CHEMISTRY

BOOKS - MODERN PUBLICATION

GROUP 16 ELEMENTS

Excercise

1. one mole of sulphur contains _____ atoms .

A. 3

B. 4

C. 6

D. 8

Answer: D

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2. When SO_2 is passed through a solution of H_2S in water

A. H_2SO_3 is produced

B. H_2SO_3 is produced

C. sulphur precipitate is produced

D. non of these

Answer: C

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3. Which one of the following contains acetic acid:

A. oxalic acid

B. formic acid

C. sugar

D. Na_2CO_3

Answer: C

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4. Dacron is prepared by

A. He

B. O

C. Ne

D. N_2

Answer: A

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5. Tailing of mercury is due to formation of _____.

A. mercuric oxide

B. mercurous oxide

C. mercuric hydroxide

D. mercurous hydroxide

Answer: B

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6. Which substances chars when warmed with conc H_2SO_4 ?

A. carbohydrate

B. proteins

C. fats

D. hydro carbons

Answer: A

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7. The more electronegative element is :

A. 0 and -1

B. -1 and -2

C. -2 and 0

D. -2 and 1

Answer: B

8. Draw the structure of sulphuric acid. Draw simple flow diagram of contact process for the manufacturing of sulphuric acid.

A. Nil

B. V_2O_5

C. Pt

D. Fe

Answer: B

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9. Why Zn liberates Hydrogen gas when reacts with H_2SO_4 But sliver does not ?

A. Reducing agent

B. Dehydrating agent

C. Sulphonating agent

D. Highly viscous

Answer: A

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10. When a lead storage battery is discharged:

A. SO_2 is dissolved

B. Lead sulphate is consumed

C. Lead is formed

D. Sulphuric acid is consumed

Answer: D

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11. Sulphuric acid as used

A. it hydroleses the acid

B. it decomposes the acid

C. acid forms hydrates with water

D. acid decompes water

Answer: C

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12. Structure of IF_5 is

A. octahedral

B. trigonal bipyramidal

C. square planar

D. tetrahedral

Answer: B

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13. Fill in the blanks :The maximum covalency of sulphur is .....

A. 2

B. 4

C. 6

D. 8

Answer: C

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

A. OF_2

B. H_2O

C. H_2O_2

D. $HCLO$

Answer: C

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15. What is the shape of XeF_2 molecule ?

A. tetrahedral

B. linear

C. plane triangular

D. bent

Answer: D

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16. Ethers react with conc. H_2SO_4 to form

A. H_2SO_4

B. H_2SO_3

C. $H_2S_2O_8$

D. $H_2S_2O_7$

Answer: D

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17. Which of the following is as ester

A. H_2SO_4

B. SO_2

C. H_2S

D. HNO_3

Answer: B

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18. Ethers react with conc. H_2SO_4 to form

A. phosphorus acid

B. orthophosphoric acid

C. metaphosphoric acid

D. phrophosphoric

Answer: B

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19. Which of the following is most basic

A. 2,2

B. 4,2

C. 2,4

D. 4,4

Answer: C

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20. Arrange the following

In the increasing order of boiling point

$C_2H_5OH, (CH_3)_2NH, C_2H_5NH_2$

A. $H_2Te \text{gt} H_2Sc \text{gt} H_2S \text{gt} H_2O$

B. $H_2O \text{gt} H_2S \text{gt} H_2Se \text{gt} H_2Te$

C. $H_2S \text{gt} H_2O \text{gt} H_2Se \text{gt} H_2Te$

D. $H_2Se \text{gt} H_2S \text{gt} H_2Te \text{gt} H_2S$

Answer: B

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21. Which of the following bonds will be non-polar ?

A. SF_4

B. SiF_4

C. XeF_4

D. BF_4

Answer: A

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22. How many types of solutions are formed ?

A. 2

B. 4

C. 3

D. 5

Answer: A

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23. Heating a mixture of Cu_2O and Cu_2S will give

A. Cu_2SO_3

B. $CuO+CuS$

C. $Cu+SO_3$

D. $Cu+SO_2$

Answer: D

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24. Which of the following compounds has the highest boiling point?

A. O_2^+

B. `O_(2)^-2

C. H_2S

D. O_2

Answer: A

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25. Which of the following compound has the smallest bond angle in the molecule ?

A. SO_2

B. H_2O

C. H_2S

D. O_2

Answer: C

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26. Which of the following has largest size ?

A. O_3

B. NO_3^-

C. S_2

D. NO_2^+

Answer: D

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27. Predict the products of electrolysis in each of the following ?

A dilute solution of H_2SO_4 with platinum electrodes.

A. S+O_2 rarr SO_2

B. $2SO_2$+O_2 rarr 2SO_(3)`

C. SO_2+H_2O rarr H_2SO_4

D. N_2+3H_2 rarr 2NH_3

Answer: B

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28. H_2S is passed through acidified solution of $CuSO_4$ and black ppt is formed. This is due to:

A. Oxidation of Cu^2+

B. Reduction of Cu^2+

C. both (a) and (b)

D. none of these

Answer: D

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29. H_2SO_4 has greater affinity for water because

A. it hydrolysis the acid

B. decomposes the acid

C. acid forms hydrate with water

D. acid decomposes water

Answer: C

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30. When formic acid is heated with conc. H_2SO_4 the gas evolved is :

A. SO_2

B. NH_3

C. CO_2

D. CO

Answer: D

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31. Hybridization of .S. in SF_6 is:

A. sp^3d^2

B. sp^3 d

C. sp^3

D. sp^2

Answer: B

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32. Which statement is wrong about chloroform:

A. It is a covalent compound

B. It is a gas with bad smell

C. It is a weak base in water

D. It is strong reducing agent than H_2O

Answer: C

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33. When natural rubber is heated with sulphur , it is called

A. vulcanisation

B. sulphonation

C. sulphurization

D. non of these

Answer: A

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34. The number of S-S bonds in sulphur trioxide trimer (S_3O_9) is:

A. 3

B. 2

C. 1

D. 0

Answer: D

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35. The decreasing order of boiling point is

A. $H_2O \text{gt} H_2S \text{gt} H_2Se \text{gt} H_2Te$

B. $H_2O \text{gt} H_2Te \text{gt} H_2Se \text{gt} H_2S$

C. $H_2O \text{gt} H_2Se \text{gt} H_2Te \text{gt} H_2S$

D. $H_2O \text{gt} H_2S \text{gt} H_2Te \text{gt} H_2Se$

Answer: B

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36. Which of the following has S-S bond?

A. $(NO_3)^-$

B. $(SO_3)^{-2}$

C. $(BO_3)^{-3}$

D. $(CO_3)^{-2}$

Answer: B

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37. Which of the following has the maximum catenation property?

A. S

B. Se

C. Te

D. 0

Answer: A

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38. When a lead storage battery is discharged:

A. SO_2 is evolved

B. $PbSO_4$ is consumed

C. Lead is formed

D. H_2SO_4

Answer: D

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39. (i) In the titration of Fe^{2+} ions with $KMnO_4$ in acidic medium, dil. H_2SO_4 is used but not the dil. HCl. Why ?

(ii) Transition metals and their compounds act as catalyst explain.

A. in lead storage batteries

B. in making fertilizers

C. as a dehydrating agent

D. in all of these

Answer: D

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40. When conc. H_2SO_4, in added to dry KNO_3, brown fumes are evolved. These fumes are

A. SO_2

B. H_2S

C. H_2SO_4

D. SO_3

Answer: D

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41. Which gas turns lead acetate paper black:

A. SO_2

B. H_2S

C. H_2SO_4

D. SO_3

Answer: B

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42. Which of the following has the highest value of energy gap?

A. $O - O$

B. $S - S$

C. $Se - Se$

D. $Te - Te$

Answer: B

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43. Number of hydroxyl groups present in pyrosulphuric acid is:

A. 1

B. 2

C. 3

D. 4

Answer: A

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44. Oxygen molecule is:

A. Paramagnetic

B. Diamagnetic

C. Ferromagnetic

D. Ferrimagnetic

Answer: A

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45. Ozone reacts with

A. IO_2

B. $I_2 \_ O(3)$

C. $I_2 \_ O(4)$

D. $I_4 \_ O(9)$

Answer: D

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46. ___is used as catalyst by Ostwald process for manufacture of nitric acid.

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47. ____is used as cataylst in the manufacture of H_2SO_4 acid by contact process.

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48. Which is soluble in water :

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49. $SO_2 + 2H_2S \rightarrow \_\ \_\_ + 2S$

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50. Oxygen and Ozone are ____.

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51. Why phenol is acidic in nature ?

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52. An instructor has a question bank consisting of 300 easy true/false questions, 200 difficult true/false questions, 500 easy multiple choice questions and 400 difficult multiple choice questions. If a question is selected at random from the question bank, then what is the probability that it will be an easy question, given that it is a multiple choice questions?

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53. hydrogen-oxygen cell is a____ cell

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54. Oxygen atom of ether is:

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55. hydrogen-oxygen cell is a____ cell

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56. Electron affinity of noble gases is :

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57. Benzaldoxime exists in how many forms :

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58. $2NO + O_2 \rightarrow NO_2$ is _____ order reaction.

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59. Fe_3O_4 is known as _____ .

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60. Shape of XeF_6 molecule is_____.

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61. Write all the members of oxygen family.

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62. Which the following hydrides of oxygen family shows the lowest boiling point?

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63. Name two allotropic forms of sulphur.

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64. Which is soluble in water :

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65. Ammonia is:

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66. Which of the following statement (s) is/are correct ? When a mixture of NaCl and $K_2Cr_2O_7$ is gently warmed with conc. H_2SO_4.

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67. $SO_2 + 2H_2S \rightarrow \_\ \_\_ + 2S$

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68. The electronic configuration of halogen is

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69. Oxygen and Ozone are ____.

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70. Write the electronic configuration of cerium.

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71. The metallic character of the elements to group 14:

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72. Ionic hydrides are formed by:

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73. Write the formulae of the monomers of teflon.

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74. What is soap?

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75. Give two examples of ionic solids.

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76. Give two examples of ionic solids.

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77. Bleaching action of SO_2 is due to :

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78. What do you mean by tailing of mercury ?

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79. Write some uses of bromine.

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80. What happens when H_2S reacts with $CuSO_4$ in acidic medium ?

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81. Write two uses of ClO_3.

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82. When ammonia is dissolved in water:

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83. The anhydride of HNO_2 , is

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84. H_2SO_4 acid is known as "king of chemicals". Explain.

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85. Evaporation causes cooling. Explain.

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86. Name the method of manufacturing H_2SO_4.

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87. Name two allotropic forms of sulphur.

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88. Write some uses of bromine.

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89. Arrange the basicity in increasing order of

TeO_2, SO2 and SeO_2

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90. Which halogen does not form oxyacid ?

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91. Write balanced equation for the reaction of methyl iodide with $AgOH, C_2H_5\overline{O}\overset{+}{N}a, CH_3CO\overline{O}\overset{+}{A}g$ and $AgNO_2$.

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92. Write the equation for the reaction between CI_2 and dil. NaOH solution.

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93. What happens when: H_2S gas is passed through $CuSO_4$ solution.

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94. Write some uses of sulphur dioxide.

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95. What is Oleum ? Write its formula.

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96. Write various oxidation states of sulphur.

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97. Give one reaction in which H_2SO_4acts as a dehydrating agent .

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98. Which have high boiling points:

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99. Boron differs from the other members of group 13 because it :

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100. What is the bond angle in the molecule of ammonia ?

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101. Why SO_2 gas cannot be collected over water?

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102. Write two uses of Helium.

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103. What is the bond angle between two hybrid bonds in sp hybridisation ?

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104. Sulphur in SO_2 is :

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105. Explain green house effect.

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106. $BiCl_3$, is more stable than $BiCl_5$ Why?

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107. Oxygen is gas but sulphur is solid because:

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108. What is allotropy ?

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109. What is the action of conc. H_2SO_4 on potassium bromide? Give equation.

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110. What is shape of O_3 molecule ?

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111. Write the structure of XeO_2F_2 molecule .

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112. Ozone is tested by

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113. What is the action of O_3 on acidified $FeSO_4$ solution ?

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114. Group 16 elements are

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115. What happens when phosphorous acid is heated ?

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116. What happens when: H_2S gas is passed through $CuSO_4$ solution.

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117. What happens when H_2S gas is passed through ammoniacal solution of $MnCl_2$

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118. What happens when H_2S is passed through aqueous solution of $ZnCl_2$? Give equation.

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119. An explosion takes place when conc. H_2SO_4 is added to $KMnO_4$. Which of the following is formed ?

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120. What happens when H_2S gas is passed through chlorine water ?

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121. What happens when SO_2 gas is passed through H_2S dissolved in water ?

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122. Describe the preparation of Ozone.

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123. Ozone hole is the

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124. Explain the structure of ozone molecule.

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125. Explain the structure of SO_2 molecule.

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126. Write some uses of sulphur dioxide.

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127. Explain that bleaching action of CL_2 is permanent, while that of SO_2 is temporary.

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128. Physical properties of :

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129. Explain with equation how does ozone react with

Hydrogen peroxide

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130. Which oxide of sulphur can act as an oxidising as well as reducing agent?

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131. Write the structure of XeO_2F_2 molecule .

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132. By adding water to the solution, its:

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133. What gas is produced when conc. H_2SO_4 reacts with common salt at room temperature? Write equation.

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134. What happens when SO_2 is passed through chlorine water ?

Watch Video Solution

135. What happens when H_3PO_3 is heated?

Watch Video Solution

136. What happens when acetone reacts with :

NH_2OH

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137. How many coulombs of electricity are required for oxidation of 1 mol of H_2O to O_2?

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138. Why sulphur is not diatomic like oxygen?

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139. Which is not hydrolysed ?

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140. Which gas is used to improve the atmosphere of crowded places:

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141. Why SI system is called a rational system Explain.

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142. SF_6 is known but SCl_6 is not. Why?

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143. Which has zero dipole moment?

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144. Account for the following:

Sulphur has a greater tendency for catenation than oxygen.

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145. Oxygen is gas but sulphur is solid because:

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146. Which acts as a powerful oxidising agent ?

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147. How would you account for the following?

The two O–O bond lengths in the ozone molecule are equal.

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148. Oxygen is gas but sulphur is solid because:

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149. Explain why neon is monoatomic ?

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