Date Planned : __ / __ / __	Daily Tutorial Sheet-9	Expected Duration : 90 Min
Actual Date of Attempt : __ / __ / __	JEE Advanced (Archive)	Exact Duration :_____

Paragraph for Q. 121 to 123

The nodal gases have closed-shell electronic configuration and are monoatomic gases under normal conditions. The low boiling points of the lighter noble gases are due to weak dispersion forces between the atoms and the absence of other interatomic interactions.

The direct reaction of xenon with fluorine leads to a series of compounds with oxidation numbers $+2, +4$ and $+6$. XeF_4 reacts violently with water to give XeO_3. The compounds of xenon exhibit rich stereochemistry and their geometries can be deduced considering the total number of electron pairs in the valence shell.

121. Argon is used in arc welding because of its : **(2007)**

(A) low reactivity with metal **(B)** ability to lower the melting points of metal

(C) flammability **(D)** high calorific value

122. The structure of XeO_3 is : **(2007)**

(A) linear **(B)** planar **(C)** pyramidal **(D)** T-shaped

123. XeF_4 and XeF_6 are excepted to be : **(2007)**

(A) oxidising **(B)** reducing **(C)** strongly basic **(D)** None of these

For Q. 124 to 125

(A) Statement-1 is True, Statement-2 is True; Statement-2 is a correct explanation for Statement-1

(B) Statement-1 is True, Statement-2 is True; Statement-2 is NOT a correct explanation for Statement-1

(C) Statement-1 is True, Statement-2 is False

(D) Statement-1 is False, Statement-2 is True

124. **Statement-1 :** In water, orthoboric acid behaves as a weak monobasic acid.

Statemant-2 : In water, orthoboric acid and acts as a proton donor. **(2007)**

125. **Statement-1 :** Boron always forms covalent bond.

Statemant-2 : The small size of B^{3+} favours formation of covalent bond. **(2007)**

126. Aqueous solution of $Na_2S_2O_3$ on reaction with Cl_2 gives : **(2008)**

(A) $Na_2S_4O_6$ **(B)** $NaHSO_4$ **(C)** NaCl **(D)** NaOH

Paragraph for Q. 127 to 129

There are some deposits of nitrates and phosphates in earth's crust. Nitrates are more soluble in water. Nitrates are difficult to reduce under the laboratory conditions but microbes do it easily. Ammonia forms large number of complexes with transition metal ions. Hybridization easily explains the case of sigma donation capability of NH_3 and PH_3. Phosphine is flammable gas and is prepared from white phosphorus.

127. Among the following, the correct statement is : **(2008)**

(A) Phosphates have no biological significance in humans

(B) Between nitrates and phosphates, phosphates are less abundant in earth's crust

(C) Between nitrate and phosphates, nitrates are less abundant in earth's crust

(D) Oxidation of nitrates is possible in soil

128. Among the following, the correct statement is : **(2008)**

(A) Between NH_3 and PH_3, NH_3 is a better electron donor because the lone pair of electrons occupies spherical 's' orbital and is less directional

(B) Between NH_3 and PH_3, PH_3 is a better electron donor because the lone pair of electrons occupies spherical sp^3 orbital and is more directional

(C) Between NH_3 and PH_3, NH_3 is a better electron donor because the lone pair of electrons occupies spherical sp^3 orbital and is more directional

(D) Between NH_3 and PH_3, PH_3 is a better electron donor because the lone pair of electrons occupies spherical 's' orbital and is less directional

129. White phosphorus on reaction with NaOH gives PH_3 as one of the products. This is a : **(2008)**

(A) dimerization reaction **(B)** disproportionation reaction

(C) condensation reaction **(D)** precipitate reaction

130. A solution of colourless salt H on boiling with excess NaOH peoduces a non-flammable gas. The gas evolution ceases after sometime. Upon addition of Zn dust to the same solution, the gas evolution restarts. The colourless salt(s) H is/are : **(2008)**

(A) NH_4NO_3 **(B)** NH_4NO_2 **(C)** NH_4Cl **(D)** $(NH_4)_2SO_4$

131. **Statement-1 :** Pb^{4+} compounds are stronger oxidising agents than Sn^{4+} compounds.

Statemant-2 : The higher oxidation states for the group 14 elements are more stable for the heavier members of the group due to 'inert pair effect'. **(2008)**

(A) Statement-1 is True, Statement-2 is True; Statement-2 is a correct explanation for Statement-1

(B) Statement-1 is True, Statement-2 is True; Statement-2 is NOT a correct explanation for Statement-1

(C) Statement-1 is True, Statement-2 is False

(D) Statement-1 is False, Statement-2 is True

132. The reaction of P_4 with X leads selectively to P_4O_6. The X is : **(2009)**

(A) dry O_2 **(B)** a mixture of O_2 and N_2

(C) moist O_2 **(D)** O_2 in the presence of aqueous NaOH

133. The nitrogen oxide(s) that contain(s) N – N bond(s) is(are) : **(2009)**

(A) N_2O **(B)** N_2O_3 **(C)** N_2O_4 **(D)** N_2O_5

134. Match each of the reactions given in column-I with the corresponding product(s) given in column-II. **(2009)**

	Column-I		**Column-II**
(A)	Cu + dil. HNO_3	**(p)**	NO
(B)	Cu + conc. HNO_3	**(q)**	NO_2
(C)	Zn + dil. HNO_3	**(r)**	N_2O
(D)	Zn + conc. HNO_3	**(s)**	$Cu(NO_3)_2$
		(t)	$Zn(NO_3)_2$

135. The coordination number of Al in the crystalline state of $AlCl_3$ is : **(2009)**