
# DPP–2 SOLUTIONS (OXIDISING & REDUCING AGENTS)

## Chapter: Redox Reactions

*"Concept clear hoga toh question khud solve ho jaata hai."*

**Q1. A reducing agent is a substance which can:**

Golden rule yaad rakho: **Jo electron deta hai = reducing agent**

Reducing agent:
- Electron lose karta hai
- Khud oxidised hota hai

Isliye reducing agent hamesha **electron donor** hota hai.

**Correct Option: (2)**

**Q2. If an element is in its lowest oxidation state, it can act as:**

Lowest oxidation state = oxidation number sabse zyada negative.

Lowest O.S. par element ke paas pehle se hi extra electrons hote hain.
- Electron **lose** kar sakta hai
- Electron **gain** nahi kar sakta

Electron lose karna = oxidation  reducing agent.

**Correct Option: (1)**

**Q3. In the course of a chemical reaction an oxidant –**

Oxidant = electron acceptor.

Oxidising agent:
- Electron gain karta hai
- Khud reduce hota hai

**Correct Option: (2)**

**Q4. When $H_2$ reacts with Na, it acts as:**

Hydrogen ka role compound par depend karta hai.

Reaction: $Na + H_2 \rightarrow 2NaH$
Hydrogen:

$$0 \rightarrow -1$$

Oxidation number decrease  hydrogen reduced  oxidising agent.

**Correct Option: (1)**

**Q5. In $Zn + I_2 \rightarrow ZnI_2$, what is oxidised?**

Oxidation = oxidation number increase.

Zn:

$$0 \rightarrow +2 \quad \text{(oxidation)}$$

I:

$$0 \rightarrow -1 \quad \text{(reduction)}$$

**Correct Option: (3)**

**Q6. $H_2S + H_2O_2 \rightarrow S + 2H_2O$ manifests:**

Sulphur ka oxidation number check karo.

S:

$$-2 \rightarrow 0$$

Oxidation  $H_2O_2$ oxidising agent.

**Correct Option: (1)**

**Q7. $H_2O$ (steam) $+ C \rightarrow CO + H_2$**

Carbon aur hydrogen dono ka O.S. dekho.

C:

$$0 \rightarrow +2 \quad \text{(oxidation)}$$

H (in $H_2O$):

$$+1 \rightarrow 0 \quad \text{(reduction)}$$

Water oxidising agent hai.

**Correct Option: (2)**

**Q8. $C + 4HNO_3 \rightarrow CO_2 + 2H_2O + 4NO_2$**

Conc. $HNO_3$ strong oxidising agent hota hai.

Carbon:

$$0 \rightarrow +4$$

Carbon oxidised $\Rightarrow$ $HNO_3$ oxidising agent.

**Correct Option: (1)**

**Q9. Which reaction does NOT show oxidising behaviour of conc. $H_2SO_4$?**

Sirf acid–base reaction identify karo.

$CaF_2 + 2H_2SO_4 \rightarrow CaSO_4 + 2HF$
Koi oxidation number change nahi $\Rightarrow$ no redox.

**Correct Option: (2)**

**Q10. Hydrogen acts as oxidising agent in:**

Hydride formation yaad rakho.

$Li + H_2 \rightarrow 2LiH$
H:

$$0 \rightarrow -1$$

Hydrogen reduced $\Rightarrow$ oxidising agent.

**Correct Option: (2)**

**Q11. $2FeCl_3 + H_2S \rightarrow 2FeCl_2 + 2HCl + S$**

Iron ka oxidation number dekho.

Fe:

$$+3 \rightarrow +2$$

Reduction $\Rightarrow$ $FeCl_3$ oxidising agent.

**Correct Option: (1)**

**Q12. Reducing agent in $Fe_2O_3 + 2Al \rightarrow Al_2O_3 + 2Fe$**

Jo oxidised hota hai, wahi reducing agent.

Al:

$$0 \rightarrow +3$$

Oxidation $\Rightarrow$ reducing agent.

**Correct Option: (2)**

**Q13. Oxidant in $2FeCl_3 + H_2 \rightarrow 2FeCl_2 + 2HCl$**

Oxidant hamesha reduced hota hai.

Fe:

$$+3 \rightarrow +2$$

Reduction  oxidant.

**Correct Option: (2)**

**Q14. Compound acting as both oxidising and reducing agent**

Dual behaviour ka best example yaad rakho.

$H_2O_2$:

- Kabhi oxidised ($O_2$ banata hai)
- Kabhi reduced ($H_2O$ banata hai)

**Correct Option: (2)**

**Q15. Correct statement regarding reactions (A) and (B) of $H_2O_2$**

Dono reactions alag analyse karo.

(A) me $H_2O_2$ oxidant, (B) me $H_2O_2$ reductant.

**Correct Option: (2)**

**Q16. $H_2O_2$ acts as reducing agent in:**

Reducing agent = oxidised.

$Cl_2$:

$$0 \rightarrow -1$$

Chlorine reduced  $H_2O_2$ oxidised  reducing agent.

**Correct Option: (2)**

**Q17. Role of $H_2O_2$ in reactions with $O_3$ and $Ag_2O$**

Ozone very strong oxidant hota hai.

(a) $H_2O_2$ reducing agent (b) $H_2O_2$ oxidising agent

**Correct Option: (2)**

**Q18. $H_2O_2$ acts as reducing agent (electrochemical)**

Electron loss identify karo.

$H_2O_2 \rightarrow O_2$ Oxidation reducing agent.

**Correct Option: (4)**

**Q19. Which acts as both oxidant and reductant**

Disproportionation possible hona chahiye.

$H_2O_2$ disproportionation reactions dikhata hai.

**Correct Option: (3)**

**Q20. Oxidation numbers A = +2, B = +5, C = 2. Possible formula is:**

Total oxidation number zero hona chahiye.

Sirf $A_3(BC_4)_2$ me total charge zero hota hai.

**Correct Option: (2)**

**Q21. $H_2O + Br_2 \rightarrow HOBr + HBr$**

Disproportionation identify karo.

Br:

$$0 \rightarrow +1 \quad \text{and} \quad 0 \rightarrow -1$$

Same element oxidised + reduced.

**Correct Option: (1)**

**Q22. $2Br_2 + 6CO_3^{2-} + 3H_2O \rightarrow 5Br^- + BrO_3^- + 6HCO_3^-$**

Bromine ke products dekho.

$Br_2 \rightarrow Br^-$ (reduction) $Br_2 \rightarrow BrO_3^-$ (oxidation)
Disproportionation.

**Correct Option: (4)**

**Q23.** $\mathbf{Cl_2 + IO_3^- \xrightarrow{OH^-} IO_4^- + 2Cl^-}$

Oxidant = reduced species.

$Cl_2$:

$$0 \rightarrow -1 \quad \text{(reduction)}$$

$IO_3^-$:

$$+5 \rightarrow +7 \quad \text{(oxidation)}$$

**Correct Option: (2)**

**Q24.** **Which change requires an oxidising agent?**

Oxidation = oxidation number increase.

$2S_2O_3^{2-} \rightarrow S_4O_6^{2-}$
Sulphur oxidised $\Rightarrow$ oxidising agent required.

**Correct Option: (1)**

**Q25.** **$8Al + 3Fe_3O_4 \rightarrow 4Al_2O_3 + 9Fe$. Electrons transferred = ?**

Al oxidation number use karo.

Al:

$$0 \rightarrow +3$$

Total electrons $= 8 \times 3 = 24$

**Correct Option: (4)**

**Q26.** **Order of decreasing reducing power of A, B, C, D**

Strong reducing agent easily oxidised hota hai.

Given reactions se order milta hai:

$$C > A > D > B$$

**Correct Option: (4)**