

Exercise # 1

- Q.1** Calomel is :
[1] $\text{Hg}_2\text{Cl}_2 + \text{Hg}$ [2] HgCl_2 [3] $\text{Hg} + \text{HgCl}_2$ [4] Hg_2Cl_2
- Q.2** Mixture used of the tips of match stick is
[1] $\text{S} + \text{K}$ [2] Sb_2S_3
[3] $\text{K}_2\text{Cr}_2\text{O}_7 + \text{S} + \text{red} + \text{P}$ [4] $\text{K}_2\text{Cr}_2\text{O}_7 + \text{K} + \text{S}$
- Q.3** White phosphorus reacts with caustic soda. The products are PH_3 and NaH_2PO_2 . This reaction is an example of
[1] Oxidation [2] Reduction
[3] Oxidation and reduction [4] Neutralization
- Q.4** Phosphine is not obtained by the reaction
[1] White P is heated with NaOH [2] Red P is heated with NaOH
[3] Ca_3P_2 reacts with water [4] Phosphorus trioxide is boiled with water
- Q.5** One of the acid listed below is formed from P_2O_3 and rest are formed from P_2O_5 . The acid formed from phosphorus (III) oxide is
[1] HPO_3 [2] $\text{H}_4\text{P}_2\text{O}_7$ [3] H_3PO_4 [4] H_3PO_3
- Q.6** Hypophosphorus acid is
[1] A tribasic acid [2] A dibasic acid [3] A monobasic acid [4] Not acidic at all
- Q.7** When orthophosphoric acid is heated to 600°C . the product formed is
[1] Phosphine, PH_3 [2] Phosphorus pentoxide, P_2O_5
[3] Phosphorus acid, H_3PO_3 [4] Metaphosphoric acid, HPO_3
- Q.8** Thomas slag is
[1] $\text{Ca}_3(\text{PO}_4)_2$ [2] MnSiO_3 [3] CaSiO_3 [4] FeSiO_3
- Q.9** Blasting of TNT is done by mixing
[1] NH_4Cl [2] NH_4NO_3 [3] NH_4NO_2 [4] $(\text{NH}_4)_2\text{SO}_4$
- Q.10** Which element is found in free state
[1] Iodine [2] Sulphur [3] Phosphorus [4] Magnesium
- Q.11** The element which liberates oxygen gas from water is
[1] P [2] Na [3] F [4] I
- Q.12** Ozone belongs to which group of the periodic table
[1] V group [2] VI group [3] VII group [4] None of the above
- Q.13** Which would quickly absorbs oxygen
[1] Alkaline solution of pyrogallol [2] Conc. H_2SO_4
[3] Lime water [4] Alkaline solution of CuSO_4
- Q.14** The formula of ozone is O_3 , it is
[1] An allotrope of oxygen [2] Compound of oxygen
[3] Isotope of oxygen [4] None of the above
- Q.15** When SO_2 is passed through acidified solution of H_2S
[1] H_2SO_4 is formed [2] H_2SO_3 is formed
[3] Sulphur is precipitated [4] None of these
- Q.16** Bleaching action of SO_2 is due to
[1] Reduction [2] Oxidation [3] Hydrolysis [4] Its acidic nature
- Q.17** Which one of the gas dissolves in H_2SO_4 to give oleum
[1] SO_2 [2] H_2S [3] S_2O [4] SO_3

- Q.18** Hypo is used in photography to
 [1] Reduce AgBr grains to metallic silver
 [2] Convert the metallic silver to silver salt
 [3] Remove undecomposed silver bromide as a soluble complex
 [4] Remove reduced silver
- Q.19** Hypo is used in photography because of its
 [1] Reducing behaviour [2] Oxidising behaviour
 [3] Complex forming behaviour [4] Reaction with light
- Q.20** Bromine is liberated when an aqueous solution of potassium bromide is treated with
 [1] Cl₂ [2] I₂ [3] Dilute H₂SO₄ [4] SO₂
- Q.21** Chlorine was discovered by
 [1] Davy [2] Priestley [3] Rutherford [4] Sheele
- Q.22** Which of the following will not occur
 [1] $\text{Fe} + \text{H}_2\text{SO}_4 \rightarrow \text{FeSO}_4 + \text{H}_2$ [2] $\text{Cu} + 2\text{AgNO}_3 \rightarrow \text{Cu}(\text{NO}_3)_2 + 2\text{Ag}$
 [3] $2\text{KBr} + \text{I}_2 \rightarrow 2\text{KI} + \text{Br}_2$ [4] $\text{CuO} + \text{H}_2 \rightarrow \text{Cu} + \text{H}_2\text{O}$
- Q.23** Which one of the halogen acids is a liquid
 [1] HF [2] HCl [3] HBr [4] HI
- Q.24** Br₂ gas turns starch iodide paper
 [1] Blue [2] Red [3] Colorless [4] Yellow
- Q.25** When Cl₂ gas is passed through hot and conc. solution of KOH, following compound is formed
 [1] KCl [2] KClO₃ [3] KClO₂ [4] KClO₄
- Q.26** Deacon's process is used in the manufacture of
 [1] Bleaching powder [2] Sulphuric acid [3] Nitric acid [4] Chlorine
- Q.27** A quick supply of Cl₂ gas may be made by reacting crystals of KMnO₄ with a concentrated solution of
 [1] Potassium chloride [2] Sodium chloride [3] Bleaching powder [4] Hydrochloric acid
- Q.28** Chlorine can remove
 [1] Br from NaBr solution [2] F from NaF solution [3] Cl from NaCl solution [4] F from CaF₂ solution
- Q.29** Hydrolysis of which of the following does not occur
 [1] VCl₄ [2] TiCl₄ [3] SiCl₄ [4] CCl₄
- Q.30** In KI solution I₂ readily dissolves and forms
 [1] I⁻ [2] KI₂ [3] KI₂⁻ [4] KI₃
- Q.31** Which reaction cannot be used for the production of halogen acid
 [1] $2\text{KBr} + \text{H}_2\text{SO}_4 \rightarrow \text{K}_2\text{SO}_4 + 2\text{HBr}$ [2] $\text{NaHSO}_4 + \text{NaCl} \rightarrow \text{Na}_2\text{SO}_4 + \text{HCl}$
 [3] $\text{NaCl} + \text{H}_2\text{SO}_4 \rightarrow \text{NaHSO}_4 + \text{HCl}$ [4] $\text{CaF}_2 + \text{H}_2\text{SO}_4 \rightarrow \text{CaSO}_4 + 2\text{HF}$
- Q.32** Fluorine can be prepared only by electroanalysis opposite to other halogens which are prepared by simple chemical processes, because
 [1] F is very active [2] F is very strong oxidizing agent
 [3] F is very poisonous [4] The electrolysis of fluoride is easy
- Q.33** Which of the following after reacting with KI do not remove iodine
 [1] CuSO₄ [2] K₂Cr₂O₇ [3] HNO₃ [4] HCl
- Q.34** Which of the following pairs is not correctly matched
 [1] A halogen which is liquid at room temperature – Bromine
 [2] The most electronegative element – Fluorine
 [3] The most reactive halogen – Fluorine
 [4] The strongest oxidizing halogen – Iodine

- Q.35** Iodine is formed when potassium iodide reacts with a solution of
[1] ZnSO_4 [2] CuSO_4 [3] $(\text{NH}_4)_2\text{SO}_4$ [4] Na_2SO_4
- Q.36** Fluorine is a stronger oxidising agent than chlorine in aqueous solution. This is attributed to many factors except
[1] Heat of dissociation [2] Electron affinity [3] Heat of hydration [4] Ionisation potential
- Q.37** Chlorine gas is dried over
[1] CaO [2] NaOH [3] KOH [4] Conc. H_2SO_4
- Q.38** A gas reacts with CaO , but not with NaHCO_3 . The gas is
[1] CO_2 [2] Cl_2 [3] N_2 [4] O_2
- Q.39** In the manufacture of bromine from sea water, the mother liquor containing bromides is treated with
[1] CO_2 [2] Cl_2 [3] I_2 [4] SO_2
- Q.40** When I_2 is dissolved in CCl_4 , the colour that results is
[1] Brown [2] Violet [3] Colourless [4] Bluish green
- Q.41** Which of the following solution will not hydrolyse
[1] KNO_3 [2] KCN
[3] Potassium succinate [4] Potassium carbonate
- Q.42** Nitrolim is
[1] $\text{Ca}(\text{NO}_3)_2$ [2] $\text{Ca}(\text{CN})_2$ [3] $\text{CaCN}_2 + \text{C}$ [4] CaCN_4
- Q.43** Bleaching powder is obtained by the interaction of chlorine and
[1] Conc. solution of $\text{Ca}(\text{OH})_2$ [2] Dilute solution of $\text{Ca}(\text{OH})_2$
[3] Dry calcium oxide [4] Dry slaked lime
- Q.44** For bleaching powder, which is incorrect
[1] Reacts with dilute acid to release chlorine [2] Oxidising agent
[3] Light yellow coloured powder [4] Highly soluble in water
- Q.45** Which one of the following is a true peroxide
[1] SO_2 [2] BaO_2 [3] MnO_2 [4] NO_2
- Q.46** Bone ash contains
[1] CaO [2] CaSO_4 [3] $\text{Ca}_3(\text{PO}_4)_2$ [4] $\text{Ca}(\text{H}_2\text{PO}_4)_2$
- Q.47** Which of the following elements does not form stable diatomic molecules
[1] Iodine [2] Phosphorus [3] Nitrogen [4] Oxygen
- Q.48** Producer gas is a mixture of
[1] CO and N_2 [2] CO_2 and H_2 [3] CO and H_2 [4] CO_2 and N_2
- Q.49** Which one of the following combines with $\text{Fe}(\text{II})$ ions to form a brown complex
[1] N_2O [2] NO [3] N_2O_3 [4] N_2O_5
- Q.50** Which of the following is the most suitable drying agent for ammonia gas
[1] Calcium oxide [2] Anhydrous calcium chloride
[3] Phosphorus pentoxide [4] Conc. sulphuric acid
- Q.51** Each of the following is true for white and red phosphorus except that they
[1] Are both soluble in CS_2 [2] Can be oxidised by heating in air
[3] Consists of same kind of atoms [4] Can be converted into one another
- Q.52** Which of the following is a tetrabasic acid
[1] Orthophosphorus acid [2] Orthophosphoric acid
[3] Metaphosphoric acid [4] Pyrophosphoric acid
- Q.53** Of the different allotropes of phosphorus, the one which is most reactive is
[1] Violet phosphorus [2] Scarlet phosphorus [3] Red phosphorus [4] White phosphorus

- Q.54** Phosphine is generally prepared in the laboratory
[1] By heating phosphorus in a current of hydrogen
[2] By heating white phosphorus with aqueous solution of caustic potash
[3] By decomposition of P_2H_4 at $110^\circ C$
[4] By heating red phosphorus with an aqueous solution of caustic soda
- Q.55** Nitrogen dioxide cannot be obtained by heating
[1] KNO_3 [2] $Pb(NO_3)_2$ [3] $Cu(NO_3)_2$ [4] $AgNO_3$
- Q.56** Non-combustible hydride is
[1] NH_3 [2] PH_3 [3] AsH_3 [4] SbH_3
- Q.57** A certain element forms a solid oxide which when dissolved in water forms an acidic solution, the element is
[1] Argon [2] Potassium [3] Phosphorus [4] Sulphur
- Q.58** Which of the following nitrates when heated gives off a gas or a mixture of gases which cannot relight a glowing splinter
[1] Sodium nitrate [2] Ammonium nitrate [3] Lead nitrate [4] Potassium nitrate
- Q.59** When concentrated nitric acid is heated, it decomposes to give
[1] O_2 and N_2 [2] NO [3] N_2O_5 [4] NO_2 and O_2
- Q.60** The element which catches fire in air at $30^\circ C$ and is stored under water is
[1] Calcium [2] Sodium [3] Phosphorus [4] Zinc
- Q.61** Among the member of V A group (N, P, As, Sb and Bi), which of the following properties shows an increase as we go down from nitrogen to bismuth
[1] Stability of 3 oxidation state [2] Oxidising character of hydrides
[3] Electronegativity [4] Acidic nature of the pentoxide
- Q.62** The important method for the fixation of nitrogen is
[1] Haber [2] Solvay [3] Deacon [4] Fisher method
- Q.63** Which of the following is oxidised in air
[1] White phosphorus [2] CH_4 [3] H_2O [4] $NaCl$
- Q.64** A pure sample of nitrogen is prepared by heating
[1] Calcium cyanamide [2] Barium azide
[3] Ammonium hydroxide [4] Ammonium nitrite
- Q.65** If phosphoric acid is allowed to react with sufficient quantity of $NaOH$, the product obtained is
[1] $NaHPO_3$ [2] Na_2HPO_4 [3] NaH_2PO_4 [4] Na_3PO_4
- Q.66** In the catalytic oxidation of ammonia an oxide is formed which is used in the preparation of HNO_3 . This oxide is
[1] N_2O_5 [2] N_2O_4 [3] NO_2 [4] NO
- Q.67** Which acid is formed by P_2O_3
[1] H_3PO_4 [2] H_3PO_3 [3] HPO_3 [4] $H_4P_2O_7$
- Q.68** Dehydrated phosphorus trichloride in water gives
[1] HPO_3 [2] H_3PO_4 [3] H_3PO_2 [4] H_3PO_3
- Q.69** Which oxide of nitrogen is coloured gas
[1] N_2O [2] NO [3] N_2O_5 [4] N_2O_5
- Q.70** Phosphorus is kept in
[1] Water [2] Kerosene oil [3] Alcohol [4] Ammonia
- Q.71** In vapour state, white phosphorus is mainly in the form
[1] P_3 [2] P_4 [3] P_{16} [4] P_5

- Q.72** Of the following, non-existent compound is
[1] PH_4I [2] As_2O_3 [3] SbCl_2 [4] As_2H_3
- Q.73** When ammonia is passed over heated CuO , it is oxidised to
[1] N_2 [2] NO_2 [3] N_2O [4] HNO_2
- Q.74** The cyanide ion, CN^- and N_2 are isoelectronic. But in contrast to CN^- , N_2 is chemically inert because of
[1] Low band energy [2] Absence of bond polarity
[3] Unsymmetrical electron distribution
[4] Presence of more number of electrons in bonding orbitals
- Q.75** Which statement is not correct for nitrogen
[1] It has a small size [2] It does not readily react with O_2
[3] It is a typical non-metal [4] d-orbitals are available for bonding
- Q.76** Laughing gas is prepared by heating
[1] NH_4Cl [2] $(\text{NH}_4)_2\text{SO}_4$ [3] $\text{NH}_4\text{Cl} + \text{NaNO}_3$ [4] NH_4NO_3
- Q.77** Nitrogen (I) oxide is produced by
[1] Thermal decomposition of ammonium nitrate [2] Disproportionation of N_2O_4
[3] Thermal decomposition of ammonium nitrite [4] Interaction of hydroxyl amine and nitrous acid
- Q.78** Which of the following is not correct for N_2O
[1] It is called laughing gas [2] It is nitrous oxide
[3] It is not a linear molecule [4] It is least reactive in all oxides of nitrogen
- Q.79** When lightning flash is produced, which gas may form
[1] Nitrous oxide [2] Nitrogen dioxide [3] Dinitrogen pentoxide [4] Nitric oxide
- Q.80** Red phosphorus can be obtained from white phosphorus by
[1] Heating it with a catalyst in an inert atmosphere
[2] Distilling it in an inert atmosphere
[3] Dissolving it in carbon disulphide and crystallizing
[4] Melting it and pouring the liquid into water
- Q.81** Bones glow in the dark because
[1] They contain shining material
[2] They contain red phosphorus
[3] White phosphorus undergoes slow combustion in contact with air
[4] White phosphorus changes into red from
- Q.82** Which one of the following is the true covalent oxide of iodine
[1] I_2O_4 [2] I_2O_5 [3] I_2O_7 [4] I_2O_9
- Q.83** KI when heated with conc. H_2SO_4 gives
[1] HI [2] I_2 [3] HIO_3 [4] KIO_3
- Q.84** HCl is a gas, but HF is a low boiling liquid. This is because
[1] H-F bond is strong
[2] H-F bond is weak
[3] The molecules aggregate because of hydrogen bonding in HF
[4] HF is weak acid
- Q.85** Concentrated HNO_3 reacts with I_2 to give
[1] HI [2] HOI [3] HOIO_2 [4] HOIO_3
- Q.86** The formula of some fluorides are given below. Which of them will combine further with fluorine
[1] IF_5 [2] NaF [3] CaF_2 [4] SF_5

- Q.87** Every inert gas atom
 [1] Has a saturated outermost shell [2] Has one electron in outermost shell
 [3] Has eight electrons in outermost shell [4] Has two electrons in outermost shell
- Q.88** Deep sea divers used to respire in mixture of
 [1] Oxygen and argone [2] Oxygen and helium
 [3] Oxygen and nitrogen [4] Oxygen and hydrogen
- Q.89** Which of the following gases exist more abundantly in nature than the other
 [1] Helium [2] Neon [3] Argon [4] Krypton
- Q.90** Noble gases do not react with other elements because
 [1] They have completely paired up and stable electron shells
 [2] The sizes of their atoms are very small
 [3] Are not found in abundance [4] Are monoatomic
- Q.91** Which of the following is not obtained by direct reaction of constituent elements
 [1] XeF₂ [2] XeF₄ [3] XeO₃ [4] XeF₆
- Q.92** Bromine water reacts with SO₂ to form
 [1] H₂O and HBr [2] H₂SO₄ and HBr [3] HBr and S [4] S and H₂O
- Q.93** Which one of the following pairs of substances when mixed, produce chlorine gas at room temperature
 [1] NaCl and MnO₂ [2] NaCl and HNO₃ (conc.)
 [3] NaCl and H₂SO₄ (conc.) [4] HCl (conc.) and KMnO₄
- Q.94** A well known reagent which contains copper sulphate, sodium potassium tarterate and sodium hydroxide is
 [1] Fenton's reagent [2] Schiff's reagent [3] Fehling's solution [4] Nessler's reagent
- Q.95** The most dangerous method of preparing hydrogen would be by the action of HCl and
 [1] Al [2] K [3] Fe [4] Zn
- Q.96** Phosphine is prepared by the reaction of
 [1] P and H₂SO₄ [2] P and NaOH [3] P and H₂S [4] P and HNO₃
- Q.97** Chemical formula for the phosphorus molecule is
 [1] P [2] P₄ [3] P₂ [4] P₅
- Q.98** Ammonium nitrate decomposes on heating into
 [1] Ammonia and nitric acid [2] Nitrous oxide and water
 [3] Nitrogen, hydrogen and ozone [4] Nitric oxide, nitrogen dioxide and hydrogen
- Q.99** Among the following nitrates, Lead nitrate, Silver nitrate and Ammonium nitrate; the one that decomposes without leaving any solid residue is
 [1] Lead nitrate [2] Ammonim nitrate [3] Siliver nitrate [4] Sodium nitrate
- Q.100** Which of the following elements is most metallic
 [1] Phosphorus [2] Aresenic [3] Antimony [4] Bismuth

Answer Key - 1

Qs	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25
Ans	4	3	3	2	4	3	4	1	2	2	3	4	1	1	3	1	4	3	3	1	1	3	1	1	2
Qs	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50
Ans	4	4	1	4	4	1	2	4	4	2	2	4	2	2	2	1	3	4	4	2	3	2	1	2	1
Qs	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75
Ans	1	4	4	2	1	1	3	2	4	3	1	1	1	2	4	4	2	4	4	1	2	3	1	4	4
Qs	76	77	78	79	80	81	82	83	84	85	86	87	88	89	90	91	92	93	94	95	96	97	98	99	100
Ans	4	4	3	4	1	3	2	2	3	3	1	1	2	3	1	3	2	4	3	2	2	3	2	2	4

Exercise # 2

- Q.1** FeSO_4 forms dark brown ring with
[1] NO_2 [2] N_2O_3 [3] NO [4] N_2O
- Q.2** When HNO_3 is heated with P_2O_5 , it forms
[1] N_2O [2] NO [3] NO_3 [4] N_2O_5
- Q.3** Which of the following oxide of nitrogen is the anhydride of HNO_3
[1] NO [2] N_2O_3 [3] N_3O_4 [4] N_2O_5
- Q.4** Phosphorus is manufactured by heating in a electric furnace a mxiture of
[1] Bone ash and coke [2] Bone ash and silica
[3] Bone ash, silica and coke [4] None of the above
- Q.5** Of the following metal nitrates, the one which gives nitrous oxide by thermal decomposition is
[1] $\text{Pb}(\text{NO}_3)_2$ [2] AgNO_3 [3] KNO_3 [4] NH_4NO_3
- Q.6** Nitrous oxide
[1] is a mixed oxide [2] is an acidic oxide
[3] is highly soluble in hot water [4] supports the combustion of sulphur
- Q.7** NO_2 is a mixed oxide is proved by the first that with NaOH , it forms
[1] Nitrites salt [2] Nitrates salt
[3] Mixture of nitrate and nitrite [4] Ammonia
- Q.8** Superphosphate of lime is
[1] A mixture of normal calcium phosphate and gypsum
[2] A mixture of primary calcium phosphate and gypsum
[3] Normal calcium phosphate
[4] Soluble calcium phosphate
- Q.9** White phosphorus contains
[1] P_5 molecules [2] P_4 molecules [3] P_6 molecules [4] P_2 molecules
- Q.10** V–A group precipitate was dissolved in HNO_3 and treated with excess of NH_4OH . It gives a white ppt. because of
[1] $\text{Cu}(\text{OH})_2$ [2] $\text{Cd}(\text{OH})_2$ [3] $\text{Bi}(\text{OH})_2$ [4] $\text{H}_2(\text{OH})_2$
- Q.11** Which of the following elements of group VA does not show allotropy
[1] N [2] Bi [3] P [4] As
- Q.12** Which is the most explosive
[1] NCl_3 [2] PCl_3 [3] AsCl_3 [4] All the above
- Q.13** Pure N_2 gas is obtained from
[1] $\text{NH}_3 + \text{NaNO}_2$ [2] $\text{NH}_4\text{Cl} + \text{NaNO}_2$ [3] $\text{N}_2\text{O} + \text{Cu}$ [4] $(\text{NH}_4)_2\text{CrO}_7$
- Q.14** Which is not a ionic peroxide
[1] K_2O_2 [2] Na_2O_2 [3] PbO_2 [4] BaO_2
- Q.15** A substance on heating gives oxygen. Truns acidified KI solution violet and reduces acidified KMnO_4 solution. Hence the substance is :
[1] SO_3 [2] KNO_3 [3] H_2O_2 [4] All the above
- Q.16** A mixture of ammonia and air at about 800°C in the presence of Pt gauze forms
[1] N_2O [2] NO [3] NH_2OH [4] N_2O_3
- Q.17** Nitrogen is essential constituent of all
[1] Proteins [2] Fats [3] Proteins and fats [4] None of these
- Q.18** The chemical used for cooling in refrigeration is
[1] CO_2 [2] NH_4OH [3] NH_4Cl [4] Liquid NH_3

- Q.19** Phosphide ion has the electronic structure similar to that of
 [1] Nitride ion [2] Fluoride ion [3] Sodium ion [4] Chloride ion
- Q.20** Red phosphorus is less reactive than yellow phosphorus because
 [1] Its colour is red [2] It is highly polymerised
 [3] It is hard [4] It is insoluble in C_2H_5OH
- Q.21** $BiCl_3$ on hydrolysis forms a white precipitate of
 [1] Bismuthic acid [2] Bismuth oxychloride
 Bismuth pentachloride [4] Bismuth hydroxide
- Q.22** At high temperature nitrogen combines with calcium carbide (CaC_2) to give
 [1] Calcium cyanide [2] Calcium cyanamide
 [3] Calcium carbonate [4] Calcium nitride
- Q.23** When equal weights of the two fertilizers, urea and ammonium sulphate are taken, urea contains
 [1] Less nitrogen than ammonium sulphate
 [2] As much nitrogen as ammonium sulphate
 [3] Twice the amount of nitrogen present in ammonium sulphate
 [4] More than twice the amount of nitrogen present in ammonium sulphate
- Q.24** In the following reaction
 $P_4 + 3 NaOH + 3H_2O \rightarrow PH_3 + 3 NaH_2PO_2$
 [1] Phosphorus is oxidised [2] Phosphorus is oxidised and reduced
 [3] Phosphorus is reduced [4] Sodium is oxidised
- Q.25** Oxygen was discovered by
 [1] Priestley [2] Boyle [3] Scheele [4] Cavandish
- Q.26** When oxygen is passed through a solution of Na_2SO_3 we get
 [1] Na_2SO_4 [2] Na_2S [3] $NaHSO_4$ [4] NaH
- Q.27** Ozone is obtained from oxygen
 [1] By oxidation at high temperature [2] By oxidation using a catalyst
 [3] By silent electric discharge [4] By conversion at high pressure
- Q.28** Copper turnings when heated with concentrated sulphuric acid will give
 [1] SO_2 [2] SO_3 [3] H_2S [4] O_2
- Q.29** A solution of sulphur dioxide in water reacts with H_2S precipitating sulphur. Here sulphur dioxide acts as
 [1] An oxidising agent [2] A reducing agent [3] An acid [4] A catalyst
- Q.30** When SO_2 is passed through cupric chloride solution
 [1] A white precipitate is obtained
 [2] The solution becomes colourless
 [3] The solution becomes colourless and a white precipitate of Cu_2Cl_2 is obtained
 [4] No visible change takes place
- Q.31** About H_2SO_4 which is incorrect
 [1] Reducing agent [2] Dehydrating agent [3] Sulphonating agent [4] Highly viscous
- Q.32** In the reaction
 $2Ag + 2H_2SO_4 \rightarrow Ag_2SO_4 + 2H_2O + SO_2$ H_2SO_4 acts as
 [1] Reducing agent [2] Oxidising agent [3] Catalytic agent [4] Dehydrating agent
- Q.33** In the reaction $HCOOH \xrightarrow{H_2SO_4} CO + H_2O$
 H_2SO_4 acts as
 [1] Dehydrating agent [2] Oxidising agent [3] Reducing agent [4] All the above

- Q.34** Oxalic acid when heated with conc. H_2SO_4 gives out
 [1] H_2O and CO_2 [2] CO and CO_2 [3] Oxalic sulphate [4] CO_2 and H_2S
- Q.35** The acid used in lead storage cells is
 [1] Phosphoric acid [2] Nitric acid [3] Sulphuric acid [4] Hydrochloric acid
- Q.36** The products of the chemical reaction between $\text{Na}_2\text{S}_2\text{O}_3$, Cl_2 and H_2O are
 [1] $\text{S} + \text{HCl} + \text{Na}_2\text{S}$ [2] $\text{S} + \text{HCl} + \text{Na}_2\text{SO}_4$ [3] $\text{S} + \text{HCl} + \text{Na}_2\text{SO}_3$ [4] $\text{S} + \text{NaClO}_3 + \text{H}_2\text{O}$
- Q.37** Glass is soluble in
 [1] HF [2] H_2SO_4 [3] HCl_4 [4] Aqua-regia
- Q.38** Chlorine reacts with sodium hydroxide under various condition to give
 [1] Sodium chloride [2] Sodium hypochlorite [3] Sodium chlorate [4] All of the above
- Q.39** On boiling an aqueous solution of KClO_3 with iodine, the following product is obtained
 [1] KIO_3 [2] KClO_4 [3] KIO_4 [4] KCl
- Q.40** Colour of iodine solution is disappeared by shaking it with aqueous solution of
 [1] H_2SO_4 [2] Na_2S [3] $\text{Na}_2\text{S}_2\text{O}_3$ [4] Na_2SO_4
- Q.41** Which of the following is correct
 [1] Iodine is a solid [2] Chlorine is insoluble in water
 [3] Iodine is more reactive than bromine [4] Bromine is more reactive than chlorine
- Q.42** Acid employed for etching glass is
 [1] Aqua-regia [2] HF [3] HClO_4 [4] H_2SO_4
- Q.43** Sea weed is employed as a source of manufacture of
 [1] F [2] I [3] Br [4] Cl
- Q.44** In dark, which of the following reacts with hydrogen
 [1] Br_2 [2] F_2 [3] I_2 [4] Cl_2
- Q.45** In the isolation of fluorine, a number of difficulties were encountered. Which statement is correct
 [1] The potential required for the discharge of the fluoride ions is the lowest
 [2] Fluorine reacts with most glass vessels
 [3] Fluorine has great affinity for hydrogen
 [4] Electrolysis of aqueous HF gives ozonised oxygen
- Q.46** When chlorine water is exposed to sunlight, O_2 is liberated. Hence
 [1] Hydrogen has little affinity of O_2 [2] Hydrogen has more affinity to O_2
 [3] Hydrogen has more affinity to Cl_2 [4] It is a reducing agent
- Q.47** Chlorine is used in water for
 [1] Killing germs [2] Prevention of pollution
 [3] Cleasing [4] Removing dirt
- Q.48** Chlorine cannot be used
 [1] As bleaching agent [2] In sterilisation
 [3] In preparation of antiseptic [4] For extraction of silver and copper
- Q.49** Chlorine acts as a bleaching agent only in presence of
 [1] Dry air [2] Moisture [3] Sunlight [4] Pure oxygen
- Q.50** Euchlorine is a mixture of
 [1] Cl_2 and SO_2 [2] Cl_2 and ClO_2 [3] Cl_2 and CO [4] None of these
- Q.51** When chlorine is passed over dry slaked lime at room temperature, the main reaction product is
 [1] $\text{Ca}(\text{ClO}_2)_2$ [2] CaCl_2 [3] CaOCl_2 [4] $\text{Ca}(\text{OCl}_2)_2$
- Q.52** Bromine is obtained commercially from sea water by adding
 [1] AgNO_3 solution [2] Crystals of NaBr [3] Cl_2 [4] C_2H_4

- Q.53** A solution of HCl in water is good conductor while gaseous hydrogen chloride is not. This is due to the reason that
 [1] Water is a good conductor of electricity [2] HCl in water ionises
 [3] Gas can not conduct electricity but water can [4] None of these
- Q.54** Which one below is a pseudohalide
 [1] CN^- [2] ICl [3] IF_5 [4] I_3^-
- Q.55** Helium was discovered by
 [1] Crooks [2] Rutherford
 [3] Frankland and Lockyer [4] Dorn
- Q.56** Which of the following has zero valency
 [1] Sodium [2] Beryllium [3] Aluminium [4] Krypton
- Q.57** Percentage of Ar in air is about
 [1] 1% [2] 2% [3] 3% [4] 4%
- Q.58** In which of the following pairs does the first gas bleaches flowers by reduction while the second gas does so by oxidation
 [1] CO and Cl_2 [2] SO_2 and Cl_2 [3] H_2 and Br_2 [4] NH_3 and SO_2
- Q.59** Which element from V group, gives most basic compound with hydrogen
 [1] Nitrogen [2] Bismuth [3] Arsenic [4] Phosphorus
- Q.60** KF combines with HF to form KHF_2 . The compound contains the species
 [1] K^+ , F^- and H^+ [2] K^+ , F^- and HF [3] K^+ and $[\text{HF}_2]^{2-}$ [4] $[\text{KHF}]^+$ and F^-
- Q.61** An element (X) forms compounds of the formula XCl_3 , X_2O_5 and Ca_3X_2 , but does not form XCl_5 , which of the following is the element X.
 [1] B [2] Al [3] N [4] P
- Q.62** Which of the following properties increases on going down from F to I in group VII-A of the periodic table ?
 [1] Electronegativity [2] Volatile nature [3] Ionic radius [4] Oxising power
- Q.63** In the nitrogen family the H – M – H bond angle in the hydrides MH_3 gradually becomes closer to 90° on going from N to Sb. This show that gradually
 [1] The basic strength of hydrides increases
 [2] Almost pure p-orbitals are used for M – H bonding
 [3] The bond energies of M – H bond increase
 [4] The bond pairs of electrons become nearer to the central atom
- Q.64** Who among the following first prepared a stable compound of noble gas
 [1] Rutherford [2] Rayleigh [3] Ramsay [4] Neil bartlett
- Q.65** Which one among the following non-metals liquid at 25°C
 [1] Bromine [2] Carbon [3] Phosphorus [4] Sulphur
- Q.66** The gas which shows maximum deviation from ideal behaviour is
 [1] CO_2 [2] O_2 [3] He [4] N_2
- Q.67** White enamel of our teeth is
 [1] $\text{Ca}_3(\text{PO}_4)_2$ [2] CaF_2 [3] CaCl_2 [4] CaBr_2
- Q.68** A metal is burnt in air and the ash on moistening smells of NH_3 . The metal is
 [1] Na [2] Fe [3] Mg [4] Al
- Q.69** Which of the following is a cyclic phosphate
 [1] $\text{H}_5\text{P}_3\text{O}_{10}$ [2] $\text{H}_6\text{P}_4\text{O}_{13}$ [3] $\text{H}_5\text{P}_5\text{O}_{15}$ [4] $\text{H}_7\text{P}_5\text{O}_{16}$
- Q.70** Sulphuric acid reacts with PCl_5 to give
 [1] Thionyl chloride [2] Sulphur monochloride [3] Sulphuryl chloride [4] Sulphur tetrachloride

- Q.71** Which of the following is called sulphuric anhydride
 [1] $\text{H}_2\text{S}_2\text{O}_7$ [2] $\text{H}_2\text{S}_2\text{O}_3$ [3] SO_2 [4] SO_3
- Q.72** HCl is added to the following oxides which one would give H_2O_2
 [1] MnO_2 [2] PbO_2 [3] BaO_2 [4] None of these
- Q.73** The most efficient agent for the absorption of SO_3 is
 [1] 98% H_2SO_4 [2] 80% H_2SO_4 [3] 20% oleum [4] 90% H_2SO_4
- Q.74** Which one of the following can be used as an anaesthetic
 [1] N_2O [2] NO [3] NCl_3 [4] NO_2
- Q.75** The compound which does not possess a peroxide linkage is :
 [1] Na_2O_2 [2] CrO_5 [3] H_2SO_5 [4] PbO_2
- Q.76** The type of glass used in making lenses and prisms is :
 [1] A flint glass [2] Jena glass [3] Pyrex glass [4] Quartz glass
- Q.77** Plumbosolvency implies dissolution of lead in :
 [1] Bases [2] Acids [3] Ordinary water [4] CuSO_4 sol
- Q.78** sodium thiosulphate is used in photography :
 [1] To convert metallic silver into silver salt [2] AgBr grain is reduced to non-metallic silver
 [3] To remove reduced silver [4] To remove undecomposed AgBr in the form of
- Q.79** In laboratory silicon can be prepared by the reaction :
 [1] By heating carbon in electric furnace [2] By heating potassium with potassium dichromate
 [3] silica with magnesium [4] None of these
- Q.80** Silicon chloroform is prepared by :
 [1] $\text{Si} + \text{HCl}$ [2] $\text{SiCl}_4 + \text{H}_2\text{O}$ [3] $\text{SiF}_4 + \text{NaF}$ [4] $\text{H}_2\text{SiF}_6 + \text{Cl}_2$
- Q.81** Glass reacts with HF to produce :
 [1] SiF_4 [2] H_2SiF_6 [3] H_2SiO_3 [4] Na_3AlF_6
- Q.82** Quartz is a crystalline variety of :
 [1] Silicon [2] Silica [3] Sodium silicate [4] Silicon carbide
- Q.83** In the reaction $\text{B}_2\text{O}_3 + \text{C} + \text{Cl}_2 \rightarrow \text{A} + \text{CO}$. The A is :
 [1] BCl_3 [2] BCl_2 [3] B_2Cl_2 [4] CCl_4
- Q.84** In which of the following the inert pair effect is most prominent :
 [1] C [2] Si [3] Ge [4] Pb
- Q.85** Soft heavy metal melts at 30°C and is used in making heat sensitive thermometers the metal is :
 [1] Gallium [2] Sodium [3] Potassium [4] Caesium
- Q.86** Lead pipes are not suitable for drinking water because :
 [1] A layer of lead dioxide is deposited over pipes
 [2] Lead reacts with air to form litharge
 [3] Lead reacts with water containing air to form $\text{Pb}(\text{OH})_2$
 [4] Lead forms basic lead carbonate
- Q.87** A substance X is a compound of an element of group IA the substance X gives a violet colour in flame test, X is
 [1] LiCl [2] NaCl [3] KCl [4] None

- Q.88** Which shows polymorphism
 [1] O [2] S [3] Se [4] All
- Q.89** Boron form covalent compound due to
 [1] Higher ionization energy [2] Lower ionization energy
 [3] Small size [4] Both (a) and (c)
- Q.90** Aqua regia is a mixture of
 [1] $3\text{HCl} + 1\text{HNO}_3$ [2] $\text{H}_3\text{PO}_4 + \text{H}_2\text{SO}_4$ [3] $3\text{HNO}_3 + \text{HCl}$ [4] $\text{HCl} + \text{CH}_3\text{COOH}$
- Q.91** Which metal burn in air at high temperature with the evolution of much heat
 [1] Cu [2] Hg [3] Pb [4] Al
- Q.92** Tincal is
 [1] $\text{Na}_2\text{CO}_3 \cdot 10\text{H}_2\text{O}$ [2] NaNO_3 [3] NaCl [4] $\text{Na}_2\text{B}_4\text{O}_7 \cdot 10\text{H}_2\text{O}$

Answer Key - 2

Qs.	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25
Ans.	3	4	4	3	4	4	3	2	2	3	2	1	2	3	3	2	1	4	4	2	2	2	4	2	1
Qs.	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50
Ans.	1	3	1	1	3	1	2	1	2	3	2	3	4	1	3	1	2	2	2	1	3	1	4	2	2
Qs.	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75
Ans.	3	3	2	1	3	4	1	2	1	3	3	3	4	4	1	1	2	3	3	3	4	3	1	1	4
Qs.	76	77	78	79	80	81	82	83	84	85	86	87	88	89	90	91	92								
Ans.	1	3	1	3	1	1	2	1	4	1	3	3	4	4	1	4	4								

Exercise # 3

- Q.1** A compound of nitrogen which is explosive, is **(AIIMS 1996)**
[1] NCl_3 [2] N_2O_5 [3] NH_3 [4] NF_3
- Q.2** Which of the following is not suitable for use in a desiccator to dry substances **(AIIMS 1996)**
[1] Conc. H_2SO_4 [2] Na_2SO_4 [3] CaCl_2 [4] P_4O_{10}
- Q.3** Metal halide which is insoluble in water is **(AIIMS 1996)**
[1] AgI [2] KBr [3] CaCl_2 [4] AgF
- Q.4** Which gas is obtained when urea is heated with HNO_2 **(CPMT 1996)**
[1] N_2 [2] H_2 [3] O_2 [4] NH_3
- Q.5** Atomic number of N is 7. The atomic number of IIIrd member of nitrogen family is **(CPMT 1996)**
[1] 23 [2] 15 [3] 33 [4] 43
- Q.6** Which of the following have least covalent P – H bond **(CPMT 1996)**
[1] PH_3 [2] P_2H_6 [3] P_2H_5 [4] PH_6^+
- Q.7** Which of the following condition is used to find atomic Cl_2 from molecular Cl_2 **(CPMT 1996)**
[1] High temperature, high pressure [2] Low temperature, high pressure
[3] High temperature, low pressure [4] Low temperature, low pressure
- Q.8** Among KO_2 , NO_2^- , BaO_2 and NO_2^+ unpaired electron is present in **(IIT 1997)**
[1] NO_2^+ and BaO_2 [2] KO_2 and BaO_2 [3] KO_2 only [4] BaO_2 only
- Q.9** Bleaching powder is correctly represented as **(RPMT 1997)**
[1] CaOCl_2 [2] CaO [3] $\text{CaO}(\text{Cl})$ [4] $\text{CaCl}(\text{OCl})$
- Q.10** $\text{KO}_2 + \text{CO}_2 \rightarrow ?$ (gas) **(CPMT 1997)**
[1] H_2 [2] N_2 [3] O_2 [4] CO
- Q.11** When HNO_3 is dropped into the palm and washed with water, it turns into yellow. It shows the presence of **(CPMT 1997)**
[1] NO_2 [2] N_2O [3] NO [4] N_2O_5
- Q.12** When iodine reacts with NaF , NaBr and NaCl **(CPMT 1997)**
[1] It gives mixture of F_2 , Cl_2 and Br_2 [2] It gives chlorine
[3] It gives bromine [4] None of these
- Q.13** Identify the correct statement when following compounds are given : HF , HBr , H_2Se , H_2Te , H_3P **(CPMT 1997)**
[1] HF (strong acid) [2] H_2Te (strong alkaline)
[3] HBr (strong acid) [4] H_3P (strong alkaline)
- Q.14** Which of the following has the highest dipole moment **(CBSE 1997)**
[1] NH_3 [2] PH_3 [3] SbH_3 [4] AsH_3
- Q.15** When chlorine reacts with cold and dilute solution of sodium hydroxide, the products obtained are **(CBSE 1997)**
[1] $\text{Cl}^- + \text{ClO}^-$ [2] $\text{Cl}^- + \text{ClO}_2^-$ [3] $\text{Cl}^- + \text{ClO}_3^-$ [4] $\text{Cl}^- + \text{ClO}_4^-$
- Q.16** Repeated use of which of the following fertilizers would increase the acidity of the soil **(CBSE 1998)**
[1] Urea [2] Potassium nitrate [3] Ammonium sulphate [4] Superphosphate of lime
- Q.17** A one litre flask is full of brown bromine vapour. The intensity of brown colour of vapour will not decrease appreciably on adding to the flask some **(CBSE 1998)**
[1] Pieces of marble [2] Carbon disulphide [3] Carbon tetrachloride [4] Animal charcoal powder
- Q.18** Nitrogen can be obtained from air by removing **(CBSE 1998)**
[1] Oxygen [2] Hydrogen [3] Carbon dioxide [4] Both (a) and (c)

- Q.19** White phosphorus (P_4) has **(IIT 1998)**
 [1] Six P – P single bonds [2] Four P – P single bonds
 [3] Four lone pairs of electrons [4] PPP angle of 60°
- Q.20** Sodium nitrate ($NaNO_3$) decomposes above $\sim 800^\circ C$ to give **(IIT 1998)**
 [1] N_2 [2] NaO_2 [3] NO_2 [4] Na_2O
- Q.21** Which of the following is the most stable **(Roorkee Qualifying 1998)**
 [1] Pb^{2+} [2] Ge^{2+} [3] Si^{2+} [4] Sn^{2+}
- Q.22** Which of the following form dimeric halides **(Roorkee Qualifying 1998)**
 [1] Al [2] Mg [3] In [4] Ga
- Q.23** One mole of calcium phosphide on reaction with excess water gives **(IIT 1999)**
 [1] One mole of phosphine [2] Two moles of phosphoric acid
 [3] Two moles of phosphine [4] One mole of phosphorus pentoxide
- Q.24** On heating ammonium dichromate, the gas evolved is **(IIT 1999)**
 [1] Oxygen [2] Ammonia [3] Nitrous oxide [4] Nitrogen
- Q.25** In compounds of type ECl_3 , where $E = B, P, As$ or Bi , the angles $Cl-E-Cl$ for different E are in the order **(IIT 1999)**
 [1] $B > P = As > Bi$ [2] $B > P > As > Bi$ [3] $B < P = As = Bi$ [4] $B < P < As < Bi$
- Q.26** Ammonia on reaction with hypochlorite anion, can form **(IIT 1999)**
 [1] NO [2] NH_4Cl [3] NH_3 [4] HNO_2
- Q.27** Which of the following oxides is the most acidic **(CBSE 1999)**
 [1] N_2O_5 [2] P_2O_5 [3] As_2O_5 [4] Sb_2O_5
- Q.28** Which of the following is used in the preparation of chlorine **(CBSE 1999)**
 [1] Only MnO_2 [2] Only $KMnO_4$
 [3] Both MnO_2 and $KMnO_4$ [4] Either MnO_2 or $KMnO_4$
- Q.29** Among Cl^- , Br^- , I^- , the correct order for being oxidised to dihalogen is **(CBSE 1999)**
 [1] $I^- > Cl^- > Br^-$ [2] $Cl^- > Br^- > I^-$ [3] $I^- > Br^- > Cl^-$ [4] $Br^- > I^- > Cl^-$
- Q.30** On heating $KClO_3$, we get **(CBSE 1999)**
 [1] Cl_2O [2] ClO_2 [3] ClO_3 [4] Cl_2O_7
- Q.31** Which of the following substances is used in the laboratory for fast drying of neutral gases **(AIIMS 1998, AFMC 1999)**
 [1] Sodium phosphate [2] Phosphorus pentoxide
 [3] Sodium sulphate [4] Anhydrous calcium chloride
- Q.32** Sulphur on boiling with $NaOH$ solution gives **(Roorkee 1999)**
 [1] $Na_2S_2O_3 + NaHSO_3$ [2] $Na_2S_2O_3 + Na_2S$
 [3] $Na_2SO_3 + H_2S$ [4] $Na_2SO_3 + SO_2$
- Q.33** Formation of in-numberable compounds of carbon is due to its **(RPMT 1999)**
 [1] High reactivity [2] Catenation tendency
 [3] Covalent and ionic tendency [4] Different valency
- Q.34** Sparingly soluble salt is **(RPMT 1999)**
 [1] KCl [2] $NaCl$ [3] NH_4Cl [4] $BaSO_4$
- Q.35** The type of hybridisation of boron in diborane is **(CPMT 1999)**
 [1] sp -hybridisation [2] sp^2 -hybridisation [3] sp^3 -hybridisation [4] sp^3d^2 -hybridisation

- Q.36** Which of the following is nitrogenous fertilizers **(CPMT 1999)**
 [1] Bone meal [2] Thomas meal [3] Nitro phosphate [4] Ammonium sulphate
- Q.37** Which of the following inert gas has the highest ionisation energy **(CPMT 1999)**
 [1] He [2] Ne [3] Ar [4] Kr
- Q.38** Which of the following is not a chalcogen **(CPMT 1999)**
 [1] O [2] S [3] Se [4] Na
- Q.39** Which oxide of nitrogen is obtained on heating ammonium nitrate at 250°C **(AIIMS 1999)**
 [1] Nitric oxide [2] Nitrous oxide [3] Nitrogen dioxide [4] Dinitrogen oxide
- Q.40** Which of the following glass is used in making wind screen of automobiles **(AIIMS 1999)**
 [1] Crook's [2] Jena [3] Safety [4] Pyrex
- Q.41** At room temperature H_2O is a liquid while H_2S is a gas. The reason is **(RPET 1999)**
 [1] Electronegativity of O is greater than S
 [2] Difference in the bond angles of both the molecules
 [3] Association takes place in H_2O due to H-bonding while no H-bonding in H_2S
 [4] O and S belong to different periods
- Q.42** A compound when heated with H_2SO_4 and MnO_2 gives brown vapours. The brown vapour is due to the following gas **(RPET 1999)**
 [1] Br_2 [2] NO_2 [3] NO [4] NH_3
- Q.43** Fenton reagent is **(MP PET 2000; RPET 2000)**
 [1] $FeSO_4 + H_2O_2$ [2] $Zn + HCl$ [3] $Sn + HCl$ [4] None of the above
- Q.44** Which of the following gases are called rare gases **(CPMT 2000)**
 [1] Neon [2] Argon [3] Krypton [4] All of these
- Q.45** Which is formed when fluorine react with hot and concentrated sodium hydroxide **(CPMT 2000)**
 [1] O_2 [2] O_3 [3] NaO [4] HF
- Q.46** **Assertion (A)** : Chlorine and sulphur dioxide both are bleaching agents. **(AIIMS 2000)**
Reason (R) : The bleaching action of chlorine and sulphur dioxide is performed through the process of oxidation.
 [1] Both A and R are true and R is a correct explanation of A
 [2] Both A and R are true and R is not a correct explanation of A
 [3] A is true but R is false
 [4] Both A and R are false
- Q.47** Which of the following is the correct statement for red lead **(AIIMS 2000)**
 [1] It is an active form of lead [2] Its molecular formula is Pb_2O_3
 [3] It decomposes into Pb and CO_2 [4] It decomposes into PbO and O_2
- Q.48** Which of the following halogen does not exhibit positive oxidation state in its compounds **(AIIMS 2000)**
 [1] Cl [2] Br [3] I [4] F
- Q.49** Acid strength of oxy acids of chlorine follows the order **(AIIMS 2000)**
 [1] $HClO < HClO_2 < HClO_3 < HClO_4$ [2] $HClO_4 < HClO_3 < HClO_2 < HClO$
 [3] $HClO_4 < HClO_3 < HClO < HClO_2$ [4] None of the above
- Q.50** Amongst H_2O , H_2S , H_2Se and H_2Te the one with the highest boiling point is **(IIT Screening 2000)**
 [1] H_2O because of hydrogen bonding [2] H_2Te because of higher molecular weight
 [3] H_2S because of hydrogen bonding [4] H_2Se because of lower molecular weight
- Q.51** The number of P–O–P bonds in cyclic metaphosphoric acid is **(IIT Screening 2000)**
 [1] Zero [2] Two [3] Three [4] Four
- Q.52** Sodium oxalate on heating with conc. H_2SO_4 gives **(Roorkee 2000)**
 [1] CO only [2] CO_2 only [3] CO and CO_2 [4] SO_2 and SO_3

- Q.53** Which of the following products is formed on boiling tin with an alkali solution **(Roorkee 2000)**
 [1] Sn(OH)_2 [2] Sn(OH)_4 [3] SnO_3^{2-} [4] SnO_2
- Q.54** Which of the following has the lowest solubility **(Roorkee 2000)**
 [1] CaF_2 [2] CaCl_2 [3] CaBr_2 [4] CaI_2
- Q.55** The mixture of conc. HCl and potassium chlorate on heating gives **(Roorkee 2000)**
 [1] Cl_2 only [2] ClO_2 only [3] $\text{Cl}_2 + \text{ClO}_2$ [4] $\text{Cl}_2 + \text{ClO}_2 + \text{ClO}_3$
- Q.56** Which of the following has the highest bond angle **(Roorkee 2000)**
 [1] H_2O [2] H_2S [3] NH_3 [4] PH_3
- Q.57** Which of the following are formed by Xenon **(Roorkee 2000)**
 [1] XeF_3 [2] XeF_4 [3] XeF_5 [4] XeF_6
- Q.58** The weakest acid HX (X = F, Cl, Br, I) is **(BHU 2000)**
 [1] HF [2] HCl [3] HBr [4] HI
- Q.59** Which one of the following on heating with nitrogen gives a nitride **(BHU 2000)**
 [1] Na [2] K [3] Li [4] Rb
- Q.60** Which is true with regard to the properties of PH_3 **(BHU 2000)**
 [1] PH_3 is not much stable [2] PH_3 is neutral towards litmus
 [3] PH_3 has fishy smell [4] PH_3 is insoluble in water
- Q.61** **Assertion (A)** : Covalency of oxygen is three. **(AIIMS 2001)**
Reason (R) : Dinegative anion of oxygen (O^{2-}) is quite common. But dinegative anion of sulphur (S^{2-}) is less common
 [1] Both A and R are true and R is a correct explanation of A
 [2] Both A and R are true and R is a correct explanation of A
 [3] A is true but R is false
 [4] A is false but R is true
- Q.62** Which of the following is prepared by electrolytic method **(CBSE 2001)**
 [1] Ca [2] Sn [3] S [4] F_2
- Q.63** In the preparation of sulphuric acid, V_2O_5 is used in the reaction, which is **(CBSE 2001, AFMC 2001)**
 [1] $\text{S} + \text{O}_2 \rightarrow \text{SO}_2$ [2] $2\text{SO}_2 + \text{O}_2 \rightarrow 2\text{SO}_3$
 [3] $\text{SO}_2 + \text{H}_2\text{O} \rightarrow \text{H}_2\text{SO}_4$ [4] $\text{N}_2 + 3\text{H}_2 \rightarrow 2\text{NH}_3$
- Q.64** Bronze is an alloy of **(AMU 2001)**
 [1] Copper and zinc [2] Copper, zinc and tin [3] Copper and tin [4] Copper, zinc and nickel
- Q.65** Which noble gas is most soluble in water **(CPMT 2002)**
 [1] He [2] Ar [3] Ne [4] Xe
- Q.66** Nessler's reagent is **(CPMT 2002)**
 [1] Potassium in mercuric iodide [2] TiCl_4
 [3] Anhydrous AlCl_3 [4] $\text{Al}_2\text{O}_3 / \text{Cr}_2\text{O}_3$
- Q.67** The element having atomic number 56 belongs to **(AFMC 2002)**
 [1] Actinides [2] Alkaline earth metals
 [3] Transition series [4] Lanthanides
- Q.68** Which of the following reaction as not feasible **(CBSE 2002)**
 [1] $2\text{KI} + \text{Br}_2 \rightarrow 2\text{KBr} + \text{I}_2$ [2] $2\text{H}_2\text{O} + 2\text{F}_2 \rightarrow 2\text{HF} + \text{O}_2$
 [3] $2\text{KBr} + \text{I}_2 \rightarrow 2\text{KI} + \text{Br}_2$ [4] $2\text{KBr} + \text{Cl}_2 \rightarrow 2\text{KCl} + \text{Br}_2$
- Q.69** In XeF_2 , XeF_4 , XeF_6 the number of lone pairs on Xe is respectively
 [1] 2, 3, 1 [2] 1, 2, 3 [3] 4, 1, 2 [4] 3, 2, 1

- Q.70** In case of nitrogen, NCl_3 is possible but not NCl_5 while in case of phosphorous, PCl_3 as well as PCl_5 are possible, It is due to **(AIEEE 2002)**
 [1] Availability of vacant d-orbital in P but not in N
 [2] Lower electronegativity of P than N
 [3] Lower tendency of H bond formation in P than N
 [4] Occurrence of P in solid while N in gaseous state at room temperature
- Q.71** The correct order of solubility in water for He, Ne, Ar, Kr, Xe is **(AIIMS 2002)**
 [1] He > Ne > Ar > Kr > Xe [2] Ne > Ar > Kr > He > Xe
 [3] Xe > Kr > Ar > Ne > He [4] Ar > Ne > He > Kr > Xe
- Q.72** Assertion (A) : The fluorine has lower reactivity. **(AIIMS 2002)**
 Reason (R) : F–F bond has low bond dissociation energy
 [1] Both A and R are true and R is a correct explanation of A
 [2] Both A and R are true but R is not a correct explanation of A
 [3] A is true but R is false
 [4] A is false but R is true
- Q.73** Hydrated AlCl_3 is used as **(RPET 2003)**
 [1] Catalyst in cracking of petroleum [2] Catalyst in Friedel Craft reaction
 [3] Mordant [4] All of these
- Q.74** Which has highest concentration of N **(RPET 2003)**
 [1] Urea [2] Calcium ammonium nitrate
 [3] Ammonium sulphate [4] Nitrolin
- Q.75** The reagent commonly used to determine hardness of water titrimetrically is **(AIIMS 2003)**
 [1] Oxalic acid [2] Disodium salt of EDTA
 [3] Sodium citrate [4] Sodium thiosulphate
- Q.76** The mixture of concentrated HCl and HNO_3 made in 3 : 1 ratio contains **(AIIMS 2003)**
 [1] ClO_2 [2] NOCl [3] NCl_3 [4] N_2O_4
- Q.77** Which of the following statement is not true **(CBSE 2003)**
 [1] HF is a stronger acid than HCl
 [2] Among halide ions, iodide is the most powerful reducing agent
 [3] Fluorine is the only halogen that does not show a variable oxidation state
 [4] HOCl is a stronger acid than HOBr
- Q.78** What would happen when a solution of potassium chromate is treated with an excess of dilute nitric acid **(AIEEE 2003)**
 [1] Cr^{3+} and $\text{Cr}_2\text{O}_7^{2-}$ are formed [2] $\text{Cr}_2\text{O}_7^{2-}$ and H_2O are formed
 [3] CrO_4^{2-} is reduced to +3 state of Cr [4] CrO_4^{2-} is oxidized to +7 state of Cr
- Q.79** What may be expected to happen when phosphine gas is mixed with chlorine gas **(AIEEE 2003)**
 [1] The mixture only cools down
 [2] PCl_3 and HCl are formed and the mixture warms up
 [3] PCl_5 and HCl are formed and the mixture cools down
 [4] $\text{PH}_3 \cdot \text{Cl}_2$ is formed with warming up
- Q.80** Glass is a **(AIEEE 2003, RPET 2003)**
 [1] Microcrystalline solid [2] Super cooled liquid
 [3] Gel [4] Polymeric mixture
- Q.81** Which show maximum valency **(CPMT 2003)**
 [1] Phosphorus [2] Tin [3] Antimony [4] Bismuth

- Q.82** Which is a noble gas **(CPMT 2003)**
 [1] Hydrogen [2] Neon [3] Halogen [4] Oxygen
- Q.83** A metal sulphides forms white precipitate with NH_4OH . In excess of NH_4OH dissolves, again forms white ppt. with H_2S . Metal is **(CPMT 2003)**
 [1] Ba [2] Al [3] Sr [4] Zn
- Q.84** On boiling, phosphorus with KOH solution product formed is **(CPMT 2003)**
 [1] Potassium phosphate [2] Phosphorus pentoxide
 [3] Phosphorus hydroxide [4] Phosphine
- Q.85** On reaction with Mg, very dilute Nitric acid produces
 [1] NH_3 [2] Nitrous oxide [3] Nitric oxide [4] Hydrogen
- Q.86** On hydrolysis PCl_3 gives **(CPMT 2003)**
 [1] H_3PO_4 [2] POCl_3 [3] H_3PO_3 [4] PH_3
- Q.87** Sodium pyrophosphate is **(CPMT 2003)**
 [1] $\text{Na}_2\text{P}_2\text{O}_7$ [2] $\text{Na}_4\text{P}_2\text{O}_7$ [3] NaPO_4 [4] Na_2PO_2
- Q.88** Which is insoluble in water **(CPMT 2003)**
 [1] H_2S [2] HgCl_2 [3] $\text{Ca}(\text{NO}_3)_2$ [4] CaF_2
- Q.89** The smog is essentially caused by the presence of **(AIEEE 2004)**
 [1] O_3 and N_2 [2] O_2 and N_2
 [3] Oxides of sulphur and nitrogen [4] O_2 and O_3
- Q.90** Excess of KI reacts with CuSO_4 solution and then $\text{Na}_2\text{S}_2\text{O}_3$ solution is added to it. Which of the statements is incorrect for this reaction? **(AIEEE 2004)**
 [1] Evolved I_2 is reduced [2] CuI_2 is formed
 [3] $\text{Na}_2\text{S}_2\text{O}_3$ is oxidised [4] Cu_2I_2 is formed
- Q.91** Aluminium chloride exists as dimer, Al_2Cl_6 in solid state as well as in solution of non-polar solvents such as benzene. When dissolved in water, it gives **(AIEEE 2004)**
 [1] $\text{Al}_2\text{O}_3 + 6\text{HCl}$ [2] $[\text{Al}(\text{H}_2\text{O})_6]^{3+} + 3\text{Cl}^-$
 [3] $[\text{Al}(\text{OH})_6]^{3-} + 3\text{HCl}$ [4] $\text{Al}^{3+} + 3\text{Cl}^-$
- Q.92** Which one of the following statements regarding helium is incorrect? **(AIEEE 2004)**
 [1] It is used in gas-cooled nuclear reactors
 [2] It is used as a cryogenic agent for carrying out experiments at low temperature
 [3] It is used to produce and sustain powerful superconducting magnets
 [4] It is used to fill gas balloons instead of hydrogen because it is lighter and noninflammable
- Q.93** In diborane, the two H–B–H angles are nearly **(AIIMS 2005)**
 [1] $60^\circ, 120^\circ$ [2] $95^\circ, 120^\circ$ [3] $95^\circ, 150^\circ$ [4] $120^\circ, 180^\circ$
- Q.94** Heating an aqueous solution of aluminium chloride to dryness will give **(AIEEE 2005)**
 [1] AlCl_3 [2] Al_2Cl_6 [3] Al_2O_3 [4] $\text{Al}(\text{OH})\text{Cl}_2$
- Q.95** The structure of diborane (B_2H_6) contains **(AIEEE 2005)**
 (1) Four 2c-2e bonds and two 3c-2e bonds [2] Two 2c-2e bonds and four 3c-2e bonds
 [3] Two 2c-2e bonds and two 3c-3e bonds [4] Four 2c-2e bonds and four 3c-2e bonds
- Q.96** Which of the following is the electron deficient molecule **(CBSE PMT 2005)**
 [1] B_2H_6 [2] C_2H_6 [3] PH_3 [4] SiH_4
- Q.97** In Hall's process, the main reagent is mixed with - **(AFMC 2005)**
 [1] NaF [2] Na_3AlF_6 [3] AlF_3 [4] None of these

- Q.98** Acetic strength of Boron trihalide are in order of - **(Kerala CET 2005)**
 [1] $\text{BF}_3 < \text{BCl}_3 < \text{BBr}_3 < \text{BI}_3$ [2] $\text{BI}_3 < \text{BBr}_3 < \text{BCl}_3 < \text{BF}_3$ [3] $\text{BBr}_3 < \text{BCl}_3 < \text{BF}_3 < \text{BI}_3$ [4] $\text{BF}_3 < \text{BI}_3 < \text{BCl}_3 < \text{BBr}_3$
- Q.99** Which of the following gives propyne on hydrolysis **(AIIMS 2005)**
 [1] Al_4C_3 [2] Mg_2C_3 [3] B_4C [4] La_4C_3
- Q.100** Which is used to produce smoke screens **(AFMC 2005)**
 [1] Calcium phosphide [2] Zinc sulphide [3] Sodium carbonate [4] Zinc phosphide
- Q.101** Name of the structure of silicates in which three oxygen atoms of $[\text{SiO}_4]^{4-}$ are shared is - **(IIT 2005)**
 [1] Pyrosilicate [2] Sheet silicate
 [3] Linear chain silicate [4] Three dimensional silicate
- Q.102** In silicon dioxide **(AIEEE 2005)**
 [1] Each silicon atom is surrounded by four oxygen atoms and each oxygen atom is bonded to two silicon atoms
 [2] Each silicon atom is surrounded by two oxygen atoms and each oxygen atom is bonded to two silicon atoms
 [3] Silicon atom is bonded to two oxygen atoms
 [4] There are double bonds between silicon and oxygen atoms
- Q.103** Which gas is liberated when Al_4C_3 is hydrolysed **(AFMC 2005)**
 [1] CH_4 [2] C_2H_2 [3] C_2H_6 [4] CO_2
- Q.104** Which of the following attacks glass **(NCERT 1976 ; AFMC 2005)**
 [1] HCl [2] HF [3] HI [4] HBr
- Q.105** When heated NH_3 is passed over CuO gas evolved is - **(BCECE 2005)**
 [1] N_2 [2] N_2O [3] HNO_3 [4] NO_2
- Q.106** Which of the following is kept in water ? **(BCECE 2005)**
 [1] White phosphorous [2] Sodium [3] Potassium [4] Calcium
- Q.107** Which statement is wrong for NO **(DPMT 2005)**
 [1] It is anhydride of nitrous acid [2] Its dipole moment is 0.22 D
 [3] It forms dimer [4] It is paramagnetic
- Q.108** The number of p-O-p bridges in the structure of phosphorous pentoxide and phosphorous trioxide are respectively **(AIIMS 2005)**
 [1] 6, 6 [2] 5, 5 [3] 5, 6 [4] 6, 5
- Q.109** Aqua-regia is **(Orissa JEE 2005)**
 [1] 1 : 3 conc. HNO_3 and conc. HCl [2] 1 : 2 conc. HNO_3 and conc. HCl
 [3] 3 : 1 conc. HNO_3 and conc. HCl [4] 2 : 1 conc. HNO_3 and conc. HCl
- Q.110** The number of hydrogen atom(s) attached to phosphorus atom in hypophosphorous acid is **(AIEEE 2005)**
 [1] Zero [2] Two [3] One [4] Three
- Q.111** Which blue liquid is obtained on reacting equimolar amount of two gasses at -30°C **(IIT-JEE(Screening)2005)**
 [1] N_2O [2] N_2O_3 [3] N_2O_4 [4] N_2O_5

- Q.112** Which is the most thermodynamically stable allotropic form of phosphorus (IIT-JEE(Screening)2005)
 [1] Red [2] White [3] Black [4] Yellow
- Q.113** When plants and animals decay, the organic nitrogen is converted into inorganic nitrogen. The inorganic nitrogen is in the form of - (KCET 2005)
 [1] Ammonia [2] Elements of nitrogen [3] Nitrates [4] Nitrides
- Q.114** When PbO_2 reacts with conc. HNO_3 the gas evolved is (IIT-JEE (Screening) 2005)
 [1] NO_2 [2] O_2 [3] N_2 [4] N_2O
- Q.115** $\text{SO}_2 + \text{H}_2\text{S} \rightarrow$ product, the final product is (Orissa JEE 2005)
 [1] $\text{H}_2\text{O} + \text{S}$ [2] H_2SO_4 [3] H_2SO_3 [4] $\text{H}_2\text{S}_2\text{O}_3$
- Q.116** Ozone deplect due to the formation of following compound in Antarctica (Kerala CET 2005)
 [1] Acrolein [2] Peroxy acetyl nitrate [3] SO_2 and SO_3 [4] Chlorine nitrate
- Q.117** The correct order of the thermal stability of hydrogen halides ($\text{H} - \text{X}$) is (AIIEE 2005)
 [1] $\text{HI} > \text{HBr} > \text{HCl} > \text{HF}$ [2] $\text{HF} > \text{HCl} > \text{HBr} > \text{HI}$ [3] $\text{HCl} < \text{HF} < \text{HBr} < \text{HI}$ [4] $\text{HI} > \text{HCl} < \text{HF} < \text{HBr}$
- Q.118** Which one of the following oxides is expected exhibit paramagnetic behaviour (CBSE PMT 2005)
 [1] CO_2 [2] SO_2 [3] ClO_2 [4] SiO_2
- Q.119** Identify the incorrect statement among the following (AIIEE 2007)
 (1) Cl_2 reacts with excess of NH_3 to give N_2 and HCl
 (2) Br_2 reacts with hot and strong NaOH solution to give NaBr , NaBrO_4 and H_2O
 (3) Ozone reacts with SO_2 to give SO_3
 (4) Silicon reacts with $\text{NaOH}_{(\text{aq})}$ in the presence of air to give Na_2SiO_3 and H_2O

Answer Key - 3

Qus.	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25
Ans.	1	1	1	1	3	4	3	3	4	3	1	4	3	1	1	3	1	4	1,3,4	1	1	1,3,4	3	4	2
Qus.	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50
Ans.	2	1	3	3	2	4	2	2	4	3	4	1	4	2	3	3	2	1	4	1	4	4	4	1	1
Qus.	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75
Ans.	3	3	3	1	3	3	2	1	3	4	4	4	2	3	4	1	2	3	4	1	3	4	3	1	2
Qus.	76	77	78	79	80	81	82	83	84	85	86	87	88	89	90	91	92	93	94	95	96	97	98	99	100
Ans.	2	1	2	2	2	1	2	4	4	4	3	2	4	3	2	2	3	2	3	1	1	2	1	2	1
Qus.	101	102	103	104	105	106	107	108	109	110	111	112	113	114	115	116	117	118	119						
Ans.	4	1	1	2	1	1	1	1	1	2	2	3	1	2	1	4	2	3	1						

P-Block

1																	2				
H																	He				
3	4															5	6	7	8	9	10
Li	Be															B	C	N	O	F	Ne
11	12															13	14	15	16	17	18
Na	Mg															Al	Si	P	S	Cl	Ar
19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36				
K	Ca	Sc	Ti	V	Cr	Mn	Fe	Co	Ni	Cu	Zn	Ga	Ge	As	Se	Br	Kr				
37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54				
Rb	Sr	Y	Zr	Nb	Mo	Tc	Ru	Rh	Pd	Ag	Cd	In	Sn	Sb	Te	I	Xe				
55	56	57	72	73	74	75	76	77	78	79	80	81	82	83	84	85	86				
Cs	Ba	*	Hf	Ta	W	Re	Os	Ir	Pt	Au	Hg	Tl	Pb	Bi	Po	At	Rn				
87	88	89	104	105	106	107	108	109	110	111	112	113	114	115	116	117	118				
Fr	Ra	*	Rf	Db	Sg	Bh	Hs	Mt	Ds	Rg	Uub	Uut	Uuq	Uup	Uuh	Uus	Uuo				
57	58	59	60	61	62	63	64	65	66	67	68	69	70	71							
La	Ce	Pr	Nd	Pm	Sm	Eu	Gd	Tb	Dy	Ho	Er	Tm	Yb	Lu							
89	90	91	92	93	94	95	96	97	98	99	100	101	102	103							
Ac	Th	Pa	U	Np	Pu	Am	Cm	Bk	Cf	Es	Fm	Md	No	Lr							