CHEMISTRY

BOOKS - PATHFINDER CHEMISTRY (BENGALI ENGLISH)

REDOX REACTIONS

Question Bank

1. $Zn(s) + Cu^{2+} \rightarrow Zn^{2+} + Cu(s)$ in this reaction which is oxidant and which is reductant?

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2. What is the oxidation number of alkaline earth metals in their compound?

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3. Find the oxidation number of bromine in

BrO_4^-

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4. Find the oxidation number of bromine in

NaBr

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5. Give one example of a chemical reaction in which H_2 is oxidant and another reaction Where O_2 is reductant.

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6. Complete the reaction $.MnO_4^{-+} \_\_ \_+ \_\_ \_\_ \rightarrow Mn^{2+} + 4H_2O$

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7. Which one is the strongest oxidising agent among all halogens and why?

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8. What is the most essential condition that must be maintained in a redox reaction?

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9. Find the oxidation no. of S in

H_2SO_5

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10. Find the oxidation no. of S in

$H_2S_2O_8$

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11. Consider the following cell reaction

$Zn\left|Zn^{2+}(1M)\right|\left|Cd^{+2}(1M)\right|Cd.\ Givethecellreaction$ and $calcatethes$ tan

(E^0)_((Zn^(2+))/(Zn)=-0.76V , $\left(E^0\right)_{\frac{Cd^{2+}}{Cd}}=0.40V$

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12. Give an example of disproportionation reaction.

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13. $CH_3CH_2OH \xrightarrow{H} 2SO_4 \rightarrow CH_2=CH_2+H_2O$ justify whether this is a redox reaction or not.

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14. A solution of AgNO_3 was stirred with iron rod. Will it cause any change in the concentration of silver and nitrate ions? $\left(\left(E^{0}\right)_{\frac{Fe^{2+}}{Fe}}=-0.44V\right.$, $\left.\left(E^{0}\right)_{\frac{Ag^{+}}{Ag}}=0.80V\right)$

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15. Find the oxidation number of each C atom in

C_3O_2

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16. Find the oxidation number of each C atom in

CH_3COCH_3

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17. A cell is prepared by dipping a zinc rod in 1(M) $ZnSo_4$ solution. The standard electrode potential for `Pb^(2+)/ Pb and Zn^(2+) /Zn electrodes are -0.126V and -0.763 V respectively.

How will you represent the cell?

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18. A cell is prepared by dipping a zinc rod in 1(M) $ZnSo_4$ solution. The standard electrode potential for `Pb^(2+)/ Pb and Zn^(2+) /Zn electrodes are -0.126V and -0.763 V respectively.

Write the half cell reactions and overall cell reaction.

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19. Out of aluminium and silver vessel which one will be more suitable to store 1(M) HCl solution .

$(E^0)_{\frac{Al^{+3}}{Al}} = -1.66v, (E^0)_{\frac{Ag^+}{Ag}} = 0.80V$

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20. Calculate the oxidation number of underlined element.

`KI_(-3)

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21. Calculate the oxidation number of underlined element.

NaB_H_4

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22. Calculate the oxidation number of underlined element.

$H_2S_2O_7$

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23. Calculate the oxidation number of underlined element.

`KI_(-3)

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24. HNO_3 acts as only oxidant while HNO_2 acts as both oxidant and reductant. Explain.

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25. The reduction potential of four elements A, B , C, D are +0.79V , -0.74V , 1.08V , -0.31V respectively. Arrange them in order of reducing character.

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26. Balance the following equations by Ion-Electron method.

$Mno_4^- + Br^- + H^+ \rightarrow Mn^{+2} + Br_2 + H_2O$ (in acidic medium)

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27. Balance the following equations by Ion-Electron method.

$P + OH^- \rightarrow PH_3 + H_2PO_2^-$ (in basic)

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28. Calculate the oxidation no of the following

S in H_2SO_5 (Caro's Acid)

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29. Calculate the oxidation no of the following

Cl in $CaOCl_2$ (Bleaching powder)

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30. Calculate the oxidation no of the following

C in C_3O_2 (carbon suboxide)

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31. Balance the reaction by oxidation number method.

$FeS_2 + O_2 \rightarrow Fe_2O_3 + SO_2$

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32. Balance the reaction by oxidation number method.

$H_2S + MnO_4^- \rightarrow Mn^{+2} + S + H_2O$ (acidic medium)

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33. Explain

Fe produces H_2 with dil HCl but Cu does not.

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34. Explain

Can Cl_2 be stored in copper cylinder ? $(E^0)_{\frac{Cu^{2+}}{Cu}} = 0.34V$, $\frac{(E^0)_{Cl^-}}{Cl} = 0.36V$

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35. A cell is prepared by dipping a copper rod in 1 M $CusO_4$ and nickel rod in 1 M $NiSO_4$ solution.

$(E^0)_{\frac{Cu+2}{C}u=0.34V}$, $(E^0)_{\frac{Cl-}{Cl}} = 0.36V$

Give cell construction.

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Give cell construction.

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37. A cell is prepared by dipping a copper rod in 1 M $CusO_4$ and nickel rod in 1 M $NiSO_4$ solution.

$(E^0)_{\frac{Cu+2}{C}u=0.34V}$, $(E^0)_{\frac{Cl-}{Cl}} = 0.36V$

Give cell construction.

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38. $H_2O + Br_2 \rightarrow HOBr + HBr$ in this reaction what is the best description of bromine and give reasons.

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39. What is the oxidation no. Of Fe in $Fe_4\left[Fe(CN)_6\right]_3$

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40. $N_2H_4 + ClO_3^- \rightarrow NO + Cl^-$ identify oxidant and reductant.

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41. Find out the oxidation no. of Fe in $Fe(CO)_5$

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42. Give two important functions of salt bridge.

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