

CHEMISTRY

BOOKS - ARIHANT PUBLICATION

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AMMONIA , SULPHUR DIOXIDE, HYDROGEN SULPHIDE AND HYDROGEN CHLORIDE

Exam Booster For Cracking Exam

1. Ammonia can be dried by

A. conc. H_2SO_4

B. P_2O_5

C. anhydrous $CaCl_2$

D. None of these

Answer: D



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2. Ammonia is

A. polar solvent

B. non-polar solvent

C. paramagnetic

D. diamagnetic

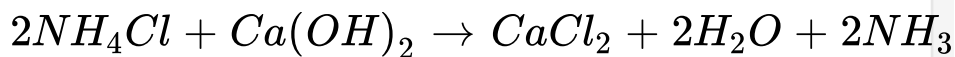
Answer: A



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3. How is ammonia manufactured industrially?

A.



B. By passing an electric discharge in a mixture of

N_2 and H_2

C. By reducing the by product nitric acid

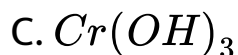
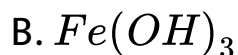
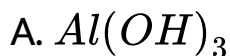
D. By passing a mixture of N_2 and H_2 under high pressure and moderate temperature over a catalyst

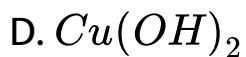
Answer: D



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4. Substance soluble in ammonia is





Answer: D



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5. With Nessler's reagent ammonia gives

- A. white precipitate
- B. violet precipitate
- C. blue precipitate
- D. brown precipitate

Answer: D



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6. Ammonia is soluble in water because it is

A. a polar molecule

B. an acid

C. a base

D. a single covalent compound

Answer: A



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7. Which does not form complex compounds with NO_3 ?

A. Ag

B. Cu

C. Cd

D. Pb

Answer: D



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8. Ammonia was synthesised by

A. Priestley

B. Scheele

C. Dalton

D. Raman

Answer: A

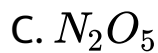


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9. Oxidation of ammonia yield

A. NO_2

B. N_2O



Answer: D



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10. A compound of nitrogen which is explosive is

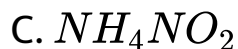
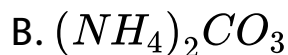
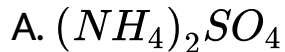


Answer: A



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11. Ammonium compound which on heating does not give NH_3 is



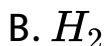
Answer: D



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12. Magnesium on burning in air forms a powder which reacts with water giving a gas which turns red litmus blue and forms white fumes with conc. HCL.

This gas is



Answer: C



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13. Which gas forms base with water?

A. HCl

B. SO_2

C. NH_3

D. H_2S

Answer: C



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14. NH_3 gas can be collected by the displacement of

A. Mercury

B. water

C. brine

D. conc. H_2SO_4

Answer: A



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15. The gas which turns red litmus blue and is highly soluble in water is

A. NH_3

B. Cl_2

C. SO_2

D. H_2

Answer: A



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16. Magnesium nitride reacts with water giving

A. NO_2

B. N_2O_3

C. NH_3

D. NO

Answer: C



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17. The gas which is highly soluble in water and turns red litmus blue is

A. N_2

B. SO_2

C. NH_3

D. O_2

Answer: C



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18. Ammonia can not be collected over water because

- A. It reacts with water
- B. It is soluble in water
- C. It explodes in water
- D. None of these

Answer: B



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19. Which of the following gas is lighter than air?

A. HCl

B. H_2S

C. NH_3

D. HF

Answer: C



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20. When ammonium chloride is heated in a test tube and red litmus is placed at the mouth of the test

tube. It first turns blue and then red because

- A. the vapour of ammonium chloride are basic as well as acidic
- B. it first liberates NH_3 and then HCl gas
- C. It first liberates Cl_2 and then NH_3 gas
- D. It first liberates HCl gas and then NH_3

Answer: B



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21. A gas that cannot be collected over water is.

A. N_2

B. SO_2

C. O_2

D. PH_3

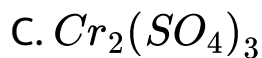
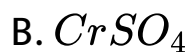
Answer: B



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22. By passing SO_2 in the solution of $K_2Cr_2O_7$, it turns green due to

A. K_2CrO_4



Answer: C



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23. When SO_2 is passed through acidic solution of potassium dichromate, then chromium sulphate is formed. Change in valency 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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24. Bleaching action of SO_2 is due to

A. reduction

B. oxidation

C. hydrolysis

D. its acidic nature

Answer: A

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25. In the laboratory, SO_2 is prepared by

A. dil. H_2SO_4 , and sodium sulphide

B. conc. H_2SO_4 and sodium sulphide

C. conc. H_2SO_4 and copper heated together

D. None of the above

Answer: C

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26. A solution of sulphur dioxide in water reacts with H_2S precipitating sulphur. Here sulphur dioxide acts as

A. an oxidising agent

B. a reducing agent

C. an acid

D. a catalyst

Answer: B



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27. Which is the correct statement?

- A. SO_2 is the anhydride of sulphurous acid.
- B. H_2S is the anhydride of hydrosulphuric acid
- C. NO_2 is the anhydride of nitric acid.
- D. HCl is the anhydride of hydrochloric acid.

Answer: A



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28. The reaction between copper and hot concentrated sulphuric acid produces

A. SO_2

B. SO_3

C. H_2

D. Cu^+ ions

Answer: A



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29. When SO_2 is passed through the acidic solution of $K_2Cr_2O_7$

A. the solution becomes blue

B. the solution becomes colourless

C. SO_2 is reduced

D. green $Cr_2(SO_4)_3$ is formed

Answer: D



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30. Sulphur dioxide reacts with PCl_5 to give

A. sulphuryl chloride

B. thionyl chloride

C. chloro sulphonic acid

D. sulphur trioxide and chlorine

Answer: B



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31. When SO_2 is passed through aqueous H_2S sulphur is precipitated. In this reaction, SO_2 acts as

- A. an oxidising agent
- B. a reducing agent
- C. an acid
- D. a complexing agent

Answer: A



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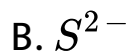
32. A substance on treatment with dil. H_2SO_4

liberates a colourless gas which produces

(i) turbidity with baryta water and

(ii) turns acidified dichromate solution green.

These reactions indicate the presence of



D. NO_2^-

Answer: C



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33. SO_2 will be obtained from the following

A. on reacting dil. H_2SO_4 with oxygen

B. on hydrolysing dil H_2SO_4

C. on reacting conc. H_2SO_4 with Na_2SO_3

D. All of the above

Answer: C



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34. SO_2 is not a

A. reducing agent

B. disinfectant

C. basic oxide

D. bleaching agent

Answer: C



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35. One gas bleaches flowers by reduction and the other gas by oxidation. These are

A. H_2S and Br_2

B. NH_3 and SO_3

C. CO_2 and Cl_2

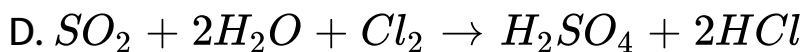
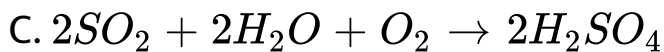
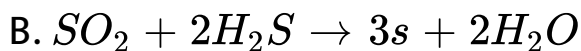
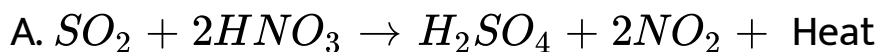
D. SO_2 and Cl_2

Answer: D



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36. Which reduction shows the oxidising nature of SO_2 ?



Answer: C



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37. In the presence of moisture SO_2

- A. can loss electrons
- B. can gain electrons
- C. can not work as oxidising agent
- D. can not work as reducing agent

Answer: A



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38. The bleaching by SO_2 is temporary because

- A. SO_2 absorbs colour for a short while and becomes dry

B. SO_2 combines with moisture and loses its effect

C. the oxidation takes place when bleached substance is kept in open air

D. None of the above

Answer: C



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39. When moist coloured flowers are added into a gas of SO_2 the flowers are decolourised because

A. SO_2 absorbs colouring matter

B. SO_2 oxidises the vegetable colouring matter

C. SO_2 reduces the vegetable colouring matter

D. SO_2 gives colourless oxidised product

Answer: C



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40. Which of the following gases produces maximum pollution?

A. SO_2

B. CO_2

C. CO

D. H_2S

Answer: C



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41. Pure H_2S gas is obtained by action of water on

A. Al_2S_3

B. FeS

C. rhombic S

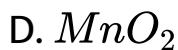
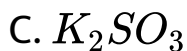
D. Colloidal S

Answer: A



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42. By passing H_2S in acidified $KMnO_4$ solution we get



Answer: B



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43. H_2S is far more volatile than water because

A. sulphur atom is more electronegative than oxygen atom

B. oxygen atom is more electronegative than sulphur atom

C. H_2O has bond angle of nearly 105°

D. hydrogen is loosely bonded with sulphur

Answer: B



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44. H_2S is a

- A. strong dibasic acid
- B. weak monobasic acid
- C. weak dibasic acid
- D. strong monobasic acid

Answer: C



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45. H_2S is used for precipitation of cations of

- A. 2nd group
- B. 2nd and 4th group
- C. 3rd and 4th group
- D. 4th and 5th group

Answer: B



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46. H_2S on complete combustion with oxygen forms mainly

A. H_2O and SO_2

B. H_2 and S

C. H_2 and SO_2

D. H_2O and S

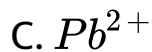
Answer: A



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47. The ion that cannot be precipitated by both HCl and H_2S is

A. Ag^+



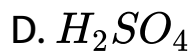
Answer: D



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48. Which of the following gases turns lead acetate paper black?



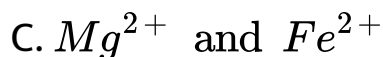
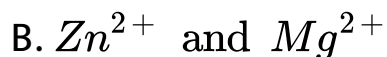


Answer: C



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49. Which of the following mixtures would give a black precipitate on passing H_2S through its acidified aqueous solution?



D. Mg^{2+} and Ni^{2+}

Answer: A



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50. A mixture of Cu^{2+} and Ni^{2+} can be separated for identification by

- A. passing H_2S in acidic medium
- B. passing H_2S in alkaline medium
- C. passing H_2S in neutral medium
- D. passing H_2S in dry mixture

Answer: A



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51. Passing H_2S through nitric acid produces

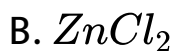
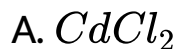
- A. plastic sulphur
- B. monoclinic sulphur
- C. rhombic sulphur
- D. amorphous sulphur

Answer: D



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52. H_2S does not produce metallic sulphide with



Answer: C



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53. The geometry of H_2S and its dipole moment are

A. angular and non-zero

B. angular and zero

C. linear and non-zero

D. linear and zero

Answer: A



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54. Which statement about H_2S is false?

A. It is a covalent compound.

B. It is a gas with bad smell.

C. It is a stronger reducing agent than water.

D. It is a weak base in water.

Answer: D



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55. In Kipp's apparatus, H_2S is prepared

A. continuously

B. by the action of dil H_2SO_4 on iron sulphide

C. by the action of dil. H_2SO_4 on copper sulphide

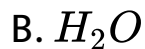
D. by the action of dil. HCl on iron sulphide

Answer: B



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56. Mark the compound which is acid?



Answer: A



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57. H_2S gas is obtained by treating H_2SO_4 with

A. NH_4Cl

B. FeS

C. $ZnCl_2$

D. $NaCl$

Answer: B



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58. A piece of filter paper dipped in $Pb(NO_3)_2$ solution turns black when it is brought in the gas

A. Cl_2

B. H_2S

C. SO_2

D. N_2

Answer: B



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59. H_2S gas turns litmus paper

A. blue

B. green

C. red

D. colourless

Answer: C

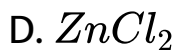
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60. Which of the following gives white precipitate with H_2S

A. $MnCl_2$

B. $CuSO_4$

C. $HgCl_2$

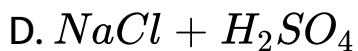
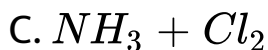
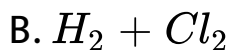
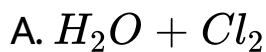


Answer: D



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61. In laboratory HCl gas is obtained by heating the following compounds



Answer: D



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62. Which of the following is most volatile?

A. HCl

B. HF

C. HBr

D. HI

Answer: A



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63. On heating manganese dioxide with conc. HCl, which of the following is evolved?

A. Chlorine

B. Oxygen

C. Chlorine monoxide

D. Hydrogen

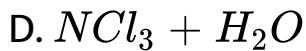
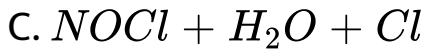
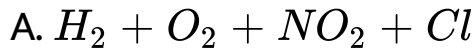
Answer: A



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64. In aqua-regia preparation ($3\text{HCl} + \text{HNO}_3 \rightarrow \dots$)

the resulting products are



Answer: C



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65. Which of the following gases can be dried by conc.

H_2SO_4 ?

A. HCl

B. HBr

C. HI

D. H_2S

Answer: A



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66. The type of bonding in HCl molecule is

A. pure covalent

B. polar covalent

C. highly polar

D. H-bonding

Answer: B



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67. Which of the following pair will give chlorine gas most quickly, upon reaction ?

A. HCl and $KMnO_4$

B. NaCl and H_3PO_4

C. NaCl and MnO_2

D. $CaCl_2$ and Br_2

Answer: A



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68. Hydrochloric acid at $25^\circ C$ is

A. ionic and liquid

B. covalent and liquid

C. ionic and gas

D. None of these

Answer: D



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69. The reaction of $KMnO_4$ and HCl results in

A. oxidation of Mn in $KMnO_4$ and production of



B. reduction of Mn in $KMnO_4$ and production of



C. oxidation of Mn in $KMnO_4$ and production of



D. reduction of Mn in $KMnO_4$ and production of



Answer: D



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70. When NaCl is heated with conc. H_2SO_4 and solid

$K_2Cr_2O_7$ we get

A. chromic chloride

B. chromous chloride

C. chromyl chloride

D. chromic sulphate

Answer: C

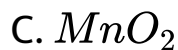


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71. One of the product of reaction between solid $KMnO_4$ and conc. HCl is

A. a red liquid

B. a greenish yellow gas



Answer: A



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72. It has been observed that gaseous HCl is very poor conductor of electricity. But a solutions of HCl in water is a good conductor. This is due to the reason that

A. water is a good conductor of electricity

B. HCl In water solution Ionises

C. a gas cannot conduct electricity but a liquid can

D. HCl gas does not obey Ohm's law where as the solutions does

Answer: B



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73. Dilute solution of HCl cannot be concentrated beyond 22.2% by boiling because

A. HCl is very volatile

B. HCl is very soluble in water

C. HCl gives a constant boiling mixture with water

D. HCl gives saturated solution at this concentration

Answer: C



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74. Aqua-regia contains conc. HCl and conc. HNO_3 in the ratio of

A. 1 : 3

B. 3 : 1

C. 1 : 3

D. 1 : 5

Answer: B



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75. HCl is dried by

A. P_4O_{10}

B. CaO

C. conc. HCl

D. None of the above

Answer: C



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76. $AgNO_3$ reacts with HCl to give a precipitate of AgCl which is of

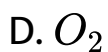
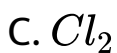
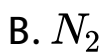
- A. green colour
- B. white colour
- C. yellow colour
- D. black colour

Answer: B



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77. Hydrogen chloride gas gives white fumes with



Answer: A



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