



CHEMISTRY

BOOKS - MBD CHEMISTRY (ODIA ENGLISH)

REDOX REACTIONS

Question Bank

1. What is the oxidation number of nitrogen in nitrous oxide.

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2. What is the oxidation number of Mn in K_2MnO_4 ?

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3. Calculate the weight of NaOH required to neutralise 25mL of $1M H_2SO_4$?

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4. What is the oxidation number of chromium in $K_2Cr_2O_7$ and nitrogen in N_2H_4 ?

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5. What is the equivalent mass of Na_2CO_3 ?

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6. What is the oxidation number of Mn in $KMnO_4$?

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7. Is Hydrogen iodide an oxidising agent or a reducing agent.

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8. Write down the equation that will show the relationship between normality and molarity.

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9. Name a compound where chlorine exhibits oxidation number equal to +7?

A. hcl

B.

C.

D.

Answer:



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10. The molecular mass of sodium carbonate is 106. What is its equivalent mass ?



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11. What is the oxidation number of hydrogen in sodium hydride?



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12. What is the oxidation number of Cr in $K_2Cr_2O_4$?



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13. Which halogen shows only one oxidation number in its compounds ?



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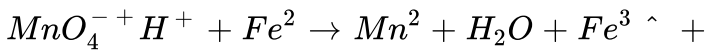
14. What is the oxidation number of N in $AgNO_3$?

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15. What is the oxidation number of Cr in $K_2Cr_2O_7$?

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16. Balance the equation



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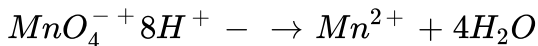
17. What is the equivalent mass of sodium carbonate ?

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18. What is the oxidation number of N in N_2H_4 ?

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19. Fill up the gap in the following equation,

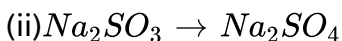
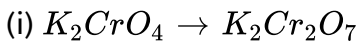


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20. What is the oxidation number of Mn in potassium permanganate ?

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21. What is the change in the oxidation number of the marked element in the following.



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22. "Oxidation takes place at the anode during electrolysis." Justify the statement with an example.

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23. Write ionic equation for the reaction between potassium permanganate and stannous chloride.

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24. What is oxidation number ?

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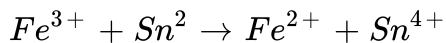
25. Balance the equation





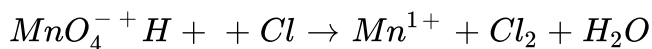
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26. Balance the equation by ion-electron method :



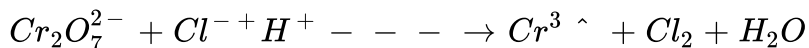
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27. Balance the equation:



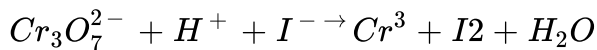
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28. Balance the equation :



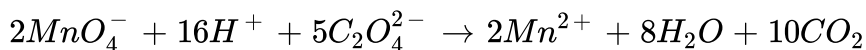
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29. Balance the equation :



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30. In the following equation what is the change in the oxidation number of manganese ?



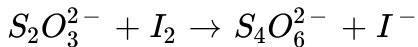
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31. Which one of the following is a conductor in the solid state ?

- (a) sodium chloride
- (b) diamond
- (c) graphite
- (d) sulphur

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32. Complete and balance the following equation :



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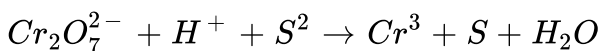
33. Write a balanced chemical equation in the reaction of H_2O_2 with acidified $KMnO_4$ solution.

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34. Define and illustrate equivalent mass of an acid.

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35. Balance the equation :

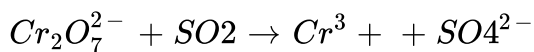


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36. What is the sum of the oxidation number of all the atoms in a neutral molecule ?

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37. Balance the equation by ion-electron method:



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38. Give two examples of oxidation-reduction reaction.

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39. What is the maximum oxidation state that nitrogen can have ?

A. +3

B. +3

C. +5

D. +8

Answer: C



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40. 5.3g of Na_2CO_3 added to 100 cc of $1NH_2SO_4$. The final solution is :

A. acidic

B. alkaline

C. neutral

D. basic

Answer: B



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41. The volume of 0.1 M H_2SO_4 required to neutralise 30 ml of 2.0 M NaOH is :

- A. 10mL
- B. 20mL
- C. 30mL
- D. 40mL

Answer: C

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42. In acidic medium, permanganate is reduced to Mn^{2+} by excess of reducing agent as $MnO_4^- + 8H^+ + 5e^- \rightarrow Mn^{2+} + 4H_2O$. Therefore, the equivalent mass of $KMnO_4$ is obtained on dividing its molecular mass by :

- A. 8

B. 1

C. 5

D. 1

Answer: C



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43. How many electrons are involved in oxidation by $KMnO_4$ in basic medium

A. one

B. five

C. three

D. four

Answer: A



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44. What is the oxidation state of Cl in ClO_3 ?

A. $+VI$

B. III

C. $+IV$

D. II

Answer: A



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45. Oxidation state of oxygen in H_2O_2 IS

A. -1

B. 2

C. 5

D. -2

Answer: A

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46. What is the oxidation number of nickel in $\text{Ni}(\text{CO})_4$?

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47. What is the oxidation number of silver in $[\text{Ag}(\text{NH}_3)_2]\text{Cl}$?

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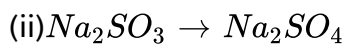
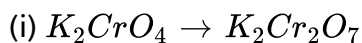
48. What is the role of MnO_2 in the preparation of Cl_2 from HCl ?

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49. What is the change in oxidation number of the encircled element in the following $[Fe(CN)_6]^{4-} \rightarrow [Fe(CN)_6]^{3-}$.

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50. What is the change in the oxidation number of the marked element in the following.



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51. What is the oxidation number of iron in $[Fe(CN)_6]^{3-}$ is ?.

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52. Write any reaction in which H_2O acts as an oxidising agent.

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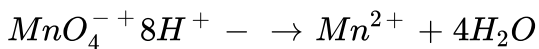
53. What is the oxidation number of Iron in Potassium Ferric Cyanide ?

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54. What is the oxidation number of N in N_2H_4 ?

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55. Fill up the gap in the following equation,



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56. What is the oxidation number of Cr in $K_2Cr_2O_7$?

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57. What is the oxidation number of Mn in K_2MnO_4 ?

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58. Oxidation is due to _ of electrons whereas reduction is due to _ of electrons.

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59. What is the oxidation number of hydrogen in sodium hydride?

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60. Reduction is __ of electrons.

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61. What is the oxidation number of Mn in $KMnO_4$?

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62. What is the oxidation number of N in N_2H_4 ?

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63. What is oxidation number of

(a) S in $Na_2S_2O_3$

(b) S in $Na_2S_4O_6$

(c) P in H_3PO_4

(d) Cl in $KClO_3$

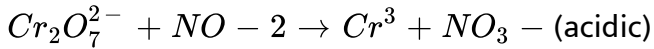
(e) Fe in $K_3[Fe(CN)_6]$

(f) Fe in $K_4[Fe(CN)_6]$

(g) O in OF_2

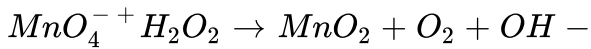
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64. Complete and balance the following equation :



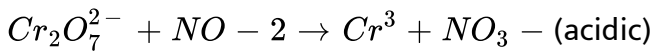
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65. Balance the following ionic equation :



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66. Complete and balance the following equation :



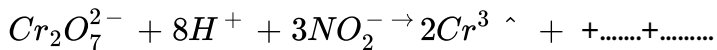
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67. Balance the following equation by ion-electron method. $\text{MnO}_4^- + \text{C}_2\text{O}_4^{2-} + \text{H}^+ \rightarrow \text{Mn}^{2+} + \text{CO}_2 + \text{H}_2\text{O}$.



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68. Fill up the gaps in the following equations :



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69. Write the ion-electron equation for the following :

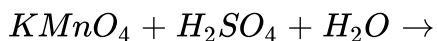


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70. Give two examples of oxidation-reduction reaction.

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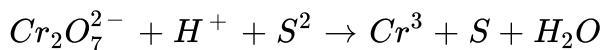
71. Complete the equation given below and make it a balanced one :





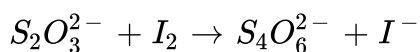
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72. Balance the equation :



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73. Complete and balance the following equation :



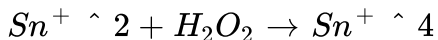
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74. Write a balanced chemical equation in the reaction of H_2O_2 with acidified $KMnO_4$ solution.



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75. Complete and balance the equation.



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76. Calculate the molarity when 73 grams of HCl is dissolved in water to make 1500 ml solution.

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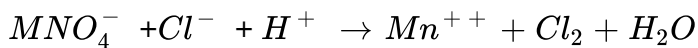
77. What is the oxidation number of Mn in K_2MnO_4 and KMnO_4 ?

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78. A solution containing 10.5 grams of an alkali is completely neutralised by 500 ml of 0.5 N acid . What is the equivalent weight of the base ?

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79. Balance the equation.



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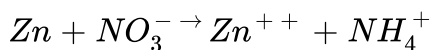
80. Give the ionic equation between copper turning and conc HNO_3 .

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81. Give the ionic equation of oxidation of iodine by conc HNO_3 .

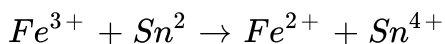
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82. Complete and balance the equation.



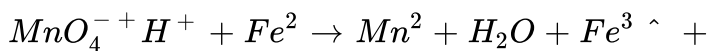
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83. Balance the equation by ion-electron method :



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84. Balance the equation



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85. Oxidation number of Fe in $Fe_{(0.94)}O$ is:

A. 200

B. 200/94

C. 94//200

D. None

Answer: B

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86. Oxidation number of Fe in $Na_2[fe(CN)_5NO]$ is

A. 2

B. 1

C. 3

D. -2

Answer: A

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87. Oxidation number of Cr in CrO_5 is:

A. 6

B. 10

C. 4

D. 8

Answer: A



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88. Oxidation number of Ca in $CaOCl_2$ is:

A. - 1 and + 1

B. 2

C. -2

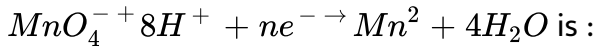
D. None

Answer: A



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89. The value of n in ,



A. 5

B. 4

C. 3

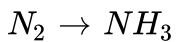
D. 2

Answer: A



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90. Equivalent weight of N_2 in the change is :



A. 28 / 6

B. 28

C. 28 / 2

Answer: A

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91. In which reaction is hydrogen acting as an oxidising agent ?

- A. With iodine to, give hydrogen iodide
- B. With lithium to give lithium hydride
- C. With nitrogen to give ammonia
- D. With sulphur to give hydrogen sulphide

Answer: B

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92. In a reaction between zinc and iodine in which zinc iodide is formed, which is oxidized ?

- A. Zinc ions
- B. Iodide ions
- C. Zinc atom
- D. Iodine

Answer: C



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93. Addition of zinc powder to $CuSO_4$ solution precipitates copper due to :

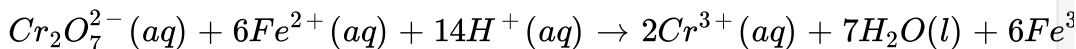
- A. Reduction of Cu^{2+}
- B. Reduction of SO_4^{2-}
- C. Reduction of Zn

D. Hydrolysis of $CuSO_4$

Answer: A

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94. In the reaction between acidified $K_2Cr_2O_7$ and iron (II) ions shown by the equation :

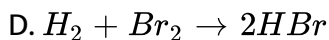
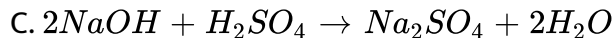
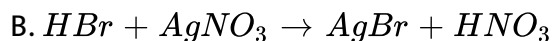
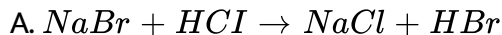


- A. The colour of the solution changes from green to yellow
- B. The iron (II) ions are reduced
- C. The dichromate ions are reduced
- D. Hydrogen ions are reduced

Answer: C

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95. Which reaction involves oxidation-reduction ?

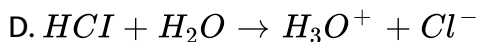
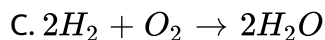
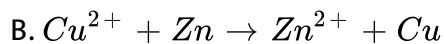
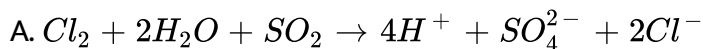


Answer: D



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96. Which one is not an example of redox reaction ?



Answer: D

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97. In $C + H_2O \rightarrow CO + H_2$, H_2O act as :

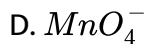
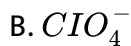
- A. Oxidant
- B. Reductant
- C. Both (a) and (b)
- D. None of these

Answer: A

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98. Which acts as reducing agent as well as oxidising agent ?

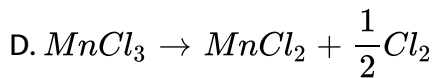
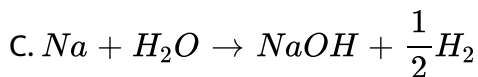
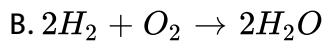
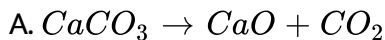
- A. O_3



Answer: A

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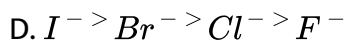
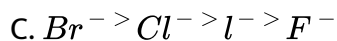
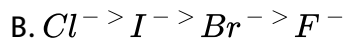
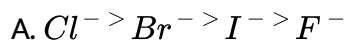
99. Which is not a redox change ?



Answer: A

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100. The correct order of reducing power of halide ions is :



Answer: D

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101. Saline hydrides are :

A. Strong oxidants

B. Strong reductants

C. Strong dehydrating agents

D. Strong bleaching agents

Answer: B

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102. In the aluminothermic process, aluminium acts as:

- A. An oxidising agent
- B. A flux
- C. A reducing agent
- D. A solder

Answer: C

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103. Solution of sodium metal in liquid NH_3 is strongly reducing due to the presence of :

- A. Sodium atoms
- B. Solvated electrons
- C. NaOH
- D. Sodium amide

Answer: B

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104. The stable oxidation states of Mn are:

- A. +2, +3
- B. +3, +7
- C. +2, +7
- D. +3, +5

Answer: C

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105. Oxidising power depends on:

- A. Reduction potential
- B. Electrons affinity
- C. Ionisation energy
- D. None of the above

Answer: A



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106. Which shows same oxidation state in all its compounds with other elements :

- A. Hydrogen
- B. Fluorine
- C. Carbon

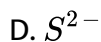
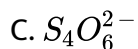
D. Oxygen

Answer: B



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107. Iodine oxidises $S_2O_3^{2-}$ ion to:

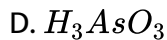


Answer: C



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108. Which of the following acids is strongest ?



Answer: A



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109. Aqueous solution of SO_2 reacts with H_2S to precipitate sulphur. Here

SO_2 act as :

A. Catalyst

B. Reducing agent

C. Oxidising agent

D. Acid

Answer: C

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110. How many mole of electrons are involved in the reduction of one mole of MnO_4^- ion in alkaline medium to MnO_3^- :

A. 2

B. 1

C. 3

D. 4

Answer: A

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111. The reaction , $H_2S + H_2O_2 \rightarrow S + 2H_2O$ shows :

A. Acidic nature of H_2O_2

B. Alkaline nature of H_2O_2

C. Oxidising action of H_2O_2

D. Reducing action of H_2O_2

Answer: C

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112. Which one of the compounds does not decolourised an acidified solution of $KMnO_4$?

A. SO_2

B. $FeCl_3$

C. H_2O_2

D. $FeSO_4$

Answer: B

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113. When NaCl is dissolved in water , the sodium ion becomes :

- A. Oxidised
- B. Reduced
- C. Hydrolysed
- D. Hydrated

Answer: D



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114. The oxidation state of nitrogen varies form :

- A. $-3 \rightarrow +5$
- B. $0 \rightarrow +5$
- C. $-3 \rightarrow 1$
- D. $+3 \rightarrow +5$

Answer: D



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115. In the reaction ,

$Cr_2O_7^{2-} + 14H^+ + 6I^- \rightarrow 2Cr^{3+} + 7H_2O + 3I_2$ which element is reduced ?

A. I

B. O

C. H

D. Cr

Answer: D



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116. Which is a strong reducing agent ?

- A. Hydrogen iodide
- B. Sodium hypochlorite
- C. Feric chloride
- D. Potassium bromide

Answer: A

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117. If H_2S is passed through an acidified $K_2Cr_2O_7$ solution, the colour of the solution :

- A. Will remain unchanged
- B. Will change to deep red
- C. Will change to dark green
- D. Will change to dark brown

Answer: C

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118. The oxidation number that iron does not exhibit in its common compounds or in its elemental state is :

A. Zero

B. +1

C. +2

D. +3

Answer: B

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119. In the preparation of chlorine from HCl , MnO_2 act as :

A. Reducing agent

B. Oxidising agent

C. Catalytic agent

D. Dehydrating agent

Answer: B

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120. What would happen when a small quantity of H_2O_2 is added to a solution of $FeSO_4$?

A. Colour disappears

B. H_2 is evolved

C. An electron is added to $Fe^{(2+)}$

D. An electron is lost by Fe^{2+}

Answer: D

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121. Bleaching action of chlorine in presence of moisture is :

- A. Reduction
- B. Oxidation
- C. Hydrolysis
- D. Substitution

Answer: B



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122. Which is strongest oxidising agent ?

- A. Cl_2
- B. F_2
- C. O_3
- D. O_2

Answer: B

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123. Conversion of $KMnO_4$ to $MnSO_4$ is a process of :

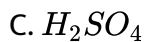
- A. Oxidation
- B. Reduction
- C. Dehydration
- D. Bothe oxidation and reduction

Answer: B

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124. Which acts as a reducing agent ?

- A. HNO_3



Answer: D

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125. Stronger is oxidising agent, more is :

A. Standard reduction potential of that species

B. The tendency to get itself oxidised

C. The tendency to lose electrons by that species

D. Standard oxidation potential of that species

Answer: A

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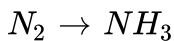
126. H_2S is passed through an acidified solution of copper sulphate and a black precipitate is formed. This is due to :

- A. Oxidation of Cu^{2+}
- B. Reduction of Cu^{2+}
- C. Double decomposition
- D. Reduction and oxidation

Answer: C

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127. Equivalent weight of NH_3 in the change is :



- A. $28/3$
- B. 17
- C. $17/2$

D. 17//3

Answer: D



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128. Equivalent weight of FeC_2O_4 in the change :

$FeC_2O_4 \rightarrow Fe^{3+} + CO_2$ is :

A. $17/2$

B. $M/3$

C. $M/2$

D. $M//1$

Answer: A



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129. Oxidation number of carbon of carbon in carbon suboxide is :

A. $+2/3$

B. $+4/3$

C. $+4$

D. $-4/3$

Answer: B



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130. The oxidation number of sulphur in S_8, S_2F_2, H_2S respectively are :

A. 0, +1 and -2

B. +2, +1 and -2

C. 0, +1 and +2

D. -2, +1 and -2

Answer: A

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131. When SO_2 is passed in a solution of potassium iodate, the oxidation state of iodine changes from :

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132. When SO_2 is passed in acidified potassium dichromate solution, the oxidation state of S is changed from :

A. $+4 \rightarrow 0$

B. $+4$ to $+2$

C. $+4$ to $+6$

D. $+6$ to $+4$

Answer: C

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133. The oxidation number of sulphur in $H_2S_2O_8$ is :

- A. +2
- B. +6
- C. +7
- D. +14

Answer: B

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134. Oxidation number of sulphur in Na_2SO_4 is:

- A. +2
- B. +4
- C. +6

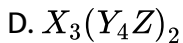
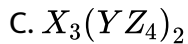
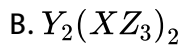
D. -2

Answer: C



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135. A compound contains atoms X, Y, Z. The oxidation number of X is $+2$, Y is $+5$, and Z is -2 . The possible formula of the compound is :



Answer: C



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136. Oxidation number of carbon in KCN is :

A. +2

B. -2

C. +1

D. +3

Answer: A



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137. The oxidation number of Ni in $K_4[Ni(CN)_6]$ is:

A. +6

B. +4

C. +2

D. +3

Answer: C

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138. Oxidation number of nitrogen in $AgNO_3$ is :

A. +5

B. -3

C. +3

D. -2

Answer: A

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139. In the reaction ,

$As_2S_3 + HNO_3 \rightarrow H_3AsO_4 + H_2SO_4 + NO$, the element oxidised is/are:

A. As only

B. S only

C. N only

D. As and S both

Answer: D

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140. One gas bleaches the colour of the flowers by reduction while the other by oxidation. The gases are:

A. CO , Cl_2

B. H_2S , Br_2

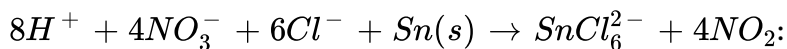
C. SO_2 , Cl_2

D. NH_3 , SO_3

Answer: C

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141. Which is the reducing agent in the reaction. The gases are :



A. Sn(s)

B. Cl^-

C. NO_3^-

D. $NO_2(g)$

Answer: A

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142. The conversion of PbS to Pb is :

A. Dissociation

B. Oxidation

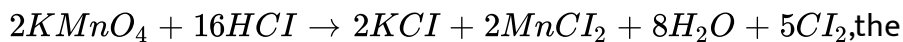
C. Reduction

D. Electrolysis

Answer: C

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143. In the reaction,



the reduction product is :

A. Cl_2

B. $MnCl_2$

C. KCl

D. H_2O

Answer: B

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144. Ozone tails mercury. The reaction isof Hg:

- A. Reduction
- B. Oxidation
- C. Substitution
- D. None of these

Answer: B



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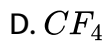
145. The maximum oxidation number of transition metals may be :

- A. +4
- B. +6
- C. +8
- D. +10

Answer: C

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146. Carbon is in the lowest oxidation state in :



Answer: A

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147. In sodium hydride, oxidation state of sodium is :

A. Zero

B. +1

C. -1

D. +2

Answer: B



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148. The oxidation number of iodine in IF_5 is :

A. +5

B. -5

C. -1

D. +1

Answer: A



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149. What is the O.N. of Mn in K_2MnO_4 :

A. +4

B. +6

C. +2

D. +8

Answer: B



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150. With which element oxygen shows positive oxidation state in its compounds :

A. Na

B. Cl

C. N

D. F

Answer: D

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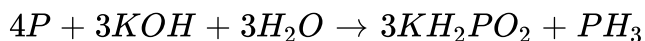
151. The decomposition of $KClO_3$ to KCl AND O_2 on heating is an example of :

- A. Intermolecular redox change
- B. Intramolecular redox change
- C. combination change
- D. None of the above

Answer: B

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152. In the reaction,



- A. P is oxidised only
- B. P is reduced only
- C. P is oxidised as well as reduced
- D. None of these

Answer: C

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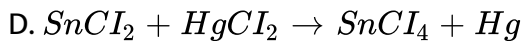
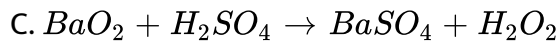
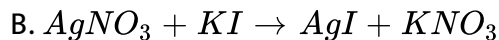
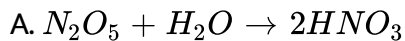
153. In which SO_2 acts as oxidant, while reacting with ?

- A. Acidified $KMnO_4$
- B. Acidified $K_2Cr_2O_7$
- C. H_2S
- D. Acidified C_2H_5OH

Answer: C

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154. Which of the following is redox reaction ?

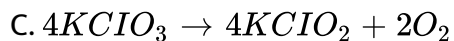
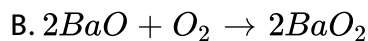
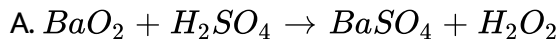


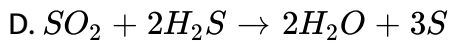
Answer: D



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155. Which is not a redox reaction ?





Answer: A

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156. Bleaching action of SO_2 is due to :

- A. Reduction
- B. Oxidation
- C. Hydrolysis
- D. Acidic nature

Answer: A

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157. Which among the following shows maximum oxidation state ?

A. V

B. Fe

C. Mn

D. Cr

Answer: C

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158. Which can act only as oxidising agent ?

A. Oxygen

B. Fluorine

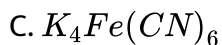
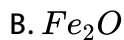
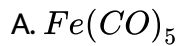
C. Iodine

D. H_2O_2

Answer: B

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159. In which iron has the lowest oxidation state ?

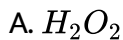


Answer: A



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160. Tailing of mercury can be removed by :



D. None of these

Answer: A



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161. $Co(s) + Cu^{2+}(aq) \rightarrow Co^{2+}(aq) + Cu(s)$. This reaction is :

A. Oxidation reaction

B. Reduction reaction

C. Redox reaction

D. None of the above

Answer: C



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162. The colour of $K_2Cr_2O_7$ changes from redorange to lemon yellow on treatment with KOH(aq.) because of :

- A. Reduction of Cr (vi) to Cr (III)
- B. Formation of dichromate hydroxide
- C. Conversion of dichromate into chromate ion
- D. Oxidation of potassium hydroxide to potassium peroxide

Answer: C



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163. Sulphurous acid can be used as:

- A. Oxidising agent
- B. Reducing agent
- C. Bleaching agent
- D. All of the above

Answer: D

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164. Which substance serves as a reducing agent in the following reactions,



A. H_2O

B. Ni

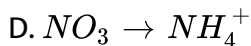
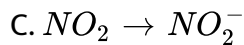
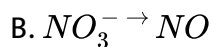
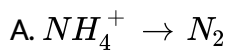
C. H^+

D. $\text{Cr} - 2\text{O}_7^{2-}$

Answer: B

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165. In which of the following processes nitrogen is oxidised ?

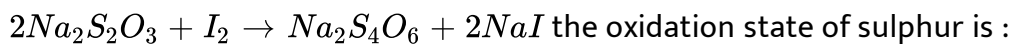


Answer: A



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166. In the reaction,



A. Decreased

B. Increased

C. Unchanged

D. None of these

Answer: B

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167. Starch iodide paper is used to test for the presence of :

- A. Iodine
- B. Iodine ion
- C. Oxidant
- D. Reductant

Answer: C

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168. The oxidation state of Ni in $Ni(Co)_4$ is:

- A. Zero
- B. +4
- C. +8

D. +2

Answer: A



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169. The number of mole of oxalate ions oxidised by one mole of acidified

MnO_4^- is:

A. $1/5$

B. $2/5$

C. $5/2$

D. 5

Answer: C



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170. How many mole of electrons are involved in the reduction of one mole of MnO_4^- ion in alkaline medium to MnO_3^- :

- A. 2
- B. 1
- C. 3
- D. 4

Answer: A



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171. When $SnCl_4$ is treated with excess HCl, the complex $[SnCl_6]^{2-}$ is formed. The oxidation state of Sn in this complex is :

- A. +6
- B. -2
- C. +4

D. -5

Answer: C



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172. Oxidation state of oxygen atom in potassium superoxide (KO_2) is

A. $1/2$

B. Zero

C. $+1/2$

D. -2

Answer: A



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173. When $KMnO_4$ is reduced with oxalic acid in acid medium, the oxidation number of Mn changes from :

- A. +7 to +4
- B. +6 to +4
- C. +7 to +2
- D. +4 to +2

Answer: C



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174. Oxidation number of chromium in $K_2Cr_2O_7$ is:

- A. +2
- B. +3
- C. +6
- D. -4

Answer: C

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175. The maximum oxidation state of chromium is :

A. +6

B. +4

C. +8

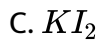
D. +7

Answer: A

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176. Iodine has highest oxidation number in the compound :

A. KIO_4



Answer: A



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177. Oxidation number of P in $P_2O_7^{4-}$:

A. +3

B. +4

C. +5

D. +6

Answer: C



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178. The oxidation state of S in $Na_2S_4O_6$ is:

- A. +2
- B. +4
- C. +6
- D. +2.5

Answer: D



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179. In which of the following oxidation number of chlorine is +5 is :

- A. $HClO$
- B. $HClO_2$
- C. $HClO_3$
- D. $HClO_4$

Answer: C

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180. Number of electrons involved in the reduction of $Cr_2O_7^{2-}$ ion in acidic solution to Cr^{3+} is:

A. 3

B. 4

C. 2

D. 6

Answer: D

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181. A compound of Xe and F is found to have 53.3 % Xe in this compound is :

A. -4

B. zero

C. $+4$

D. $+6$

Answer: D



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182. An element which never has a positive oxidation number in any of its compounds is:

A. Boron

B. Oxygen

C. Chlorine

D. Fluorine

Answer: D

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183. The oxidation number of phosphorus in $Ba(H_2PO_2)_2$ is :

A. +3

B. +2

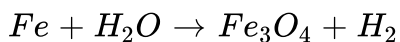
C. +1

D. -1

Answer: C

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184. The number of electrons lost or gained during the change,



A. 2

B. 4

C. 6

D. 8

Answer: D

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185. Oxidation number of S in H_2SO_5 is:

A. +8

B. +2

C. +6

D. +4

Answer: C

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186. Oxidation number of Fe in Fe_3O_4 are :

A. +2, and +3

B. +1 and +2

C. +1 and +3

D. None

Answer: A



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187. Pb shows oxidation state of

A. +3, +4

B. +1, +2

C. +2, +4

D. Only +4

Answer: C

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188. Carbon reacts with oxygen to form two oxides, CO and CO_2 . This is because :

- A. Carbon has two crystalline forms
- B. Carbon has two oxidation states
- C. Oxygen donates as well as accepts electrons
- D. Oxygen has a strong affinity for carbon.

Answer: B

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189. The oxidation number and covalency of sulphur in the sulphur molecule (S_8) are respectively :

A. 0 and 2

B. +6 and +8

C. 0 and 8

D. +6 and 2

Answer: A



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190. The most common oxidation state of an element is -2. The number of electrons present in its outer most shell is:

A. 2

B. 4

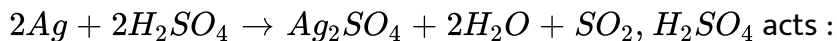
C. 6

D. 8

Answer: C

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191. In the reaction:



- A. Oxidising agent
- B. Reducing agent
- C. Dehydrating agent
- D. None of these

Answer: A

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192. In acidic medium, the reaction, $MnO_4^{1-} \rightarrow Mn^{2+}$ involves :

- A. Oxidation by 3 electrons
- B. Reduction by 3 electrons

C. Oxidation by 5 electrons

D. Reduction by 5 electrons

Answer: D

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193. Which can have both +ve and -ve oxidation states?

A. F

B. I

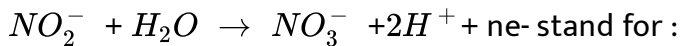
C. Na

D. He

Answer: B

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194. In the equation,



A. 1

B. 2

C. 3

D. 4

Answer: B



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195. Which is not an oxidising agent ?

A. KClO_3

B. O_2

C. $\text{C}_6\text{H}_{12}\text{O}_6$

D. $\text{K}_2\text{Cr}_2\text{O}_7$

Answer: C

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196. $LiAlH_4$ is used as :

- A. Oxidising agent
- B. Reducing agent
- C. A mordant
- D. Water softner

Answer: B

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197. The oxidation state of phosphorus varies from :

- A. -1 to $+1$

B. -3 to $+3$

C. -3 to $+5$

D. -5 to $+1$

Answer: C



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198. Respiration is :

A. Oxidation

B. Reduction

C. Both (a) and (b)

D. None of these

Answer: C



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199. In $N_2 + 2H_2O \rightarrow NH_4^+ + NO_2^-$, N is:

- A. Oxidised
- B. Reduced
- C. Both (a) and (b)
- D. None of these

Answer: C

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200. HBr and HI reduce H_2SO_4 , HCl can reduce $KMnO_4$ and HF can reduce :

- A. H_2SO_4
- B. $K_2Cr_2O_7$
- C. $KMnO_4$
- D. None of these

Answer: D

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201. The most stable oxidation state of copper is :

A. +2

B. +1

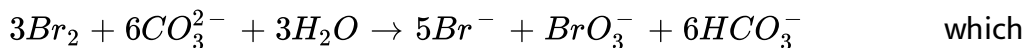
C. +3

D. +4

Answer: A

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202. In the reaction _____ ,



statement is correct ?

- A. Br_2 is oxidised
- B. Br_2 is reduced
- C. Br_2 is neither oxidised nor reduced
- D. Br_2 is oxidised as well as reduced

Answer: D

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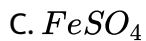
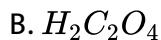
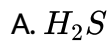
203. In which reaction H_2O_2 acts reducing agent?

- A. $Ag_2O + H_2O_2 \rightarrow 2Ag + H_2O + O_2$
- B. $2KI + H_2O_2 \rightarrow 2KOH + I_2$
- C. $PbS + 4H_2O_2 \rightarrow PbSO_4 + 4H_2O$
- D. $H_2O_2 + SO_2 \rightarrow H_2SO_4$

Answer: A

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204. Which acts as a powerful oxidising agent ?

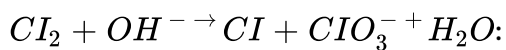


Answer: D



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205. In the reaction,



A. Chlorine is oxidise

B. Chlorine is reduced

C. Chlorine is oxidised as well as reduced

D. Chlorine is neither oxidised nor reduced

Answer: C

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206. The oxidation state of +3 for phosphorous is in :

A. Hypophosphorous acid

B. Meta-Phosphoric acid

C. Ortho-phosphoric acid

D. Phosphorous acid

Answer: D

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207. As the oxidation state for any metal increases, the tendency to show ionic nature:

- A. Decreases
- B. Increases
- C. Remains same
- D. None of these

Answer: A



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208. Which is a redox reaction ?

- A. $2CuI_2 \rightarrow 2CuI + I_2$
- B. $NaCl + AgNO_3 \rightarrow AgCl + NaNO_3$
- C. $NH_4Cl + NaOH \rightarrow NH_3 + NaCl + H_2O$
- D. $Cr_2(SO_4)_3 + 6KOH \rightarrow 2Cr(OH)_3 + 3K_2SO_4$

Answer: A

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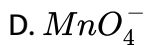
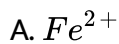
209. Fluorine is a strong oxidising agent because :

- A. It has several isotopes
- B. It is very small and has 7 electrons in valency shell
- C. Its valency is one
- D. It is the first member of the halogen series

Answer: B

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210. When an acidified solution of ferrous ammonium sulphate is treated with $KMnO_4$ solution, the ion which is oxidised is:



Answer: A



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211. In the conversion of $K_2Cr_2O_7$ to K_2CrO_4 the oxidation number of chromium :

A. Increases

B. Remains the same

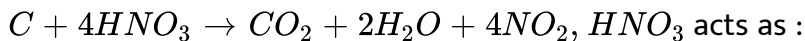
C. Decreases

D. None of these

Answer: B

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212. In the reaction,

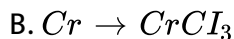
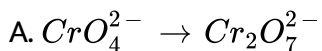


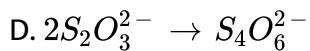
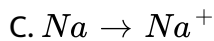
- A. An oxidising agent
- B. An acid
- C. An acid as well as oxidising agent
- D. A reducing agent

Answer: A

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213. Which reaction involves oxidation nor reduction ?





Answer: A

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214. The reaction $KI + I_2 \rightarrow KI_3$ shows:

A. Oxidation

B. Reduction

C. Complex formation

D. All of these

Answer: D

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215. $KMnO_4$ act as an oxidising agent in :

- A. Acidic medium
- B. Alkaline medium
- C. Neutral medium
- D. All of the above media

Answer: D



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216. The oxyacid which acts both as oxidising and reducing agent is :

- A. H_2SO_4
- B. H_3PO_4
- C. HNO_2
- D. $HClO_4$

Answer: C



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217. In the reaction of O_3 and H_2O_2 the later acts as:

- A. Oxidising agent
- B. Reducing agent
- C. Bleaching agent
- D. Both oxidising and bleaching agent

Answer: A



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218. Fluorine exhibits only -1 oxidation state, while iodine exhibits oxidation states of $-1, +1, +3, +5$ and $+7$. This is due to :

- A. Fluorine being a gas
- B. Available d-orbitals in iodine
- C. Non-availability of d-orbitals in iodine
- D. None of the above

Answer: B

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219. The characteristic oxidation number of metals in free state is:

- A. Zero
- B. One
- C. -1
- D. Any number

Answer: A

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220. Magnesium reacts with acids producing hydrogen and corresponding magnesium salts. In such reactions magnesium undergoes :

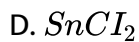
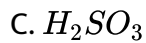
- A. Oxidation
- B. Reduction
- C. Nither oxidation nor reduction
- D. Simple dissolution

Answer: A

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221. The strongest reducing agent among the following is :

- A. HNO_2
- B. H_2S



Answer: A

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222. Strongest reducing agent among the following is:

A. K

B. Mg

C. Al

D. Ba

Answer: A

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223. The oxidation state of iron in sodium nitroprusside is :

A. +2

B. +1

C. Zero

D. +3

Answer: A



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224. The oxidation number of arsenic in arsenate is:

A. +5

B. +4

C. +6

D. +2

Answer: A

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225. Oxidation number of Mn in K_2MnO_4 and $MnSO_4$ are respectively :

A. +7 and +2

B. +6 and +2

C. +5 and +2

D. +2 and +6

Answer: B

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226. Oxidation number of chlorine in chlorine heptaoxide is :

A. +1

B. +4

C. +6

D. +7

Answer: D



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227. The oxidation state of I in $H_4IO_6^-$ is:

A. +7

B. -1

C. +5

D. +1

Answer: A



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228. The oxidation number of N in $N_2H_5^+$ is :

A. -2

B. $+3$

C. $+2$

D. -3

Answer: A



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229. In which compound does oxygen has an oxidation state of $+2$:

A. H_2O_2

B. H_2O

C. OF_2

D. CO

Answer: C

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230. The oxidation state of hydrogen in CaH_2 is :

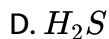
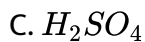
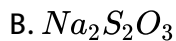
- A. +1
- B. -1
- C. Zero
- D. +2

Answer: B

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231. Sulphur has the highest oxidation state in :

- A. SO_2



Answer: B

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232. In the conversion of Br_2 to BrO_3^- , the oxidation state of bromine changes from :

A. 0 to +5

B. -1 to 5

C. 0 to -3

D. +2 to +5

Answer: A

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233. In the reduction of dichromate by Fe(II) , THE number of electrons involved per chromium atom is:

- A. 3
- B. 1
- C. 2
- D. 4

Answer: A



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234. For reducing one mole of MnO_4^- ion to Mn^{2+} ions, the number of Farady of electricity is :

- A. 5
- B. 1

C. 1.5

D. 4

Answer: A

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235. The violent reaction between sodium and water is an example of :

A. Reduction

B. Oxidation

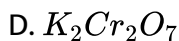
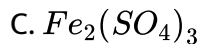
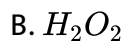
C. Redox reaction

D. Neutralisation reaction

Answer: C

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236. The compound that can work both as an oxidizing and reducing agent is :



Answer: B



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237. Which of the following is redox reaction ?

A. Intermolecular redox

B. Intramolecular redox

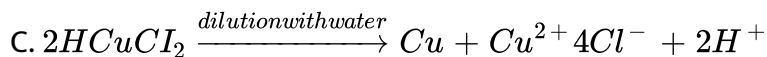
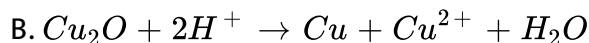
C. Auto redox

D. All of the above

Answer: D

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238. Which of the following change represents is desproportionation reaction(s) ?



D. All of the above

Answer: D

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239. When Fe metal is rusted then Fe is:

- A. Oxidised
- B. Reduced
- C. Hydrolysed
- D. Precipitated

Answer: A

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240. When SO_2 is passed through acidified solution of potassium dichromate, then chromium sulphate is formed. The change in oxidation number of chromium is :

- A. +4 to +2
- B. +5 to +3
- C. +6 to +3
- D. +7 to +2

Answer: C

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241. The oxidation number of Fe in $K_4[Fe(CN)_6]$ is :

A. +2

B. +3

C. +4

D. +6

Answer: A

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242. HCO_3^- contains carbon in the oxidation state :

A. +5

B. +1

C. +4

D. +6

Answer: C



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243. In nitric oxide (NO) the oxidation state of nitrogen is :

A. -2

B. +1

C. -1

D. +2

Answer: D



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244. In which of the following N has lowest oxidation number ?

A. NO

B. NO_2

C. N_2O

D. N_2O_5

Answer: C



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245. Oxidation number of S in $S_2O_3^{2-}$:

A. +2

B. -2

C. 4

D. Zero

Answer: A

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246. Oxidation number of Fe in $K_3[Fe(CN)_6]$ is:

A. +2

B. +3

C. +4

D. +1

Answer: B

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247. The oxidation number of P in KH_2PO_2 is:

A. +1

B. +3

C. -3

D. +5

Answer: A



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248. The oxidation state of Fe in iron penta carbonyl is:

A. Zero

B. 1

C. 2

D. 2.5

Answer: A



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249. The oxidation state of nitrogen in NH_4NO_3 is:

A. -3 and $+5$

B. $+3$ and $+5$

C. $+5$

D. $+3$

Answer: A



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250. Oxidation number of As atom in H_3AsO_4 is :

A. $+5$

B. $+6$

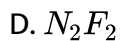
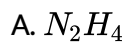
C. $+4$

D. -3

Answer: A

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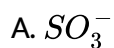
251. Nitrogen has fractional oxidation number in :

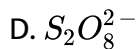
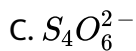


Answer: C

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252. Iodine oxidises $S_2O_3^{2-}$ ion to:

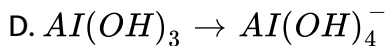
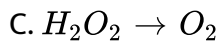
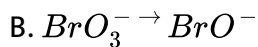
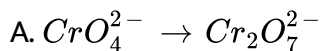




Answer: C

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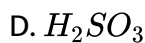
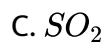
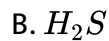
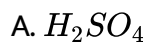
253. Which change requires a reducing agent :



Answer: B

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254. A sulphur containing species that cannot be an oxidising agent is:



Answer: B

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255. Which can act only as oxidising agent ?



Answer: D

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256. In which case $+1$ oxidation state is stable \leq than $+3$:

A. Ga

B. Al

C. Tl

D. B

Answer: C

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257. Stannous chloride gives a white precipitate with a solution of mercuric chloride. In this process mercuric chloride is:

A. Oxidised

B. Reduced

C. Converted into a complex compound containing Sn and Hg

D. Converted into a chloro complex of Hg

Answer: B

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258. In the reaction,

$H_2O_2 + Na_2CO_3 \rightarrow Na_2O_2 + CO_2 + H_2O$, the substance undergoing oxidation is :

A. H_2O_2

B. Na_2CO_3

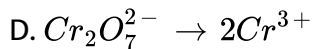
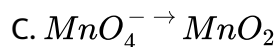
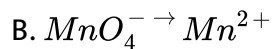
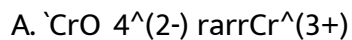
C. Na_2O_2

D. None of these

Answer: D

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259. The process involving transfer of five electrons is:



Answer: A

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260. Oxidation state of oxygen in H_2O_2 is

A. -2

B. -1

C. $+1$

D. $+2$

Answer: C

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261. The oxidation number of phosphorus in $Mg_2P_2O_7$ is:

A. $+5$

B. -5

C. $+6$

D. -7

Answer: A

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262. In CH_2Cl_2 , the oxidation number of C is :

- A. -4
- B. $+2$
- C. Zero
- D. $+4$

Answer: C



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263. Which compound has oxidation number of carbon equal to zero ?

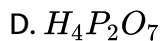
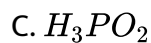
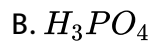
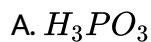
- A. C_6H_6
- B. CH_3
- C. C_2H_4
- D. $C_6H_{12}O_6$

Answer: D



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264. Oxidation state of +1 for phosphorus is found in:



Answer: C



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265. Chlorine has +1 oxidation state in :

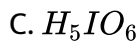
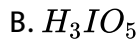




Answer: C

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266. Iodine has +7 oxidation state in :



D. All

Answer: D

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267. If three electrons are lost by a metal ion M^{3+} , its final oxidation number will be :

A. Zero

B. +6

C. +2

D. +4

Answer: B



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268. Oxidation number of N in N_3H is:

A. -3

B. +3

C. Zero

D. -1/3

Answer: D

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269. The oxidation number of N in NH_3 is:

- A. -3
- B. $+3$
- C. Zero
- D. 5

Answer: A

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270. Oxidation number of S S_2Cl_2 is:

- A. $+1$

B. +6

C. Zero

D. -1

Answer: A



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271. Oxidation state of chlorine is highest the compound :

A. Cl_2

B. HCl

C. Cl_2O

D. Cl_2O_7

Answer: D



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272. Which compound shows highest oxidation number of chlorine ?

A. HCl

B. KClO

C. KClO_3

D. KClO_4

Answer: D



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273. The oxidation state of Fe in Fe_3O_4 is:

A. +3

B. +6

C. +8/3

D. +2

Answer: C

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274. What is the oxidation number of nitrogen in nitrous oxide.

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275. What is the oxidation number of Mn in K_2MnO_4 ?

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