CHEMISTRY

BOOKS - FULL MARKS CHEMISTRY (TAMIL ENGLISH)

P - BLOCK ELEMENTS - II

Evaluate Yourself

1. Write the products formed in the reaction of nitric acid (both dilute and concentrated) with zinc.

(i) Zinc with Conc. HNO_3:

(ii) Zinc with Dil. HNO_3 :

Watch Video Solution

Textbook Evaluation I Choose The Best Answer

1. In which of the following, NH_3 is not used ?

A. Nessler's reagnet

B. Reagent for the analysis of IV group basic radical

C. Reagent for the analysis of III group basic radical

D. Tollen's reagent

Answer: A

Watch Video Solution

2. Which is true regarding nitrogen ?

A. least electrongegative element

B. has low ionisation enthalpy than oxygen

C. d - ortbitals available

D. ability to form $p\pi - p\pi$ bonds with itself

Answer: D

Watch Video Solution

3. An element belongs to group 15 and 3^{rd} period of the periodic table, its electronic configuration .

A. $1s^2 2s^2 3s^4$

B. $1s^2 2s^2 sp^3$

C. $1s^2 2s^2 2p^6 3s^2 3p^2$

D. $1s^2 2s^2 2p^6 3s^2 3p^3$

Answer: D

Watch Video Solution

4. Solid (A) reacts with strong aqueous NaOH liberating a foul smelling gas (B) which spontaneously burn in air giving smoky rings. A and B are respectively

A. P_4 (red) and PH_3

B. P_4 (white) and PH_3

C. S_8 and H_2S

D. P_4 (white) and H_2S

Answer: B

Watch Video Solution

5. In the brown ring test, brown colour of the ring is due to

A. a mixture of NO and NO_2

B. Nitroso ferrous sulphate

C. Ferrous nitrate

D. Ferric nitrate.

Answer: B

Watch Video Solution

6. On hydrolysis, PCl_5 gives _____

A. H_3PO_3 on heating undergoes self - oxidation reduction as :

B. PH_3

C. H_3PO_4

D. $POCl_3$

Answer: A

Watch Video Solution

7. P_4O_6 reacts with cold water to give

A. H_3PO_3

B. $H_4P_2O_7$

C. HPO_3

D. H_3PO_4

Answer: A

Watch Video Solution

8. The basicity of pyrophosphorous acid $(H_4P_2O_5)$ is

A. 4

B. 2

C. 3

D. 5

Answer: B

Watch Video Solution

9. The molarity of given orthophosphoric acid solution is 2M. its normality

A. 6N

B. 4N

C. 2N

D. none of these

Answer: A

Watch Video Solution

10. Assertion : bond dissociation energy of fluorine is greater than chlorine gas.

Reason: chlorine has more electronic repulsion than fluorine.

A. Both assertion and reason are true and reason is the correct explanation of assertion.

B. Both assertion and reason are true but reason is not the correct explanation of assertion.

C. Assertion is true but reason are false.

D. Both assertion and reason are false.

Answer: D

Watch Video Solution

11. Among the following, which is the strongest oxidizing agent ?

A. Cl_2

B. F_2

C. Br_2

D. I_2

Answer: B

Watch Video Solution

12. The correct order of the thermal stability of hydrogen halide is

A. $HI > HBr > HCl > HF$

B. $HF > HCl > HBr > HI$

C. $HCl > HF > HBr > HI$

D. $HI > HCl > HF > HBr$

Answer: B

Watch Video Solution

13. Which one of the following compounds is not formed ?

A. $XeOF_4$

B. XeO_3

C. XeF_2

D. NeF_2

Answer: D

Watch Video Solution

14. Most easily liquefiable gas is ..... .

A. Ar

B. Ne

C. He

D. Kr

Answer: C

View Text Solution

15. XeF_6 on complete hydrolysis produces

A. $XeOF_4$

B. XeO_2F_2

C. XeO_3

D. XeO_3

Answer: C

Watch Video Solution

16. On oxidation with iodine, sulphite ion is transformed to ..... .

A. $S_4O_6^{2-}$

B. $S_2O_6^{2-}$

C. SO_4^{2-}

D. SO_3^{2-}

Answer: C

View Text Solution

17. Which of the following is strongest acid among all ?

A. HI

B. HF

C. HBr

D. HCl

Answer: A

Watch Video Solution

18. Which one of the following is correct for the bond dissociation enthalpy of halogen molecules ?

A. $Br_2 > I_2 > F_2 > Cl_2$

B. $F_2 > Cl_2 > Br_2 > I_2$

C. $I_2 > Br_2 > Cl_2 > F_2$

D. $Cl_2 > Br_2 > F_2 > I_2$

Answer: D

Watch Video Solution

19. Among the following the correct order of acidity is

A. $HClO_2 < HClO < HClO_3 < HClO_4$

B. $HClO_4 < HClO_2 < HClO < HClO_3$

C. $HClO_3 < HClO_4 < HClO_2 < HClO$

D. $HClO < HClO_2 < HClO_3 < HClO_4$

Answer: D

Watch Video Solution

20. When copper is heated with conc HNO_3 it produces

A. $Cu(NO_3)_2, NO$ and NO_2

B. $Cu(NO_3)_2$ and N_2O

C. $Cu(NO_3)_2$ and NO_2

D. $Cu(NO_3)_2$ and NO

Answer: C

Watch Video Solution

Textbook Evaluation Ii Answer The Following Questions

1. What is inert pair effect ?

Watch Video Solution

2. Chalcogens belongs to p-block. Give reason.

Watch Video Solution

3. Explain why fluorine always exhibit an oxidation state of -1 ?

Watch Video Solution

4. Give the oxidation state of halogen in the following.

(a) OF_2 (b) O_2F_2 (c) Cl_2O_3 (d) I_2O_4

Watch Video Solution

5. What are interhalogen compounds ? Give examples .

Watch Video Solution

6. Why fluorine is more reactive than other halogens?

Watch Video Solution

7. Give the uses of helium .

Watch Video Solution

8. What is the hybridisation of iodine in IF_7 ? Give its structure

.

Watch Video Solution

9. Give the balanced equation for the reaction between chlorine with cold $NaOH$ and hot $NaOH$.

Watch Video Solution

10. How will you prepare chlorine in the laboratory ?

Watch Video Solution

11. Give the uses of sulphuric acid.

Watch Video Solution

12. Give a reason to support that sulphuric acid is a dehydrating agent.

Watch Video Solution

13. Write the reason for the anamolous behaviour of nitrogen .

Watch Video Solution

14. Write the molecular formula and structural formula for the following molecules.

(a) Nitric acid (b) dinitrogen pentoxide (c) phosphoric acid (d) phosphine

Watch Video Solution

15. Give the uses of argon.

Watch Video Solution

16. Write the valence shell electronic configuration of group-15 elements.

Watch Video Solution

17. Give the equations to illustrate the chemical behaviour of phosphine .

Watch Video Solution

18. Give a reaction between nitric acid and a basic oxide.

Watch Video Solution

19. What happens when PCl_5 is heated ?

Watch Video Solution

20. Suggest a reason why HF is a weak acid, wheres binary acids of the all other halogens are strong acids.

View Text Solution

21. Deduce the oxidation number of oxygen in hypofluorous acid $-HOF$.

View Text Solution

22. What type of hybridisation occur in (a) BrF_5 (b) BrF_3

View Text Solution

23. Complete the following reactions.

1. $NaCl + MnO_2 + H_2SO_4 \rightarrow$

2. $NaNO_2 + Hcl \rightarrow$

3. $IO_3^- + I^- + H^+ \rightarrow$

4. $I_2 + S_2O_3^{2-} \rightarrow$

5. $P_4 + NaOH + H_2O \rightarrow$

6. $AgNO_3 + PH_3 \rightarrow$

7. $Mg + HNO_3 \rightarrow$

8. $KClO_3 \xrightarrow{\Delta}$

9. $Cu + \text{Hot Conc.} H_2SO_4 \rightarrow$

10. $Sb + Cl_2 \rightarrow$

11. $HBr + H_2SO_4 \rightarrow$

12. $XeF_6 + H_2O \rightarrow$

13. $XeO_6^{4-} + Mn^{2+} + H^+ \rightarrow$

14. $XeOF_4 + SiO_2 \rightarrow$

15. $Xe + F_2 \xrightarrow[400^\circ C]{Ni \,/\, 200 \text{ atm}}$

View Text Solution

Additional Questions I Choose The Best Answer

1. About $78\ \%$ of earth atmosphere contains, ...

A. P

B. As

C. N

D. Bi

Answer: C

Watch Video Solution

2. Which one of the following is not a pnictogens?

A. Nitrogen

B. Oxygen

C. Phosphorous

D. Antimony

Answer: B

View Text Solution

3. Which one of the following shows isotopes?

A. Nitrogen

B. Arsenic

C. Antimony

D. Bismuth

Answer: A

View Text Solution

4. Nitrogen gas in atmosphere is separated industrially from liquid air by ..... .

A. simple distillation

B. Fractional distillation

C. Sublimation

D. Distillation under reduced pressure

Answer: B

View Text Solution

5. Bond order for nitrogen molecular is ..... .

A. 1

B. 2

C. 3

D. 0

Answer: C

View Text Solution

6. Nitrogen gas is, ...

A. Inert

B. Noble

C. More reactive

D. Less reactive

Answer: A

View Text Solution

7. Which one of the following is used is cryosurgery?

A. $LiqN_2$

B. $LiqNH_3$

C. $LiqNa$

D. $LiqH_2$

Answer: A

View Text Solution

8. The dielectric constant of ammonia is (K) ..... .

A. 10^{-30}

B. 10^{-14}

C. 10^{30}

D. 10^{14}

Answer: A

View Text Solution

9. When ammonia reacts with copper sulphate solution to give complex, the colour of complex is, ...

A. voilet

B. deep blue

C. blue

D. Red

Answer: B

View Text Solution

10. $H-N-H$ bond angle in NH_3 is ..... .

A. $109^\circ 28'$

B. $107^\circ 28'$

C. 104°

D. 107°

Answer: D

View Text Solution

11. Shape of ammonia is ..... .

A. Planar

B. Square planar

C. Pyramidal

D. Square pyramidal

Answer: C

View Text Solution

12. Nitric acid prepared in large scales using, ...

A. Ostwald's process

B. Haber's process

C. Contact process

D. Deacon's process

Answer: A

View Text Solution

13. Benzene undergoes nitration reaction to form nitrobenzene in this reaction takes place due to the formation of ..... .

A. Hydronium ion

B. Hydride ion

C. Nitronium ion

D. Nitrasonium ion

Answer: C

View Text Solution

14. Oxidation state of N in HNO_3 is ..... .

A. $+2$

B. $+3$

C. $+4$

D. $+5$

Answer: D

View Text Solution

15. Compound used in photography is ..... .

A. $AgNO_3$

B. $AgBr$

C. $AgCl$

D. AgI

Answer: A

View Text Solution

16. Sodium nitrate used in ..... .

A. Photography

B. Firearms

C. Royal water

D. Cryosurgery

Answer: B

View Text Solution

17. Nitrogen sesquoxide colour is ..... .

A. colourless

B. Brown

C. Blue

D. Red

Answer: C

View Text Solution

18. White phosphorous is also called as, ...

A. Red phsophorous

B. Black phosphorous

C. Scarlest phosphorous

D. Yellow phosphorous

Answer: D

View Text Solution

19. White (yellow) phosphorous glows in the dark due to oxidation which is called, ...

A. phosphorescence phosphorus

B. phosphorus

C. Fluorescence

D. Liminoscence

Answer: A

View Text Solution

20. Yellow phsophorus reats alkali on boiling in an inert atmosphere liberates ..... .

A. Phosphorous acid

B. Phosphoric acid

C. Phosphine

D. Pyrophosphoric acid

Answer: C

View Text Solution

21. Consider the following statements.

(i) phosphine is the most important hydride of phosphorous

(ii) phosphine is a poisonoous gas with rotten egg small.

(iii) phosphine is a powerful reducing agent

Which of the above statement(s) is/are correct?

A. (i) and (ii)

B. (ii) and (iii)

C. (i) and (iii)

D. (ii) only

Answer: C

View Text Solution

22. When phosphine is heated with air it burns to gives, ...

A. Orthophosphoric acid

B. Metaphosphoric acid

C. Pyrophosphoric acid

D. Phosphoroustrioxide

Answer: B

View Text Solution

23. Hybridisation of P in phosphine is, ...

A. sp^3d

B. sp^3d^2

C. sp^3d^3

D. sp^3

Answer: D

View Text Solution

24. Compounds used in Holme's signal are ..... .

A. $\text{Phosphine}+\text{Acetylene}$

B. $H_3PO_3 + H_3PO_4$

C. $\text{Calcium carbide}+\text{calcium phosphide}$

D. $\text{Calcium carbonate}+\text{calcium phosphate}$

Answer: C

View Text Solution

25. Chalgogens are also called as ..... .

A. Ore forming elements

B. Group -16 elements

C. group 17 elements

D. Both (a) and (b)

Answer: D

View Text Solution

26. Element present in the volcanic ashes is ..... .

A. Oxygen

B. Sulphur

C. Selenium

D. Tellurium

Answer: B

View Text Solution

27. The decompostion of potassium chlorate speed up in the presence of ..... .

A. MnO_2

B. Mn_3O_4

C. $MnSO_4$

D. $KMnO_4$

Answer: A

View Text Solution

28. Pure ozone is ..... .

A. yellow gas

B. blue gas

C. Pale blue gas

D. bright blue gas

Answer: C

View Text Solution

29. Shape of ozone, ...

A. V - shape

B. Linear shape

C. bent shape

D. spherical shape

Answer: C

View Text Solution

30. The rate of decompostion of ozone drops sharply in ..... .

A. acidic medium

B. alkaline medium

C. neutral medium

D. Ether medium

Answer: B

View Text Solution

31. Which one of the following used as fuel in rockets?

A. $LiqO_2$

B. $LiqCO_2$

C. $LiqN_2$

D. $LiqHe - O_2$

Answer: A

View Text Solution

32. Find out crystalline allotrophic form of sulphur?

A. $\gamma -$ sulphur

B. $\lambda -$ sulphur

C. $\alpha -$ sulphur

D. milk of sulphur

Answer: C

View Text Solution

33. Consider the following statements

(i) $\alpha -$ sulphur is the only thermodynamically stable allotrophic form.

(ii) At $140^{\circ} C$ the mono clinic sulphur melts to form mobile pale yellow liquid called $\gamma -$ sulphur

(iii) Monoclinic sulphur is stable between $96^{\circ} C - 119^{\circ} C$ and slowly changes into $\lambda -$ sulphur

Which of the above statement(s) is/are not correct?

A. (i) only

B. (ii) only

C. (iii) only

D. (ii) and (iii)

Answer: D

View Text Solution

34. Sulphur di oxide, how many times heavier than air?

A. 2 times

B. 2.5 times

C. 2.2 times

D. 2.3 times

Answer: C

View Text Solution

35. Which one of following has temporary bleaching action?

A. Chlorine

B. SO_3

C. H_2SO_4

D. SO_2

Answer: D

View Text Solution

36. Sulphuric acid can be manufactured by ..... .

A. Ostwald's process

B. Lead chamber process

C. Deacon's process

D. Haber's process

Answer: B

View Text Solution

37. Sulphuric acid is manufactured by contact process, catalyst used in contact process is, ...

A. V_2O_5

B. $TiCl_4$

C. Fe

D. Mo

Answer: C

View Text Solution

38. Benzene reacts with sulphuric acid to gives, ...

A. sulphate

B. sulphide

C. sulphonic acid

D. sulphite

Answer: C

View Text Solution

39. Reagent used tp detect sulphate ion is ..... .

A. $BaCl_2$

B. $BaSO_4$

C. $(CH_3COO)_2Pb$

D. Both (a) and (c)

Answer: D

View Text Solution

40. Deacon's process is used to manufacture ..... .

A. Cl_2

B. F_2

C. Br_2

D. I_2

Answer: A

View Text Solution

41. Catalyst used in Deacon's process is ..... .

A. $CuCl_2$

B. Cu_2Cl_2

C. $CuBr_2$

D. Cu_2Br_2

Answer: B

View Text Solution

42. $C_{10}H_{16} + 8Cl_2 \xrightarrow{\Delta} A.$ Identify A?

A. Methane

B. Ethane

C. Carbon

D. Propane

Answer: C

View Text Solution

43. Passing chlorine gas through dry slaked lime to produce ..... .

A. $CaOCl$

B. $CaOCl_2$

C. CaO

D. $CaCl_2$

Answer: B

View Text Solution

44. Which one of the following is used for purification of drinking water?

A. SO_3

B. SO_2

C. Br_2 / H_2O

D. Cl_2

Answer: D

View Text Solution

45. Which one of the following is a weak acid?

A. HF

B. HCl

C. HBr

D. HI

Answer: C

View Text Solution

46. Reagent not stored in glass bottles?

A. HCl

B. HBr

C. HF

D. HI

Answer: A

View Text Solution

47. More reactive element is ..... .

A. Fluorine

B. Chlorine

C. Bromine

D. Iodine

Answer: A

View Text Solution

48. The correct order of the acidity of hydrohalic acids?

A. $HF > HCl > HBr > HI$

B. $HCl > HF > HBr > HI$

C. $HBr > HCl > HF > HI$

D. $HI > HBr > HCl > HF$

Answer: D

View Text Solution

49. Consider the following statements

(i) In interhalogaen compounds the central atom will be smaller

one.

(ii) It can be formed only between two halogen and not more than two halogens.

(iii) They are strong reducing agents.

Which of the above statement(s) is/are not correct?

A. (i) only

B. (ii) and (iii)

C. (i) and (iii)

D. (iii) only

Answer: C

View Text Solution

50. Shape of ClF_3 is ..... .

A. Linear

B. T - shape

C. Pyrimidal

D. Square planar

Answer: B

View Text Solution

51. Which one of the following is more acidic ?

A. $HOCl$

B. $HClO_2$

C. $HClO_3$

D. $HClO_4$

Answer: D

View Text Solution

52. When XeF_6 reacts with 2.5 M NaOH gives, ...

A. Na_4XeO_6

B. Na_2XeO_3

C. XeO_2F_2

D. XeO_3

Answer: A

View Text Solution

53. Shape of XeF_6 reacts with 2.5 M $NaOH$ gives, ...

A. Octahedron

B. Distorted octahedron

C. Pyramidal

D. Tetrahedron

Answer: B

View Text Solution

54. Which one of the following can penetrate through dense fog?

A. He

B. Ne

C. Kr

D. Rn

Answer: C

View Text Solution

55. Find out radioactive element?

A. He

B. Rn

C. Xe

D. Ar

Answer: B

View Text Solution

Additional Questions Ii Fill In The Blanks

1. The 11^{th} most abundant element is ..... .

View Text Solution

2. .....is the principle gas of atmosphere

View Text Solution

3. .....is used for the manufacture of calcium cyanamide

View Text Solution

4. Ammonia acts as a .....agent.

View Text Solution

5. With excess of chlorine, ammonia reacts to give .....an explosive substance.

View Text Solution

6. When excess ammonia is added to aqueous solution of copper sulphate .....colour compound is formed.

View Text Solution

7. .....is used in gunpower for firearms.

View Text Solution

8. The decomposition of ammonium nitrate gives .....

View Text Solution

9. White phosphorous is colourless but becomes pale yellow due to formation of a .....upon standing.

View Text Solution

10. The white phosphorous can be changed into .....by heated it to $420^{\circ} C$ in the absence of air aned light.

View Text Solution

11. .....reacts with alkali on boiling in an inert atmosphere liberating phosphine.

View Text Solution

12. .....is used in the match boxes.

View Text Solution

13. Phosphine is .....smelling gas.

View Text Solution

14. Phosphine has a .....shape.

View Text Solution

15. .....is used for producing smoke screen.

View Text Solution

16. When phosphorous trichloridie is hydrolysed with cold water it gives .....

View Text Solution

17. Elements belonging group 16 are called ..... .

View Text Solution

18. Under ordinary condition oxygen exists as a .....gas.

View Text Solution

19. Allotrophic form of oxygen is .....and ..... .

View Text Solution

20. Pure ozone is .....gas.

View Text Solution

21. .....is used in welding purpose.

View Text Solution

22. Monoclinic sulphur is stable between 96° and $119^{\circ}C$ and slowly changes into .....

View Text Solution

23. .....gas is found in volcanic eruptions.

View Text Solution

24. A large amount of .....gas is released into atmosphere from plants used coal and oil and copper melting plants.

View Text Solution

25. Sulphurdioxide gas has .....odour.

View Text Solution

26. Sullphurdioxide can be used for .....and.....in agriculture.

View Text Solution

27. In SO_3, $ZX-$ atoms undergoes .....hybridisation.

View Text Solution

28. In SO_3, a double bond arises between S and O is due to .....overlapping.

View Text Solution

29. High boiling point and viscosity of sulphuric acid is due to ..... .

View Text Solution

30. .....is used as a drying agent.

View Text Solution

31. The main source of fluorine is ..... .

View Text Solution

32. The main source of chlorine is ..... .

View Text Solution

33. Chlorine is a .....gas.

View Text Solution

34. Chlorine is soluble in water and its solution is refered as ..... .

View Text Solution

35. .....is produced by passing chlorine gas through dry slaked lime.

View Text Solution

36. .....is used in extraction of gold and platnium.

View Text Solution

37. .....is used for extraction of glue from bone.

View Text Solution

38. At room temperature, hydrogen halides are gases but .....can be readily liquefied.

View Text Solution

39. Liberation of iodine which gives a .....colouration with starch.

View Text Solution

40. Each halogen combines with other halogens to form a series of compounds called .....

View Text Solution

41. Structure of AX_7 type is ..... .

View Text Solution

42. Xenon reacts with PtF_6 and gave an ..... .

View Text Solution

43. Kr and fluorine gases are irradiated with SbF_5 it forms ..... .

View Text Solution

44. Shape of $XeOF_4$ is ..... .

View Text Solution

45. Helium used for filling air ..... .

View Text Solution

46. .....element subtimes at 889 K.

View Text Solution

Additional Questions Iii Match The Following

1.

(i) Haber's process	$(a) HNO_3$
(ii) Deacon's process	(b) Ammonia
(iii) Contact process	(c) Chlorine
(iv) Ostwald's process	$(d) H_2SO_4$

View Text Solution

2.

(i) Nitric acid	(a) Purification of bone black
(ii) HCl	(b) Photography
(iii) White (yellow) phosphorous	(c) Rotten fish smell
(iv) Phosphine	(d) Phosphorescence

View Text Solution

3.

(i) Nitrogen sesquoxide	$(a) H_2N_2O_2$
(ii) Nitrous oxide	$(b) H_4N_2O_4$
(iii) Hyponitrous acid	$(c) N_2O$
(iv) Hydronitrous acid	$(d) N_2O_3$

View Text Solution

4.

$(i) N_2O$	$(a) + 5$
$(ii) N_2O_4$	$(b) + 3$
$(iii) N_2O_5$	$(c) + 1$
$(iv) N_2O_3$	$(d) + 4$

View Text Solution

5.

(i) White phosphorous	(a) Volcanic eruptions
(ii) Red phosphorous	(b) Yellow phosphorous
(iii) Phosphine	(c)Match boxes
(iv) SO_2	(d) smoke screen

View Text Solution

6.

(i) ammonia	(a) suffocating odour
$(ii) SO_2$	(b) Rotten fish smell
$(iii) PH_3$	(c) Greenish yellow gas
$(iv) Cl_2$	(d) pungent smelling gas

View Text Solution

7.

$(i) XeF_4$	$(a) sp^3$
$(ii) XeOF_2$	$(b) sp^3d^2$
$(iii) XeO_3$	$(c) sp^3d^3$
$(iv) XeF_6$	$(d) sp^3d$

View Text Solution

8.

(i) Helium	(a) flash bulbs
(ii) Neon	(b) radioactive
(iii) Krypion	(c) air balloons
(iv) Radon	(d) Brilliant red glow

View Text Solution

Additional Questions Iv Assertion And Reason

1. Assertion (A) : Xenon is used in high speed electronic flash bubls used by photographers.

Reason (R): Xenon emits an intense light in discharge tubes instantly.

A. A are R are correct and R explains A

B. A and R are correct but doesn't explains A

C. A is correct but R is wrong

D. A is wrong but R is correct

Answer: A

View Text Solution

2. Assertion (A) : Noble gases have the largest ionisation energy compared to any other elements.

Reason (R) : Noble gases have incomplete filled orbital.

A. A are R are correct and R explains A

B. A and R are correct but doesn't explains A

C. A is correct but R is wrong

D. A is wrong but R is correct

Answer: C

View Text Solution

3. Assertion (A) : Hydrogen iodide decomposes at $400^{\circ}C$ while hydrogen fluoride and hyrogen chloride are stable at this

temperature.

Reason (R) : Thermal stability of hydrogen halides decreases from fluoride to iodide.

A. A are R are correct and R explains A

B. A and R are correct but doesn't explains A

C. A is correct but R is wrong

D. A is wrong but R is correct

Answer: A

View Text Solution

4. Assertion (A) : The bleaching of chlorine is temporary.

Reason (R) : Chlorine oxidises ferrous salts to ferric salts.

A. A are R are correct and R explains A

B. A and R are correct but doesn't explains A

C. A is correct but R is wrong

D. A is wrong but R is correct

Answer: D

View Text Solution

5. Assertion (A) : Sulphuric acid is highly reactive.

Reason (R) : Sulphuric acid can act as strong acid and an oxidising agent.

A. A are R are correct and R explains A

B. A and R are correct but doesn't explains A

C. A is correct but R is wrong

D. A is wrong but R is correct

Answer: B

View Text Solution

6. Assertion (A) : Sulphuric acid is a high boiling point and viscous liquid.

Reason (R) : This is due to the association of molecules together hydrogen bonding.

A. A are R are correct and R explains A

B. A and R are correct but doesn't explains A

C. A is correct but R is wrong

D. A is wrong but R is correct

Answer: A

View Text Solution

7. Assertion (A) : Monoclinic sulphur is less stable than rhomobic sulphur.

Reason (R) : Monoclinic sulphur is stable between $96^{\circ}C - 119^{\circ}C$ and slowly changes into rhombic sulphur.

A. A are R are correct and R explains A

B. A and R are correct but doesn't explains A

C. A is correct but R is wrong

D. A is wrong but R is correct

Answer: A

View Text Solution

8. Assertion (A) : Nitrogen gas is chemically inert.

Reason (R) : Nitrogen has low bonding energy.

A. A are R are correct and R explains A

B. A and R are correct but doesn't explains A

C. A is correct but R is wrong

D. A is wrong but R is correct

Answer: C

View Text Solution

Additional Questions V Find The Odd One Out

1. Find the odd one out

A. NO

B. HNO_3

C. NO_2

D. N_2O

Answer: B

View Text Solution

2. Find the odd one out

A. Nitrous acid

B. Nitric acid

C. Hyponitrous acid

D. Pernitrous acid

Answer: D

View Text Solution

3. Find the odd one out

A. White phosphorous

B. Red phosphorous

C. phosphorous pentaoxide

D. black phosphorous

Answer: C

View Text Solution

4. Find the odd one out

A. PH_3- Holme's signal

B. HPO_3

C. H_3PO_3

D. H_3PO_4

Answer: A

View Text Solution

5. Find the odd one out

A. He

B. Ne

C. Ar

D. Xe

Answer: D

View Text Solution

Additional Questions Vi Find Out The Correct Pair

1. Find out the correct pair.

A. Helium - filament bulbs

B. Krypton - prevent bonds

C. Xenon - Lasers

D. Radon - flash bulbs

Answer: C

View Text Solution

2. Find out the correct pair.

A. Ra - gamma rays

B. Xe - cancer growth

C. Ne - balloons

D. Kr - advertisement bulb

Answer: A

View Text Solution

3. Find out the correct pair.

A. ClF_3 – Linear

B. BrF_5 – T - shaped

C. IF_4 – square pyrimidal

D. BrF_5 – square pyrimidal

Answer: D

View Text Solution

4. Find out the correct pair.

A. $XeOF_2 - sp^3$

B. $XeF_6 - sp^3d^3$

C. $XeF_4 - sp^3$

D. $XeOF_4 - sp^3d$

Answer: B

View Text Solution

5. Find out the correct pair.

A. $OF_2 = -1$

B. $Cl_4O_4 = -1$

C. $I_2O_4 = -1$

D. $I_2O_9 = -1$

Answer: A

View Text Solution

6. Find out the correct pair.

A. Royal water - Dissolving gold

B. Chlorine - Entraction of glue from bone

C. HCl - Extrqaction of gold

D. Chlorine - Temporary bleaching

Answer: A

View Text Solution

7. Find out the correct pair.

A. $O - 2s^2sp^3$

B. $S - 3s^23p^4$

C. $Se - 4d^{10}5s^25p^4$

D. $Te - 3d^{10}4s^24p^4$

Answer: B

View Text Solution

Additional Questions Vii Find Out The Incorrect Pair

1. Find out the incorrect pair.

A. Nitrogen gas - inert

B. Ammonia - pungent smelling gas

C. Nitric acid - oxidizing agent

D. Phosphine - rotten egg smell

Answer: D

View Text Solution

2. Find out the incorrect pair.

A. Liquid nitrogen - biological preservation

B. Nitric acid - photography

C. white phosphorous - yellow phosphorous

D. phosphorous - welding

Answer: D

View Text Solution

3. Find out the incorrect pair.

A. $N_2O = +1$

B. $N_2O = +2$

C. $N_2O_3 = +5$

D. $NO_2 = +4$

Answer: C

View Text Solution

4. Find out the incorrect pair.

A. Hyponitrous acid $-N_2O$

B. Nitrous acid -HNO_2

C. pernitric acid $-HNO_4$

D. pernitrous acid $-HOONO$

Answer: A

View Text Solution

5. Find out the incorrect pair.

A. PH_3- Holme's signal

B. O_2 – welding

C. H_2SO_4 – Disinfecting crops

D. SO_3 – Bleaching hair

Answer: C

View Text Solution

6. Find out the incorrect pair.

A. H_2SO_4 – drying agent

B. Chlorine - Deacon's process

C. HCl – purification of bone black

D. Helium - flash bulbs

Answer: D

View Text Solution

7. Find out the incorrect pair.

A. ICl – Linear

B. ClF_3- T shape

C. IF_5 – pentagonal bipyramidal

D. IF_7 – pentagonal bipyramidal

Answer: C

View Text Solution

8. Find out the incorrect pair.

A. $HOCl = +2$

B. $HOCl = +3$

C. $HOCl = +5$

D. $HOCl_4 = +7$

Answer: A

View Text Solution

9. Find out the incorrect pair.

A. $XeF_4 + sp^3d^2$

B. $XeF_6 - sp^3d^3$

C. $XeOF_4 - sp^3d^2$

D. $XeO_3 - sp^3d$

Answer: D

View Text Solution

10. Find out the incorrect pair.

A. He - cryogenics

B. Ne - advertisement

C. Kr - flurescent bulbs

D. Ra - Lasers.

Answer: D

View Text Solution

Additional Questions 2 Mark Questions

1. What are pnictogens?

View Text Solution

2. What happens when sodium azide undergoes thermal decomposition?

View Text Solution

3. How will you prepare ammonia from nitrogen? And mention the name of process?

View Text Solution

4. Why nitrogen gas is chemically inert?

View Text Solution

5. Mention the uses of nitrogen?

View Text Solution

6. Explain the action of heat on ammonia.

View Text Solution

7. Prove ammonia act as a reducing agent?

View Text Solution

8. What happen when copper sulphate reacts with ammonia?

View Text Solution

9. Pure nitric acid is colourless, on standing it becomes yellow. Justify your answer.

View Text Solution

10. Write the products formed in the reaction of nitric acid with dilute and concentrated with magnesium.

View Text Solution

11. Give the uses of nitric acid.

View Text Solution

12. How will you prepare nitric oxide from sodium nitrite?

View Text Solution

13. How will you prepare nitrogen pentoxide?

View Text Solution

14. Draw the structure of (a) N_2O (b) N_2O_3.

View Text Solution

15. Draw the structure of (a) N_2O_4 (b) N_2O_5.

View Text Solution

16. Draw the structure of (a) Hyponitrous acid (b) Hydronitrous acid.

View Text Solution

17. Mention the allotropic forms of phosphorous?

View Text Solution

18. Why white phosphorous is also known as yellow phosphorous?

View Text Solution

19. What is phosphorescence?

View Text Solution

20. Why white phophorous undergoes spontaneous combustion in air?

View Text Solution

21. Draw the structure of (a) white phosphorous (b) red phsphorous

View Text Solution

22. How will you convert red phosphorous into P_2O_3 and P_2O_5 ?

View Text Solution

23. How will you prepare orthophosphoric acid from phosphorous?

View Text Solution

24. Mention the uses of phosphorus?

View Text Solution

25. Show that phosphine is weakly basic?

View Text Solution

26. Draw the structure of PCl_3.

View Text Solution

27. How will you preapre PCl_3 from white phosphorous?

View Text Solution

28. What happen when PCl_3 is treated with cold water?

View Text Solution

29. How will you prepare PCl_3?

View Text Solution

30. Mention the uses of PCl_3 and PCl_5?

View Text Solution

31. Draw the structure of H_3PO_2 and H_3PO_3?

View Text Solution

32. Draw the structure of $H_4P_2O_6$ and $H_4P_2O_7$?

View Text Solution

33. Give the method to prepare hypophosphorous acid and pyrophosphoric acid?

View Text Solution

34. Complete the reactions,

(i) $HgO \xrightarrow{\Delta} ?$

(ii) $BaO_2 \xrightarrow{\Delta} ?$

View Text Solution

35. Give and explain the reaction used to estimation of ozone.

View Text Solution

36. Write a short notes on Rhombic sulphur?

View Text Solution

37. Write a notes on monoclinic sulphur?

View Text Solution

38. What are $\lambda -$ sulphur?

View Text Solution

39. How will you prepare sulphurdioxide by laboratory method?

View Text Solution

40. Complete the reaction,

(i) $Zns + O_2 \xrightarrow{\Delta} ?$

(ii) $FeS_2 + O_2 \xrightarrow{\Delta} ?$

View Text Solution

41. What happen when sulphurdioxide reacts with sodium hydroxide and sodium hydroxide and sodium carbonate?

View Text Solution

42. Mention the uses of sulphurdioxide?

View Text Solution

43. Why sulphuric acid is high boiling and viscous liquid?

View Text Solution

44. Explain the reaction between benzene and sulphuric acid.

View Text Solution

45. Give the uses of sulphuric acid ?

View Text Solution

46. Draw the structure of H_2SO_3 and H_2SO_4?

View Text Solution

47. Draw the structure of $H_2S_2O_3$ and $H_2S_2O_4$?

View Text Solution

48. Draw the structure of (a) Pyrosulphuric acid (b) Peroromonosulphuric acid?

View Text Solution

49. What happen when chlorine reacts with trupentine?

View Text Solution

50. How will you prepare hydrochloric acid by laboratory method?

View Text Solution

51. Mention the uses of hydrochloric acid ?

View Text Solution

52. Complete the the following reaction?

(i) $BrF_5 \xrightarrow{OH^{\ominus}} ?$

(ii) $ICl \xrightarrow{OH^{\ominus}} ?$

View Text Solution

53. Why noble gases have the largest ionisation energy?

View Text Solution

54. Mention the uses of Neon?

View Text Solution

55. Give the uses of Krypton?

View Text Solution

56. Mention the application of Xenon?

View Text Solution

57. Give the uses of Radon?

View Text Solution

58. Why arepentahalides more covalent than trihalides?

View Text Solution

59. Why is N_2 less reactive at room temperature?

View Text Solution

60. Why is ICl more reactive than I_2?

View Text Solution

61. Why is helium used in dividing apparatus?

View Text Solution

62. Give the disproportionation reaction of H_3PO_3?

View Text Solution

63. Why is red Phosphorus less reactive than white Phosphorus?

View Text Solution

64. Nitrogen does not form any pentahalide like Phosphorus. Why?

View Text Solution

65. Give reason for the following. Among the noble gases only Xenon is well known to form chemical compounds?

View Text Solution

66. Why is hydrogen sulphide, with greater molar mass a gas, while water a liquid at room temperature?

View Text Solution

67. Noble gases are chemically inert. Give reasons.

View Text Solution

68. Why do noble gases exist as monoatomic?

View Text Solution

69. Nitrogen exists as diatomic molecule and Phosphrus as P_4. Why?

View Text Solution

70. Why is H_2S more acidic than water?

View Text Solution

Additional Questions 3 Mark Questions

1. Complete the following reactions.

(i) $6Li + N_2 \rightarrow ?$

(ii) $3Ca + N_2 \rightarrow ?$

(iii) $2B + N_2 \rightarrow ?$

View Text Solution

2. How is ammonia prepared?

View Text Solution

3. Explain the stucture of ammonia.

View Text Solution

4. How will you prepare nitric acid?

View Text Solution

5. Discuss the Commerical method to prepare Nitric acid.

View Text Solution

6. How will you prepare nitric acid by Ostwald's process?

View Text Solution

7. Draw the structure of the following compounds.

(a) Nitrous acid (b) Nitric acid (c) Pernitric acid

View Text Solution

8. Identify A, B and C from the following reactions.

(i) $P_4 + Mg \rightarrow A$

(ii) $P_4 + Ca \rightarrow B$

(iii) $P_4 + Na \rightarrow C$

View Text Solution

9. How will you prepare phosphine and explain the purification of phosphine?

View Text Solution

10. What happens when PH_3 reacts with oxygen or air?

View Text Solution

11. Explain the structure of phosphine.

View Text Solution

12. Discuss the uses of phosphine.

View Text Solution

13. How does PCl_3 reacts with the following reagents?

(i) C_2H_5OH

(ii) C_2H_5COOH

View Text Solution

14. Explain the reaction between PCl_5 and water.

View Text Solution

15. Explain the structure of phosphorous trioxide (P_2O_3).

View Text Solution

16. Discuss the structure of phosphorous pentaoxide (P_2O_5).

View Text Solution

17. Mention the uses of oxygen.

View Text Solution

18. Give and explain reducing behaviour of sulphur dioxide.

View Text Solution

19. Why bleaching action of sulphur dioxide is temporary?

View Text Solution

20. Explain the structure of sulphur dioxide.

View Text Solution

21. How will you manufacture sulphuric acid by contact process?

View Text Solution

22. Prove that H_2SO_4 is strong dibasic acid.

View Text Solution

23. Draw the structure of (a) Marshall's acid (b) Polythionic acid (c) Dithionic acid

View Text Solution

24. What happens when chlorine reacts with ammonia?

View Text Solution

25. Bleaching action of chlorine is permanent. Justify this statement.

View Text Solution

26. Give the uses of chlorine.

View Text Solution

27. What is Royal water?

View Text Solution

28. Why HF is not stored in glass bottles?

View Text Solution

29. Give the properties of inter halogen compounds.

View Text Solution

30. How will you prepare Xenon fluoride?

View Text Solution

31. Complete the following reaction.

(i) $XeOF_4 + SiO_2 \rightarrow A + SiF_6$

(ii) $A + SiO_2 \rightarrow B + SiF_6$

View Text Solution

32. What happens when XeF_6 reacts 2.5 M solution of $NaOH$?

View Text Solution

33. Give two examples to show the anomalous behaviour of fluorine.

View Text Solution

34. Why does the reactivity of nitrogen differ from phosphorus?

View Text Solution

35. Why does NH_3 form hydrogen bond but PH_3 does not?

View Text Solution

36. Can PCl_4 acts as an oxidising as well as a reducing agent? Justify.

View Text Solution

Additional Questions 5 Mark Questions

1. How does ammonia react with

(a) Excess Cl_2 (b) Na (c) $CuSO_4$ (d) O_2 / Δ

View Text Solution

2. Explain the reaction of metals with nitric acid.

View Text Solution

3. How will you prepare ozone by laboratory method? Explain the structure of ozone.

View Text Solution

4. A is a king of acid. A reacts with HBr to give B and Bromine. A reacts with Na_2CO_3 to give C and carbon dioxide. Identify A, B and C. Give the reaction.

View Text Solution

5. How does Sulphuric acid react with the following :

(a) Al (b) KNO_3 (c) $NaBr$ (d) C_6H_6

View Text Solution

6. (i) Explain the test for sulphate (or) sulphuric acid.

(ii) What happens when sulphuric acid reacts with oxalic acid?

View Text Solution

7. Discuss the manufacture of chlorine.

View Text Solution

8. (i) How is bleaching power prepared?

(ii) What happens when benzene reacts with chlorine?

View Text Solution

9. Conc. H_2SO_4 is added followed by heating to each of the following test tubes labelled (I) to (IV). Identify in which of the above test tube the following change will be observed. Support your answer with the help of chemical equation:

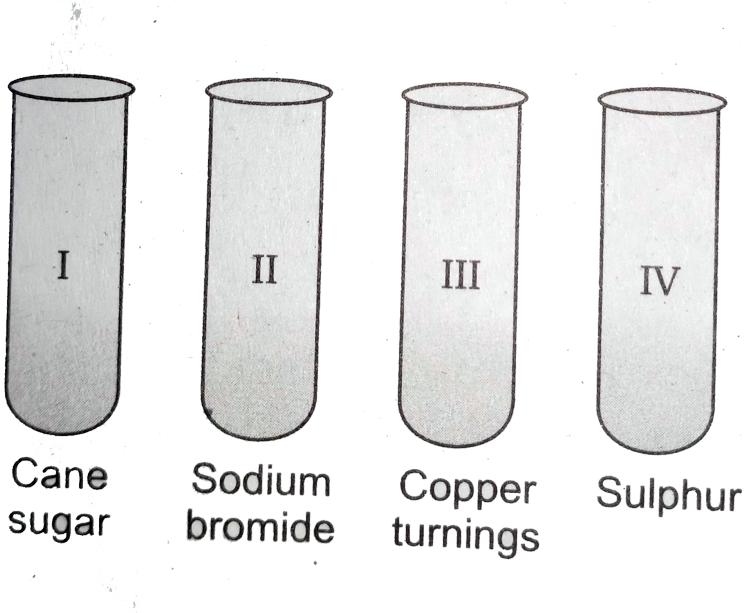
(a) formation of black substance

(b) evolution of brown gas

(c) evolution of colourless gas

(d) formation of a brown substance which on dilution becomes blue.

(e) disappearance of yellow powder along with evolution of colourless gas.



View Text Solution

10. Give reason for each of the following:

(a) Bleaching of flowers by Cl_2 is permanent while by SO_2 is temporary.

(b) Molten aluminium bromide is a poor conductor of electricity.

(c) Nitric oxide becomes brown when released in air.

(d) PCl_5 is ionic in nature in the solid state.

(e) Ammonia is a good complexing agent.

View Text Solution

11. How will you prepare the following compounds.

(a) Hyponitrous acid

(b) Nitrous acid (c) Pernitrous acid (d) Pernitric acid

View Text Solution