oxidation number of potassium in K_2O , K_2O_2 and KO_2 , respectively, is :

- A** +2, +1 and +1/2
- B** +1, +1 and +1
- C** +1, +4 and +2
- D** +1, +2 and +4

QUESTION – (NCERT: PL-239, | JEE Main Jan. 07, 2020 (I))

The oxidation state of Cr in $[\text{Cr}(\text{H}_2\text{O})_6]\text{Cl}_3$, $[\text{Cr}(\text{C}_6\text{H}_6)_2]$ & $\text{K}_2[\text{Cr}(\text{CN})_2(\text{O})_2(\text{O}_2)(\text{NH}_3)]$ respectively are :

- A** +3, +4 and +6
- B** +3, +2 and +4
- C** +3, 0 and +6
- D** +3, 0 and +4

$+3$

$$x + 6 \times 0 - 3 = 0$$

$$x = +3$$

0

$$x + 2 \times 0 = 0$$

$$x = 0$$

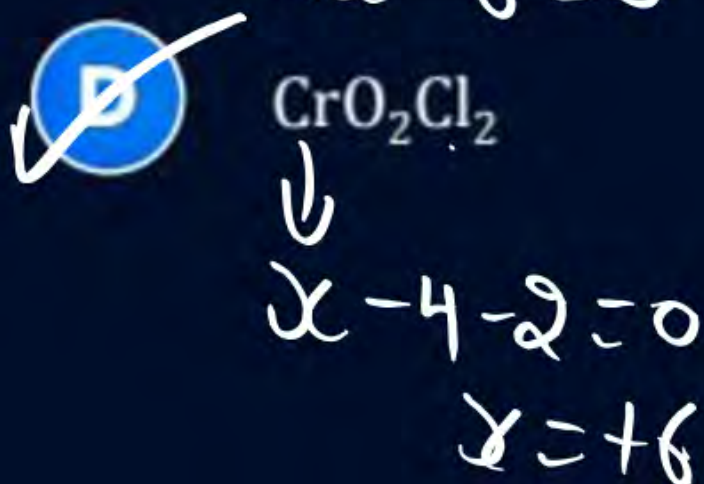
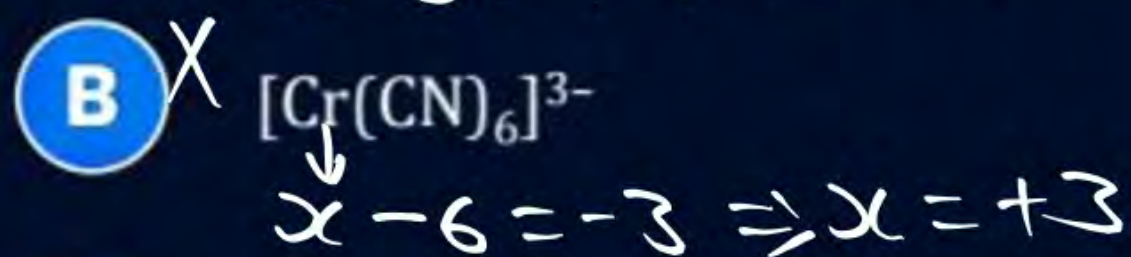
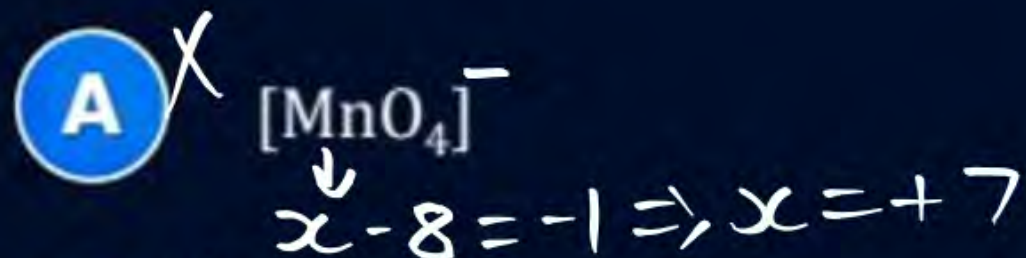
O_2^- O_2^{2-}

$+6$

$$x + x - 2 - 4 - 2 + 0 = 0$$

$$x = +6$$

Among the following, identify the species with an atom in +6 oxidation state:



THANK
YOU