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CHEMISTRY

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P-BLOCK ELEMENT II

Evaluation Choose The Correct Answer

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

A. Nessler's reagent

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

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2. Which is true regarding nitrogen?

A. least electronegative element

B. has low ionisation enthalpy than oxygen

C. d- orbitals available

D. ability to form $P\pi$— $P\pi$ bonds with itself

Answer: D

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3. An element belongs to group 15 and 3rd period of the periodic table, its electronic configuration would be:

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

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

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

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

Answer: D

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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

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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

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6. On hydrolysis, PCl_3 gives:

A. H_3PO_3

B. PH_3

C. H_3PO_4

D. $POCl_3$

Answer: A

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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

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

A. 4

B. 2

C. 3

D. 5

Answer: B

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

A. 6N

B. 4N

C. 2N

D. none of these

Answer: A

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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 is false.

D. Both assertion and reason are false.

Answer: D

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

A. Cl_2

B. F_2

C. Br_2

D. I_2

Answer: B

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

A. HI gt HBr gt HCl gt HF

B. HF gt HCI gt HBr gt HI

C. HCI gt HF gt HBr gt HI

D. HI gt HCI gt HF gt HBr

Answer: B

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

A. $XeOF_4$

B. XeO_3

C. XeF_2

D. NeF_2

Answer: D

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14. Most easily liquefiable gas is:

A. Ar

B. Ne

C. He

D. Kr

Answer: C

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15. XeF_6 on complete hydrolysis produces:

A. $XeOF_4$

B. XeO_2F_2

C. XeO_3

D. XeO_2

Answer: C

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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

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

A. HI

B. HF

C. HBr

D. HCl

Answer: A

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18. Which one of the following orders 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

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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

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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

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Evaluation Answer The Following Questions

1. What is inert pair effect?

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

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

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4. Give the oxidation state of halogen in the OF_2

View Text Solution

5. Give the oxidation state of halogen in theO_2F_2

View Text Solution

6. Give the oxidation state of halogen in the Cl_2O_3

View Text Solution

7. Give the oxidation state of halogen in the I_2O_4

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8. What are interhalogen compounds? Give examples.

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9. Why fluorine is more reactive than other halogens?

View Text Solution

10. Give the uses of helium.

View Text Solution

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

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

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13. How will you prepare chlorine in the laboratory?

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14. Give the uses of sulphuric acid.

View Text Solution

View Text Solution

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

View Text Solution

16. Give the reason for the anamolous behaviour of Nitrogen.

View Text Solution

17. Write the molecular formula and structural formula for the molecules.

Nitric acid

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18. Write the molecular formula and structural formula for the molecules.

dinitrogen pentoxide

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19. Write the molecular formula and structural formula for the molecules.

Phosphoric acid

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20. Write the molecular formula and structural formula for the molecules.

phosphine

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21. Give the uses of argon.

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

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23. Give two equations to illustrate the chemical behaviour of phosphine.

View Text Solution

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

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25. What happens when PCl_5 is heated?

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26. Suggest a reason why HF is a weak acid, whereas binary acids of the all other halogens are

strong acids.

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27. Deduce the oxidation number of oxygen in hypofluorous acid – HOF.

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28. What type of hybridisation occur in BrF_5

View Text Solution

29. What type of hybridisation occur in BrF_3

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30. Complete the reactions.

$NaCl + MnO_2 + H_2SO_4 \rightarrow$

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31. Complete the reactions.

$NaNO_2 + HCl \rightarrow$

View Text Solution

32. Complete the reactions.

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

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33. Complete the reactions.

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

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34. Complete the reactions.

$P_4 + NaOH + H_2O \rightarrow$

View Text Solution

35. Complete the reactions.

$AgNO_3 + PH_3$

View Text Solution

36. Complete the reactions.

$Mg + HNO_3 \rightarrow$

View Text Solution

37. Complete the reactions.

$$KClO_3 \xrightarrow[\text{Hot conc.}]{\Delta}$$

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38. Complete the reactions.

$$Cu + H_2SO_4 \rightarrow$$

View Text Solution

39. Complete the reactions.

$Sb + Cl_2 \rightarrow$

View Text Solution

40. Complete the reactions.

$HBr + H_2SO_4 \rightarrow$

View Text Solution

41. Complete the reactions.

$XeF_6 + H_2O \rightarrow$

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42. Complete the reactions.

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

View Text Solution

43. Complete the reactions.

$XeOF_4 + SiO_2 \rightarrow$

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44. Complete the reactions.

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

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Other Important Questions Answers Choose The Correct Answer

1. Which of the following is tribasic?

A. H_2PO_2

B. H_3PO_3

C. $H_4P_2O_7$

D. H_3PO_4

Answer: D

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2. Which of the following oxides of nitrogen is thermally most stable?

A. N_2O_5

B. NO_2

C. NO

D. N_2O

Answer: C

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3. P_2O_5 is extensively used as

A. reducing agent

B. preservative

C. oxidising agent

D. dehydrating agent

Answer: D

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4. The range of oxidation states shown by phosphorus is from:

A. – 3 to +5

B. – 3 to 0

C. 0 to +5

D. – 4 to +2

Answer: A

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5. The structural formula of hypo phosphorus acid is:

A. 

B. 

C. 

D. 

Answer: A

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6. Which of the following oxides is the most acidic?

A. P_2O_5

B. N_2O_5

C. Sb_2O_3

D. AS_2O_3

Answer: B

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7. In white phosphorus molecule (P_4) which one is not correct?

A. Six P - P single bonds are present

B. Four P - P single bonds are present

C. Four lone pairs of electrons are present

D. P-P-P bond angle is 60°

Answer: B

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8. In the preparation of sulphuric acid, V_2O_5 is used as a catalyst in the reaction?

A. $S + O_2 tp SO_2$

B. $2SO_2 + O_2 \rightarrow 2SO_3$

C. $SO_3 + H_2O \rightarrow H_2SO_4$

D. none of these

Answer: B

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9. HCOOH reacts with conc. H_2SO_4 to produce:

A. CO

B. CO_2

C. SO_2

D. SO_3

Answer: A

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10. 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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11. Among H_2O, H_2S, H_2Te, H_2Se , the one with maximum boiling point is:

A. H_2O because of hydrogen bonding

B. H_2Te because of higher molecular mass

C. H_2S because of hydrogen bonding

D. H_2Se because of lower molecular mass

Answer: A

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12. Which of the following has the highest bond energy?

A. O - O

B. S - S

C. Se - Se

D. Te - Te

Answer: A

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13. Which of the following reaction is not feasible?

A. $2KI + Br_2 \rightarrow 2KBr + I_2$

B. $2KBr + I_2 \rightarrow KI + Br_2$

C. $2KBr + Cl_2 \rightarrow 2KCl + Br_2$

D. $2H_2O + F_2 \rightarrow 4HF + O_2$

Answer: B

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14. $[X] + H_2SO_4 \rightarrow [Y]$. a colourless gas with initiating smell.

$[Y] + K_2Cr_2O_7 + H_2SO_4 \rightarrow$ green solution [X] and [Y1 are:

A. SO_3^{2-}, SO_2

B. Cl^-, HCl

C. S^{-2}, H_2S

D. CO_3^{2-}, CO_2

Answer: A

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15. Which of the following chemical reactions depicts the oxidising nature of conc. H_2SO_4 ?

A. $2HI + H_2SO_4 \rightarrow I_2 + SO_2 + H_2O$

B. $Ca(OH)_2 + H_2SO_4 \rightarrow CaSO_4 + 2H_2O$

C. $NaCl + H_2SO_4 \rightarrow NaHSO_4 + HCl$

D.

$$2PCl_5 + H_2SO_4 \rightarrow POCl_3 + 2HCl + SO_2Cl_2$$

Answer: A

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16. The correct order of reactivity of halogens is:

A. F gt Br gt ClgtI

B. Fgt Clgt Br gt I

C. Igt Br gt C1 gt F

D. Br gt ClgtFgtI

Answer: B

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17. Which one of the following arrangements does not truly represent the property against it?

A. $Br_2 < Cl_2 < F_2$ Electronegativity

B. $Br_2 < F_2 < Cl_2$ Electron affinity

C. $Br_2 < Cl_2 < F_2$ Bond energy

D. $Br_2 < Cl_2 < F_2$ Oxidising power

Answer: C

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18. Which products are expected from the disproportionation reaction of hypochlorus acid?

A. $HClO_3$ and Cl_2O

B. $HClO_2$ and $HClO_3$

C. HCl and Cl_2O

D. HCl and $HClO_3$

Answer: D

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19. Among the halogens, the one which is oxidised by nitric acid is:

A. F

B. Cl

C. Br

D. I

Answer: D

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20. Sea divers go deep in sea water with a mixture of the following gases?

A. O_2 and Ar

B. O_2 and He

C. CO_2 and Ar

D. O_2 and CO_2

Answer: B

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21. Among the following molecules:

(i) $XeO_2 (ii) XeOF_4 (iii) XeF_6$

those having same number of lone pairs on Xe are:

A. (i) and (ii) only

B. (i) and (iii) only

C. (ii) and (iii) only

D. in all

Answer: D

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22. As compared to nitrogen, oxygen is:

A. less electronegative and less reactive

B. more electronegative and less reactive

C. more electronegative and more reactive

D. less electronegative and more reactive

Answer: C

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23. Among the following the pair in which two species are not isostructural is:

A. SiF_4 and SF_4

B. IO_3^- and XeO_3

C. BH_4^- and NH_4^+

D. PF_6^- and SF_6

Answer: A

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24. Which one of the following statements is correct?

A. The bond dissociation energy of fluorine is less than chlorine.

B. Pene HBr can be prepared by treatment of NaBr with conc.H_2SO_4

C. Hydrazine (N_2H_4) is a stronger base than NH_3

D. H_2S is a weaker acid than H_2O

Answer: C

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25. Which of the following two are iso structural?

A. XeF_2, IF_2^-

B. NH_3, BF_2

C. CO_3^{-2}

D. PCl_5, Icl_5

Answer: A

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26. Assertion (A): Nitrogen molecule iş less reactive than molecular oxygen.

Reason (R): The bond length of N_2 is shorter than that of oxygen.

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 is false

D. Both assertion and reason are false.

Answer: A

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27. Assertion (A): $HCIO_4$ is a stronger acid than $HCIO_3$.

Reason (R): The oxidation state of chlorine in $HClO_4$ is +5 and in $HClO_3$ is +7

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 is false

D. Both assertion and reason are false.

Answer: C

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28. Which reactions are used in the preparation of halogen açid?

$(i) 2KBr + H_2SO_4(conc) \rightarrow K_2SO_4 + 2HBr$

$(ii) 2Kl + H_2SO_4(conc) \rightarrow K_2SO_4 + 2HI$

$(iii) CaF_2 + H_2SO_4(conc) \rightarrow CaSO_4 + 2HF$

$(iv) NaCl + concH_2SO_4 \rightarrow NaHSO_4 + HCl$

A. (i) and (ii) only

B. (ii) and (iii) only

C. (iii) and (iv) only

D. (i) and (iv) only

Answer: C

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29. Iodine cannot form the ion:

A. I^{+2}

B. I^{-}

C. I^{+3}

D. I^{+}

Answer: A

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30. Xenon forms compounds with fluorine under different conditions. The known fluorides are:

$(i) XeF (ii) XeF_2 (iii) XeF_3 (iv) XeF_4$

A. (i) and (iv) only

B. (ii) and (iv) only

C. (ii) and (iii) only

D. (i) and (iii) only

Answer: B

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Other Important Questions Answers Answer The Following Questions

1. Briefly account for the trend in atomic radius of elements in the nitrogen family

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2. Briefly explain the trend in melting and boiling point in the nitrogen family elements.

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3. What happens when Sodium azide is heated? Give equations.

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4. What happens when Ammonia is treated with bromine. Give equations.

View Text Solution

5. Explain why nitrogen is inert at room temperature.

View Text Solution

6. What are nitrides?

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7. Give the preparation of Lithium nitride by means of chemical equation

View Text Solution

8. Give the preparation of Calcium nitride by means of chemical equation

View Text Solution

9. Give the preparation of Boron nitride by means of chemical equation

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10. Mention the conditions under which maximum amount of ammonia is formed from nitrogen to

hydrogen.

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11. Give equation for hydrolysis of urea

View Text Solution

12. Give equation for heating ammonium chloride with CaO

View Text Solution

13. Give equation for Heating magnesium nitride with water

View Text Solution

14. How is ammonia manufactured?

View Text Solution

15. Compare the properties of liquid ammonia and water.

View Text Solution

16. Give equations for the Ammonia is heated over $500^\circ C$

View Text Solution

17. Give equations for the Ammonia is burnt in oxygen

View Text Solution

18. Give equations for the Ammonia is burnt in oxygen in the presence of a metal catalyst (pt)

View Text Solution

19. Give equations for the Ammonia is treated with excess of chlorine.

View Text Solution

20. Give equations for the Excess of ammonia is treated with chlorine.

View Text Solution

21. Give an example for a reducing property of ammonia.

View Text Solution

22. Ammonia is a reducing agent. Give an example to prove this statement.

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23. What are amides ? Give an example . How are they formed?

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24. What are nitrides ? Give an example . How are they formed?

View Text Solution

25. What happens when an aqueous solution of ammonia is treated with aqueous solution of ferric

chloride

View Text Solution

26. What happens when an aqueous solution of ammonia is treated with an aqueous solution of cupric chloride

View Text Solution

27. What happens when an aqueous solution of ammonia is treated with an aqueous solution of aluminium chloride.

View Text Solution

28. Explain with examples, that ammonia acts as a Lewis base.

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29. Explain why (i) insoluble silver chloride dissolves in aqueous ammonia?

View Text Solution

30. When aqueous ammonia is treated with a copper sulphate solution, a blue precipitate is formed It dissolves an adding excess ammonia. Explain this observation.

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31. Explain the structure of ammonia.

View Text Solution

32. How is nitric acid prepared?

View Text Solution

33. Give reason for the following:

The nitric acid prepared by heating potassium nitrate and conc. H_2SO_4 is brown coloured.

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34. Explain the manufacture of Oswalld's process of nitric acid.

View Text Solution

35. Explain with examples to show that nitric acid acts as an acid

View Text Solution

36. Explain with examples to show that nitric acid acts as an oxidising agent

View Text Solution

37. Explain with examples to show that nitric acid acts as an as nitrating agent

View Text Solution

View Text Solution

38. Briefly explain the action of nitric acid on metals.

View Text Solution

39. Give uses of nitric acid.

View Text Solution

40. Complete and balance the equations.

$NH_4NO_3 \xrightarrow{\Delta}$

View Text Solution

41. Complete and balance the equations.

$NaNO_2 + FeSO_4 + H_2SO_4 \rightarrow$

View Text Solution

42. Complete and balance the equations.

$NO + N_2O_4 \rightarrow$

View Text Solution

43. Complete and balance the equations.

$Pb(NO_3)_2 \xrightarrow{\Delta}$

View Text Solution

44. Complete and balance the equations.

$HNO_3 + P_2O_5 \rightarrow$

View Text Solution

45. Give the oxidation states of nitrogen in the

N_2O

View Text Solution

46. Give the oxidation states of nitrogen in the NO

View Text Solution

47. Give the oxidation states of nitrogen in the N_2O_3

View Text Solution

48. Give the oxidation states of nitrogen in the NO_2

View Text Solution

49. Give the oxidation states of nitrogen in the N_2O_4

View Text Solution

50. Give the oxidation states of nitrogen in the N_2O_5

View Text Solution

51. Write the structure of the N_2O

View Text Solution

52. Write the structure of the NO

View Text Solution

53. Write the structure of the N_2O_3

View Text Solution

54. Write the structure of the NO_2

View Text Solution

55. Write the structure of the N_2O_4

View Text Solution

56. Write the structure of the N_2O_5

View Text Solution

57. Give equation for the preparation of the Hyponitrous acid

View Text Solution

58. Give equation for the preparation of the Nitrous acid

View Text Solution

59. Give equation for the preparation of the Pernitrous acid

View Text Solution

60. Give equation for the preparation of the Nitric acid

View Text Solution

61. Give equation for the preparation of the Pernitric acid

View Text Solution

62. Give reason for the Freshly prepared phosphorus becomes yellow on standing.

View Text Solution

63. Give reason for the Yellow phosphorus glows in dark.

View Text Solution

64. Give reason for the Nitrogen is a gas while phosphorus is a solid.

View Text Solution

65. Write the structure of the Hyponitrous acid

View Text Solution

66. Write the structure of the Hydronitrous acid

View Text Solution

67. Write the structure of the Nitrous acid

View Text Solution

68. Write the structure of the Pernitrous acid

View Text Solution

69. Write the structure of the Nitric acid

View Text Solution

70. Write the structure of the Pernitric acid

View Text Solution

71. Give the formula and the oxidation state of nitrogen in the Hyponitrous acid

View Text Solution

72. Give the formula and the oxidation state of nitrogen in the Nitrous acid

View Text Solution

73. Give the formula and the oxidation state of nitrogen in the Pernitrous acid

View Text Solution

74. Give the formula and the oxidation state of nitrogen in the Nitric acid

View Text Solution

75. Give the formula and the oxidation state of nitrogen in the Pernitric acid

View Text Solution

76. Explain the structure of white phosphorus.

View Text Solution

77. Explain why white phosphorus is kept under water.

View Text Solution

78. The red phosphorus is less reactive than white phosphorus. Explain with examples.

View Text Solution

79. Distinguish between white and red phosphorus interms of their properties

View Text Solution

80. Compare the chemical properties of white and red phosphorus.

View Text Solution

81. How phosphine is formed from White phosphorus. Give equations

View Text Solution

82. How phosphine is formed from Calcium phosphide. Give equations

View Text Solution

83. How phosphine is formed from Phosphorus acid. Give equations

View Text Solution

84. How phosphine is formed from Phosphonium iodide. Give equations

View Text Solution

85. Give equations for the Phosphine is heated at 317 K in the absence of air.

View Text Solution

86. Give equations for the Phosphine is heated with oxygen.

View Text Solution

87. Give equations for the Phosphine is treated with chlorine.

View Text Solution

88. Give examples for basic nature .

View Text Solution

89. Give examples for reducing property of phosphine.

View Text Solution

90. Briefly explain the structure of phosphine.

View Text Solution

91. What are Holmes signals? Mention its use.

View Text Solution

92. How is phosphorus trichloride prepared?

View Text Solution

93. What happens when white phosphorus is treated with a stream of chlorine gas.

View Text Solution

94. What happens when White phosphorus is treated with thionyl chloride

View Text Solution

95. What happens when Phosphorus trichloride is hydrolysed by cold water.

View Text Solution

96. How does phosphorus trichloride react with ethanol Give equations.

View Text Solution

97. How does phosphorus trichloride react with propionic acid? Give equations.

View Text Solution

98. Explain the structure of phosphorus trichloride.

View Text Solution

99. Give equations for the formation of PCl_5 from PCI_3

View Text Solution

100. Give equations for H_3PO_4 from PCl_5 .

View Text Solution

101. How does phosphorus pentachloride react with metals? Give examples

View Text Solution

102. Briefly outline the structure of PCl_5 .

View Text Solution

103. Mention the uses of phosphorus pentachloride.

View Text Solution

104. Hypophosphorus acid is monobasic and a good reducing agent. Explain.

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105. Briefly explain the structure of phosphorus trioxide

View Text Solution

106. Briefly explain the structure of phosphorus pentoxide

View Text Solution

107. What is the basicity of orthophosphorus acid? Explain with its structure. Will it act as a reducing

agent or not?

View Text Solution

108. Write the formula and structure of hypo phosphoric acid. What information do you get from its structure regarding its basicity and its reducing action?

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109. Orthophosphoric acid is tribasic and is not a reducing agent. Explain.

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110. Write the structure of pyrophosphoric acid and explain its basicity on the basis of the structure.

View Text Solution

111. Write the formula and the oxidation state of phosphorus in the Hypophosphorus acid

View Text Solution

112. Write the formula and the oxidation state of phosphorus in the Orthophosphorus acid

View Text Solution

113. Write the formula and the oxidation state of phosphorus in the Hypophosphoric acid

View Text Solution

114. Write the formula and the oxidation state of phosphorus in the Orthophosphoric acid

View Text Solution

115. Write the formula and the oxidation state of phosphorus in the Pyrophosphoric acid

View Text Solution

116. Complete and balance the equation :

$P_4 + H_2O \rightarrow$

View Text Solution

117. Complete and balance the equation :

$P_4O_6 + H_2O$

View Text Solution

118. Complete and balance the equation :

$P_4 + O_2 + H_2O \rightarrow$

View Text Solution

119. Complete and balance the equation :

$P_4O_{10} + H_2O \rightarrow$

View Text Solution

120. Complete and balance the equation :

$H_3PO_3 \rightarrow$

View Text Solution

121. Briefly explain the trend in physical properties of group 16 elements.

View Text Solution

122. Give two methods of preparation of oxygen in the laboratory.

View Text Solution

123. Give reasons for Oxygen exists as diatomic gas.

View Text Solution

124. Give reasons for Oxygen is paramagnetic.

View Text Solution

125. Give reasons for Oxygen forms strong hydrogen bonds

View Text Solution

126. How is ozone prepared in the laboratory?

View Text Solution

127. Write a note on the structure of ozone molecule.

View Text Solution

128. How does oxygen react with metals ? Give examples.

View Text Solution

129. How does oxygen react with non metals? Give examples.

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130. Explain why ozone is a more powerful oxidising agent than oxygen.

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131. Give an example for the oxidising action of ozone

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132. Explain how ozone can be estimated quantitatively.

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133. Mention the uses of oxygen.

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134. Name the stable allotrope of sulphur at ordinary temperature and pressure. What happens when it is heated to avoid $96^{\circ} C$?

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135. Give the characteristics of rhombic and monoclinic sulphur.

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136. How is sulphur dioxide prepared from sulphur

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137. How is sulphur dioxide prepared from galena

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138. How is sulphur dioxide prepared from iron pyrites.

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139. Give equation for the preparation of sulphur dioxide in the laboratory.

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140. With an example, prove sulphur dioxide in an acidic oxide.

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141. Give two examples for the oxidising property of sulphur dioxide.

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142. Give two examples to show that sulphur dioxide acts as a reducing agent.

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143. Give equation for the reaction in which sulphur dioxide is used for the manufacture of sulphuric acid by contact process.

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144. Explain the use of sulphur dioxide as a bleaching agent.

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145. Draw the structure of sulphur dioxide.

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146. Mention the uses of sulphur dioxide.

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147. Discuss the various steps involved in the manufacture of sulphuric acid by contact process?

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148. How do you prove that sulphuric acid is dibasic acid?

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149. Give two examples to show that conc. sulphuric acid is an oxidising agent.

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150. Complete and balance the equations.

$S + H_2SO_4 \rightarrow$

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151. Complete and balance the equations.

$P_4 + H_2SO_4 \rightarrow$

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152. Complete and balance the equations.

$H_2SO_4 + HI \rightarrow$

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153. Complete and balance the equations.

$H_2SO_4 + HBr \rightarrow$

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154. Give a brief account of the action of sulphuric acid on metals.

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155. What happens when Potassium chloride is heated with concentrated sulphuric acid.

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156. What happens when Potassium nitrate is heated with concentrated sulphuric acid.

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157. What happens when Sodium carbonate is heated with dilute sulphuric acid.

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158. What happens when Sodium bromide is heated with conc. sulphuric acid

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159. How will you detect sulphate radical in qualitative analysis.

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160. Write the formula and the oxidation state of sulphur in the Sulphurous acid

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161. Write the formula and the oxidation state of sulphur in the Sulphuric acid

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162. Write the formula and the oxidation state of sulphur in the Thio sulphuric acid

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163. Write the formula and the oxidation state of sulphur in the Peroxy mano sulphuric acid

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164. Write the formula and the oxidation state of sulphur in the Peroxydithionic acid

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165. Write the formula and the oxidation state of sulphur in the Dithionic acid

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166. Write the formula and the oxidation state of sulphur in the Pyrosulphuric acid.

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167. Write the structure of the Sulphurous acid

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168. Write the structure of the Sulphuric acid

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169. Write the structure of the Thiosulphuric acid

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170. Write the structure of the Dithionous acid

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171. Write the structure of the Pyro sulphuric acid

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172. Write the structure of the peroxy mono sulphuric acid

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173. Write the structure of the Peroxy di sulphuric acid

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174. Write the structure of the Dithionic acid

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175. Write the structure of the Polythionic acid

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176. Briefly outline the trend in physical properties of halogens.

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177. How is chlorine prepared from NaCl

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178. How is chlorine prepared from HCl

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179. How is chlorine prepared from bleaching powder

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180. Complete and balance the equation.

$KMnO_4 + HCl \rightarrow$

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181. Complete and balance the equation.

$K_2Cr_2O_7 + HCl \rightarrow$

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182. Complete and balance the equation.

$CaOCl_2 + H_2SO_4 \rightarrow$

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183. Briefly outline the manufacture of chlorine by Electrolytic process

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184. Briefly outline the manufacture of chlorine by Deacon's process

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185. Give example for the reaction of chlorine an Aluminium

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186. Give example for the reaction of chlorine an Sulphur

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187. Give example for the reaction of chlorine an boron

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188. Give example for the reaction of chlorine an arsenic

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189. Give example for the reaction of chlorine an Phosphorus

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190. What happens when chlorine is treated with excess of ammonia ? Give equation

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191. What happens when ammonia is treated with excess of chlorine? Give equation

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192. Give examples for the oxidising power of chlorine.

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193. What happens when chloride is treated with cold, dilute sodium hydroxide ?Give equations.

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194. What happens when chloride is treated with hot, concentrated solution of sodium hydroxide? Give equations.

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195. Explain the bleaching action of chlorine.

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196. Complete and balance the equation .

$FeSO_4 \rightarrow H_2SO_4 + Cl_2 \rightarrow$

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197. Complete and balance the equation .

$Na_2SO_3 + H_2O + Cl_2 \rightarrow$

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198. Complete and balance the equation .

$Cl_2 + H_2S \rightarrow$

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199. How is bleaching powder prepared? Give equation.

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200. Give a brief account of displacement reactions of halogens

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201. Mention the uses of chlorine.

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202. How is hydrochloric acid prepared?

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203. How does hydrochloric acid react with Zn ? Give equation

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204. How does hydrochloric acid react with Na_2CO_3 ? Give equation

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205. How does hydrochloric acid react with Na_2SO_4 ? Give equation

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206. What is aquaregia? Mention its uses.

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207. Mention the uses of hydrochloric acid.

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208. Briefly outline the trend in physical and chemical properties of hydrogen halides.

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209. How are hydrogen fluoride and hydrogen chloride prepared from CaF_2 and NaCl respectively? Give equation.

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210. Hydrogen bromide and hydrogen iodide cannot be prepared by treating their bromides and iodides with cone. H_2SO_4. Why?

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211. Give a method of preparation of hydrogen bromide and hydrogen iodide from sodium bromide and sodium iodide respectively.

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212. How is hydrogen bromide prepared from red phosphorus?

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213. Give a method of preparation of hydrogen iodide from red phosphorus.

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214. Hydrogen fluoride has a high melting and boiling point compared to other hydrogen halides. Give reason.

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215. Fluorine forms hydrogen dihalides while other hydrogen halides do not form hydrogen dihalides. Give reason

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216. Mention a reaction which is given by hydrogen fluoride alone, but not other hydrogen halides.

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217. What is etching? Explain with an example.

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218. Compare to reducing power of the hydrogen halides.

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219. Mention the conditions for the formation of inter halogen compound.

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220. Briefly outline the structure of interhalogens based on VSEPR theory. AB type

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221. Briefly outline the structure of interhalogens based on VSEPR theory. AB_3 type

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222. Briefly outline the structure of interhalogens based on VSEPR theory. AB_5 type

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223. Briefly outline the structure of interhalogens based on VSEPR theory. AB_7 type

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224. What happens when BrF_5 are treated with NaOH? Give equation.

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225. What happens when ICl are treated with NaOH? Give equation.

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226. Write a short note on oxides of halogens?

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227. Write a short note on oxy acids of halogens.

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228. Write a brief account of the trends in properties of group 18 (noble gases) elements

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229. How are the XeF_2 prepared? Give equations.

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230. How are the XeF_4 prepared? Give equations.

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231. How are the XeF_6 prepared? Give equations.

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232. Explain what happens when XeF_6 is heated at $50^\circ C$ in a sealed quartz vessel.

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233. Explain what happens when vapours of XeF_6 is treated with water vapour.

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234. Explain what happens when XeF_6 reacts with 2.5 M sodium hydroxide.

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235. Give an example for the oxidising property of sodium perxenate.

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236. Name the addition compounds formed by the Xenon difluoride.

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237. Explain the structure of Xenon fluoride (XeF_2) .

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238. Explain the structure of Xenon tetrafluoride (XeF_4) .

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239. Explain the structure of Xenon hexa fluoride (XeF_6) .

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240. Explain the structure of Xenon oxy difluoride $(XeOF_2)$.

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241. Explain the structure of Xenon oxy tetra fluoride $(XeOF_4)$

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242. Explain the structure of Xenon trioxide (XeO_3) .

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243. Mention the uses of Xenon.

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244. Mention the uses of radon.

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