

PYQSide

NEET REDOX REACTIONS — PYQS

Max. Marks: 100

Questions: 25

Section A (MCQ)

Q.1 In an acidic medium, 10 mL of 0.25 M oxalic acid is titrated with KMnO_4 solution. If the volume of KMnO_4 solution required to reach end point is 10 mL, the strength of the KMnO_4 solution is

[RE-NEET (UG) 2026]

- (1) 0.15 M (2) 0.10 M (3) 0.20 M (4) 0.25 M

Scan or tap for the full solution



Q.2 The correct decreasing order of oxidation state of the underlined atom in each molecule is

[RE-NEET (UG) 2026]

- (1) $\underline{\text{P}}_4\text{O}_6 > \underline{\text{Cl}}_2\text{O}_7 > \underline{\text{Al}}\text{H}_3$
 (2) $\underline{\text{P}}_4\text{O}_{10} > \underline{\text{S}}\text{O}_3 > \text{H}_2\underline{\text{O}}$
 (3) $\underline{\text{N}}_2\text{O}_5 > \underline{\text{Al}}_2\text{O}_3 > \text{H}_2\underline{\text{S}}$
 (4) $\underline{\text{Pb}}\text{O}_2 > \underline{\text{N}}_2\text{O}_3 > \underline{\text{S}}\text{O}_3$

Scan or tap for the full solution



Q.3 Consider the following compounds :

$\underline{\text{K}}\text{O}_2$, $\text{H}_2\underline{\text{O}}_2$ and $\text{H}_2\underline{\text{S}}\text{O}_4$

The oxidation state of the underlined elements in them are, respectively,

[NEET (UG) 2025]

- (1) +1, -2, and +4 (2) +4, -4, and +6
 (3) +1, -1, and +6 (4) +2, -2, and +6

Scan or tap for the full solution



Q.4 Which reaction is NOT a redox reaction?

[NEET (UG) 2024]

- (1) $\text{Zn} + \text{CuSO}_4 \longrightarrow \text{ZnSO}_4 + \text{Cu}$
 (2) $2\text{KClO}_3 + \text{I}_2 \longrightarrow 2\text{KIO}_3 + \text{Cl}_2$
 (3) $\text{H}_2 + \text{Cl}_2 \longrightarrow 2\text{HCl}$
 (4) $\text{BaCl}_2 + \text{Na}_2\text{SO}_4 \longrightarrow \text{BaSO}_4 + 2\text{NaCl}$

Scan or tap for the full solution



Q.5 On balancing the given redox reaction,
 $a\text{Cr}_2\text{O}_7^{2-}(\text{aq}) + b\text{SO}_3^{2-}(\text{aq}) + c\text{H}^+(\text{aq}) \longrightarrow$

$2a\text{Cr}^{3+}(\text{aq}) + b\text{SO}_4^{2-}(\text{aq}) + \frac{c}{2}\text{H}_2\text{O}(\ell)$

the coefficients a, b and c are found to be, respectively -

[NEET (UG) 2023]

- (1) 3, 8, 1 (2) 1, 8, 3 (3) 8, 1, 3 (4) 1, 3, 8

Scan or tap for the full solution



Q.6 Which of the following reactions is a decomposition redox reaction?

[NEET (UG) 2022 (Phase 2)]

- (1) $\text{P}_4(\text{s}) + 3\text{OH}^-(\text{aq}) + 3\text{H}_2\text{O}(\ell) \longrightarrow \text{PH}_3(\text{g}) + 3\text{H}_2\text{PO}_2^-(\text{aq})$
 (2) $2\text{Pb}(\text{NO}_3)_2(\text{s}) \longrightarrow 2\text{PbO}(\text{s}) + 4\text{NO}_2(\text{g}) + \text{O}_2(\text{g})$
 (3) $\text{N}_2(\text{g}) + \text{O}_2(\text{g}) \longrightarrow 2\text{NO}(\text{g})$
 (4) $\text{Cl}_2(\text{g}) + 2\text{OH}^-(\text{aq}) \longrightarrow \text{ClO}^-(\text{aq}) + \text{Cl}^-(\text{aq}) + \text{H}_2\text{O}(\ell)$

Scan or tap for the full solution



Q.7 Which of the following reactions is the metal displacement reaction? Choose the right option.

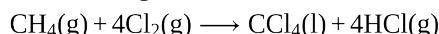
[NEET (UG) 2021]

- (1) $2\text{Pb}(\text{NO}_3)_2 \longrightarrow 2\text{PbO} + 4\text{NO}_2 + \text{O}_2 \uparrow$
 (2) $2\text{KClO}_3 \xrightarrow{\Delta} 2\text{KCl} + 3\text{O}_2$
 (3) $\text{Cr}_2\text{O}_3 + 2\text{Al} \xrightarrow{\Delta} \text{Al}_2\text{O}_3 + 2\text{Cr}$
 (4) $\text{Fe} + 2\text{HCl} \longrightarrow \text{FeCl}_2 + \text{H}_2 \uparrow$

Scan or tap for the full solution



Q.8 What is the change in oxidation number of carbon in the following reaction?



[NEET (UG) 2020]

- (1) 0 to +4 (2) -4 to +4 (3) 0 to -4 (4) +4 to +4

Scan or tap for the full solution



Q.9 Which of the following reactions are disproportionation reaction?

- A. $2\text{Cu}^+ \longrightarrow \text{Cu}^{2+} + \text{Cu}^0$
 B. $3\text{MnO}_4^{2-} + 4\text{H}^+ \longrightarrow 2\text{MnO}_4^- + \text{MnO}_2 + 2\text{H}_2\text{O}$
 C. $2\text{KMnO}_4 \xrightarrow{\Delta} \text{K}_2\text{MnO}_4 + \text{MnO}_2 + \text{O}_2$
 D. $2\text{MnO}_4^- + 3\text{Mn}^{2+} + 2\text{H}_2\text{O} \longrightarrow 5\text{MnO}_2 + 4\text{H}^+$

Select the **correct** option from the following :

[NEET (UG) 2019]

- (1) A, C and D (2) A and B only
 (3) A and D only (4) A, B and C

Scan or tap for the full solution



Q.10 Consider the change in oxidation state of bromine corresponding to different emf values as shown in the given diagram :



Then the species undergoing disproportionation is :

[NEET 2018]

- (1) BrO_4^- (2) BrO_3^- (3) Br_2 (4) HBrO

Scan or tap for the full solution



Q.11 The correct order of N-compounds in its decreasing order of oxidation states is

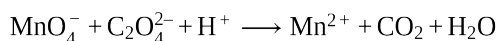
[NEET 2018]

- (1) HNO_3 , NO, N_2 , NH_4Cl
 (2) HNO_3 , NO, NH_4Cl , N_2
 (3) HNO_3 , NH_4Cl , NO, N_2
 (4) NH_4Cl , N_2 , NO, HNO_3

Scan or tap for the full solution



Q.12 For the redox reaction,



The correct coefficients of the reactants for the balanced equation are

[NEET 2018]

- | | | | |
|-----|------------------|-----------------------------|--------------|
| (1) | MnO_4^- | $\text{C}_2\text{O}_4^{2-}$ | H^+ |
| | 16 | 5 | 2 |
- | | | | |
|-----|------------------|-----------------------------|--------------|
| (2) | MnO_4^- | $\text{C}_2\text{O}_4^{2-}$ | H^+ |
| | 2 | 5 | 16 |
- | | | | |
|-----|------------------|-----------------------------|--------------|
| (3) | MnO_4^- | $\text{C}_2\text{O}_4^{2-}$ | H^+ |
| | 2 | 16 | 5 |
- | | | | |
|-----|------------------|-----------------------------|--------------|
| (4) | MnO_4^- | $\text{C}_2\text{O}_4^{2-}$ | H^+ |
| | 5 | 16 | 2 |

Scan or tap for the full solution



Q.13 Assuming complete ionisation, same moles of which of the following compounds will require the least amount of acidified KMnO_4 for complete oxidation?

[AIPMT 2015]

- (1) FeSO_3 (2) FeC_2O_4
 (3) $\text{Fe}(\text{NO}_2)_2$ (4) FeSO_4

Scan or tap for the full solution



Q.14 Which of the following processes does not involve oxidation of iron?

[AIPMT 2015 (Cancelled)]

- (1) Formation of $\text{Fe}(\text{CO})_5$ from Fe.
 (2) Liberation of H_2 from steam by iron at high temperature.
 (3) Rusting of iron sheets.
 (4) Decolourisation of blue CuSO_4 solution by iron.

Scan or tap for the full solution



Q.15 The pair of compounds that can exist together is

[AIPMT 2014]

- (1) FeCl_3 , SnCl_2 (2) HgCl_2 , SnCl_2
 (3) FeCl_2 , SnCl_2 (4) FeCl_3 , KI

Scan or tap for the full solution



Q.16 In acidic medium, H_2O_2 changes $\text{Cr}_2\text{O}_7^{2-}$ to CrO_5 which has two ($-\text{O}-\text{O}-$) bonds. Oxidation state of Cr in CrO_5 is

[AIPMT 2014]

- (1) +5 (2) +3 (3) +6 (4) -10

Scan or tap for the full solution



Q.17 When Cl_2 gas reacts with hot and concentrated sodium hydroxide solution, the oxidation number of chlorine changes from

[AIPMT 2012 (Prelims)]

- (1) zero to +1 and zero to -5
 (2) zero to -1 and zero to +5
 (3) zero to -1 and zero to +3
 (4) zero to +1 and zero to -3

Scan or tap for the full solution



Q.18 A mixture of potassium chlorate, oxalic acid and sulphuric acid is heated. During the reaction which element undergoes maximum change in the oxidation number?

[AIPMT 2012 (Prelims)]

- (1) S (2) H (3) Cl (4) C

Scan or tap for the full solution



Q.19 In which of the following compounds, nitrogen exhibits highest oxidation state?

[AIPMT 2012 (Prelims)]

- (1) N_2H_4 (2) NH_3 (3) N_3H (4) NH_2OH

Scan or tap for the full solution



Q.20 Oxidation numbers of P in PO_4^{3-} , of S in SO_4^{2-} and that of Cr in $\text{Cr}_2\text{O}_7^{2-}$ are respectively

[AIPMT 2009]

- (1) +3, +6 and +5 (2) +5, +3 and +6
 (3) -3, +6 and +6 (4) +5, +6 and +6

Scan or tap for the full solution



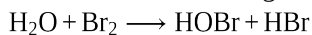
Q.21 Number of moles of MnO_4^- required to oxidize one mole of ferrous oxalate completely in acidic medium will be [AIPMT 2008]

- (1) 7.5 moles (2) 0.2 moles
(3) 0.6 moles (4) 0.4 moles

Scan or tap for the full solution



Q.22 Which is the best description of the behaviour of bromine in the reaction given below?



[AIPMT 2004]

- (1) Proton acceptor only
(2) Both oxidised and reduced
(3) Oxidised only
(4) Reduced only

Scan or tap for the full solution



Q.23 The oxidation states of sulphur in the anions SO_3^{2-} , $\text{S}_2\text{O}_4^{2-}$ and $\text{S}_2\text{O}_6^{2-}$ follow the order [AIPMT 2003]

- (1) $\text{S}_2\text{O}_4^{2-} < \text{SO}_3^{2-} < \text{S}_2\text{O}_6^{2-}$
(2) $\text{SO}_3^{2-} < \text{S}_2\text{O}_4^{2-} < \text{S}_2\text{O}_6^{2-}$
(3) $\text{S}_2\text{O}_4^{2-} < \text{S}_2\text{O}_6^{2-} < \text{SO}_3^{2-}$
(4) $\text{S}_2\text{O}_6^{2-} < \text{S}_2\text{O}_4^{2-} < \text{SO}_3^{2-}$

Scan or tap for the full solution



Q.24 Which reaction is not feasible? [AIPMT 2002]

- (1) $2\text{KI} + \text{Br}_2 \longrightarrow 2\text{KBr} + \text{I}_2$
(2) $2\text{KBr} + \text{I}_2 \longrightarrow 2\text{KI} + \text{Br}_2$
(3) $2\text{KBr} + \text{Cl}_2 \longrightarrow 2\text{KCl} + \text{Br}_2$
(4) $2\text{H}_2\text{O} + 2\text{F}_2 \longrightarrow 4\text{HF} + \text{O}_2$

Scan or tap for the full solution



Q.25 Oxidation numbers of A, B, C are +2, +5 and -2 respectively. Possible formula of compound is [AIPMT 2000]

- (1) $\text{A}_2(\text{BC}_2)_2$ (2) $\text{A}_3(\text{BC}_4)_2$
(3) $\text{A}_2(\text{BC}_3)_2$ (4) $\text{A}_3(\text{B}_2\text{C})_2$

Scan or tap for the full solution



ANSWER KEY

Ques.	1	2	3	4	5	6	7	8	9	10	11
Ans.	2	3	3	4	4	2	3	2	2	4	1
Ques.	12	13	14	15	16	17	18	19	20	21	22
Ans.	2	4	1	3	3	2	3	3	4	3	2
Ques.	23	24	25								
Ans.	1	2	2								