



CHEMISTRY

BOOKS - JEEVITH PUBLICATIONS CHEMISTRY (KANNADA ENGLISH)

REDOX REACTIONS

One Mark Questions And Answers

1. Define oxidation in terms of electronic concepts?

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2. Define reduction in terms of electronic concepts?

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3. What are redox reactions? Given an example.

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4. What is the oxidation number of alkali metals in their components?

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5. $Zn(s) + Cu^{2+} \rightarrow Zn^{2+} + Cu(s)$. Is this reaction a redox reaction? IF yes, name the oxidizing agent as well as the reducing agent?

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6. Which among the following, does not conduct electric current and why?

Molten NaCl, Solid Pb, $AgNO_3$ solution and methanol.

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7. Define cathode and anode.

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8. What is the oxidation state of Cr in CrO_5 and why?

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9. Define oxidation number?

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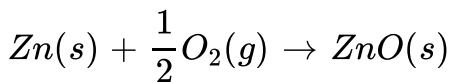
10. What is meant by oxidation potential of an electrode?

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11. What is the relationship between the standard oxidation potential and the standard reduction potential?

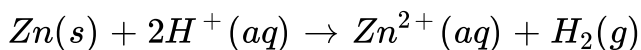
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12. Identify the oxidant and reductant in the following reaction:



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13. Identify the oxidant and reductant in the following reaction:



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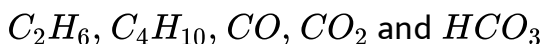
14. Define oxidising agent /oxidants in terms of oxidation numbers.

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15. What do you mean by disproportionation reaction?

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16. Determine the oxidation number of C in the following :



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17. Determine the oxidation number of O in the following: Na_2O_2 and CH_3COOH

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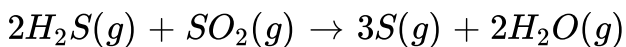
18. Find out the oxidation number of sulphur in the following species : HSO_4^- .

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19. Determine the oxidation number of all the atoms in $KClO_4$.

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20. Determine the change in the oxidation number of S in H_2S and SO_2 in the following industrial reaction:



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21. What is oxidised and what is reduced in the reaction $H_2S + Cl_2 \rightarrow 2HCl + S$?

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22. In the reactions $SnCl_2 + HgCl_2 \rightarrow SnCl_4 + Hg_2Cl_2$ which is the oxidant and which is the reductant?

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23. Identify the strongest and weakest reducing agents from the following list : *Zn, Cu, Ag, Na, Sn*.

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24. Can the oxidation number of an atom in a chemical species be fractional? Illustrate by an example?

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25. Define reducing agent/ reductants in terms of oxidation number.

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26. Define Redox titrations?

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27. Name the indicator used in the titration of Fe^{2+} against MnO_4^- in an acid medium.

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28. What is the colour change at the end point in the titration of oxalate ions against MnO_4^-

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29. Define combination redox reaction.

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30. Define decomposition redox reaction?

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31. Define displacement redox reaction?

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32. What is metal displacement redox reaction?

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33. What are the uses of hypochlorite ion?

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Two Mark Question

1. Calculate the oxidation number of the underlined atoms in the following compounds and ions : $\underline{C}H_4$, Sb_2O_5 , $\underline{C}_6H_{12}O_6$

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2. Identify the oxidant and the reductant in the following chemical reactions: $2I^-(aq) + Cl_2(g) \rightarrow 2Cl^-(aq) + I_2(s)$

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3. Name the indicator and the colour change at the end point in titration of Fe^{2+} against $Cr_2O_7^{2-}$ in an acidic medium.

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4. Explain combination redox reaction in the burning of carbon.

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5. Which of the following is the best reducing agent and why? Li, Cu, Br_2 , F_2 , H_2 , K.

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6. Calculate the oxidation number of C in CH_2Cl_2

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7. Calculate the oxidation number of Pb in Pb_3O_4

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8. Explain decomposition of potassium chlorate.

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9. Explain metal displacement redox reaction of copper sulphate solution and zinc metal.

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10. Write non metal redox reaction in alkali and alkaline earth metals?

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11. How does fluorine reacts with water in a non metal redox reaction?

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12. Explain disproportionation redox reaction of hydrogen peroxide.

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13. Explain disproportionation reaction of chlorine and a conc alkali.

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14. What is the oxidation number of Cr in K_2CrO_4

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15. What is the oxidation number of Ni in $Ni(CO)_4$

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16. What is the oxidation number of Fe in $Fe(CO)_5$

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17. What is the oxidation state of S in H_2SO_4 ,

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18. What is the oxidation state of P in P_4 ,

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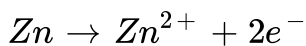
19. What is the oxidation state of P in PH_3

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20. What is the oxidation state of P in H_3PO_4

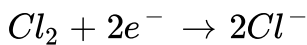
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21. Whether the following redox reaction is oxidation and which is reduction?



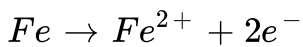
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22. Which of the following redox reaction is oxidation and which is reduction?



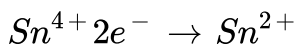
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23. Which of the following redox reaction is oxidation and which is reduction?



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24. Which of the following redox reaction is oxidation and which is reduction?



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25. Which type of electrolytes are used in a salt bridge?

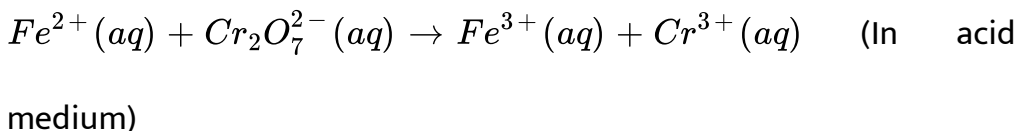
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Three Marks Questions

1. Explain oxidation and reduction in terms of loss and gain of electrons with an example.

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2. Balance the following redox reaction by half reaction method.

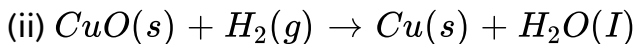
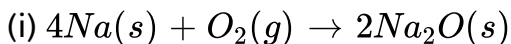


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3. Explain the redox reaction in galvanic cells.

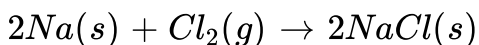
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4. Identify the substances that are oxidised and the substances that are reduced in the following reactions.



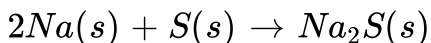
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5. Mention which gets reduced and which gets oxidized in the following reactions.



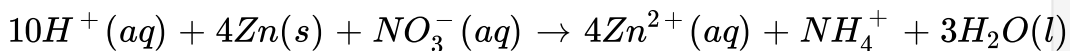
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6. Mention which gets reduced and which gets oxidized in the following reactions.



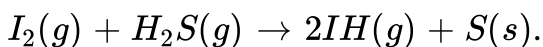
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7. Identify the oxidant and reductant in the following reactions:



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8. Identify the oxidant and reductant in the following reactions:

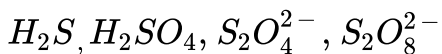


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9. Write the rules for assigning oxidation number.

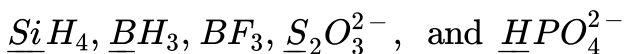
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10. Find the oxidation state of sulphur in the following compounds:



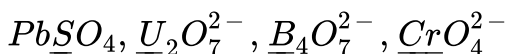
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11. Find the oxidation number of the element underlined in the following species,



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12. Find the oxidation number of the element underlined in the following species,



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13. What is the oxidation number of the metals $[Fe(CN)_6]^{4-}$

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14. What is the oxidation number of Mn in MnO_4^- ?

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15. Explain applications of Redox Reactions?

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16. A cell is prepared by dipping a chromium rod in 1 M $Cr_2(SO_4)_3$ solution and an iron rod in 1M $FeSO_4$ solutions. The standard potentials of chromium and iron electrodes are -0.75 V and 0.45 V respectively.

- (a) What will be the cell reaction?
- (b) What will the standard EMF of the cell?
- (c) Which electrode will act an anode?
- (d) WHICH electrode will act as cathode?

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17. Permanganate ion reacts with bromide ion in a basic medium, to give manganese dioxide and bromate ion. Write the balanced chemical equation for the reaction.

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18. Permanganate (VII) ion, in basic solution oxidizes iodide ion I^- to produce molecular iodine (I_2) and manganese (IV) oxide (MnO_2). Write a balanced ionic equation to represent this redox reaction.

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19. What is the oxidation number of sulphur in the following molecules/ ions



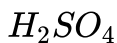
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20. What is the oxidation number of sulphur in the following molecules/ ions



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21. What is the oxidation number of sulphur in the following molecules/ ions



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22. Find the oxidation number of the underlined atoms.



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23. Find the oxidation number of the underlined atoms.



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24. Find the oxidation number of the underlined atoms.



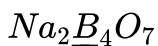
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25. Find the oxidation number of the underlined atoms.



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26. Find the oxidation number of the underlined atoms.



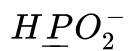
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27. Find the oxidation number of the underlined atoms.



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28. Find the oxidation number of the underlined atoms.



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29. Oxidation number of Fe in Fe_3O_4 is :

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