143. Assertion : Carbon dioxide (CO_2) is not soluble in water. Reason : Carbon monoxide (CO) is not good reducing agent. [AIIMS-2001]
(A) A (B) B (C) C (D) D

144. Which of the following reactions produces hydrogen? [AIIMS-2002]
(A) $Mg + H_2O$ (B) $BaO_2 + HCl$
(C) $H_2S_4O_8 + H_2O$ (D) $Na_2O_2 + 2HCl$

145. Which of the following does not have valence electron in 3d-subshell ? [AIIMS-2002]
(A) Fe (III) (B) Mn (II) (C) Cr (I) (D) P (0)

146. Assertion : Diamond is a bad conductor. Reason : Graphite is a good conductor. [AIIMS-2002]
(A) A (B) B (C) C (D) D (E) E

147. Assertion (A) : Potassium and cesium are used in photoelectric cells. Reason (R) : Potassium and cesium emit electrons on exposure to light. [AIIMS-2002]
(A) A (B) B (C) C (D) D (E) E

148. The paramagnetic species is- [AIIMS-2003]
(A) KO_2 (B) SiO_2 (C) TiO_2 (D) BaO_2

149. The reagent commonly used to determine hardness of water titrimetrically is - [AIIMS-2003]
(A) Oxalic acid (B) Disodium salt of EDTA
(C) Sodium citrate (D) Sodium thiosulphate

150. On dissolving moderate amount of sodium metal in liquid NH_3 at low temperature, which one of the following does not occur ? [AIIMS-2003]
(A) Blue coloured solution is obtained
(B) Na+ ions are formed in the solution
(C) Liquid NH_3 becomes good conductor of electricity
(D) Liquid ammonia remains diamagnetic

151. (A) Barium is not required for normal biological function in human. [AIIMS-2003]
(R) Barium does not show variable oxidation state.
(A) (B) (C) (D)

152. (A) The O–Obond length in H_2O_2 is shorter than that of O_2F_2. [AIIMS-2003]
(R) H_2O_2 is an ionic compound.
(A) (B) (C) (D)

153. Moderate electrical conductivity is shown by : [JIPMER-90]
(A) Silica (B) Graphite
(C) Diamond (D) Carborundum

154. The ion that is isoelectronic with CO is : [JIPMER-90]
(A) CN^- (B) O_2^+ (C) O_2^- (D) N_3^+

155. The element with highest second ionisation potential is : [JIPMER-90]
(A) C (B) N (C) O (D) F

156. The element with highest first ionisation potential is [JIPMER-90]
(A) B (B) N (C) O (D) C

157. Which has the maximum electronegative character : [JIPMER-90]
(A) Oxygen (B) Nitrogen (C) Fluorine (D) Astatine

158. The oxide that gives H_2O_2 on treatment with dilute acid is : [JIPMER-90]
(A) PbO_2 (B) MnO_2 (C) Na_2O_2 (C) TiO_2

159. Colour is imparted to glass by mixing [JIPMER-90]
(A) Synthetic dye (B) Metal oxide
(C) Oxide of non-metal (D) Coloured salt

160. The most electro negative element is :[JIPMER-90]
(A) Fluorine (B) Oxygen (C) Nitrogen (D) Sulphur

161. Which is soluble in acetone [JIPMER-90]
(A) KI (B) NaI (C) LiI (D) NaCl

162. The total number of electrons in one molecule of CO_2 is : [JIPMER-90]
(A) 22 (B) 44 (C) 66 (D) 88

163. If three electrons are lost by a metal ion M^{3+}, its final oxidation number would be : [JIPMER-90]
(A) 0 (B) +2 (C) +4 (D) +6

164. Which has the minimum atomic radius[JIPMER-90]
(A) N (B) Na (C) K (D) F

165. The species that does not contain peroxide ions is [JIPMER-91]
(A) PbO_2 (B) H_2O_2 (C) SrO_2 (D) BaO_2

166. Which one of the following is an acidic salt : [JIPMER-91]
(A) Na_2S (B) NaHS (C) Na_2SO_3 (D) Na_2SO_4

167. Lunar caustic is : [JIPMER-91]
(A) AgCl (B) $AgNO_3$ (C) NaOH (D) KNO_3

168. Which of the following has the maximum ionization potential : [JIPMER-92]
(A) F (B) C (C) N (D) Ne

169. Which electronic configuration represents alkali metals : [JIPMER-92]
(A) ns^1 (B) $(n-1)d^0\ ns^1$
(C) $(n-1)a^5ns^1$ (D) $(n-1)d^{10}\ ns^2$

170. The valency shell of calcium contains [JIPMER-92]
(A) 2 electrons (B) 4 electrons
(C) 6 electrons (D) 8 electrons

171. Red lead is : [JIPMER-93]
(A) Pb_3O_4 (B) PbO (C) $PbCrO_4.PbO$ (D) PbO_2

172. The main factor for small B–F bonds in BF_3 is :

223. Phosphorous has the oxidation state of +3 in. [JIPMER-99]
(A) meta-phosphoric acid (B) Ortho-phosphoric acid
(C)Ortho-phosphorousacid (D)Hypo-phosphorous acid

224. Which of the following would lose water when exposed to the atomophere ? [JIPMER-99]
(A) Anhydrous sodium carbonate
(B) Caustic soda (C) Concentrated H_2SO_4
(D) A saturated solution of washing soda

225. Pick the ion with the smallest radius [JIPMER-99] (A) Mg^{2+} (B) P^{3-} (C) Si^{4+} (D) Al^{3+}

226. Which of the following ions has the highest polarizing power ? [JIPMER-99]
(A) Na^+ (B) Ca^{2+} (C) Mg^{2+} (D) Al^{3+}

227. The approximate composition of ordinary glass is [JIPMER-99]
(A) $Na_2O.CaO.6SiO_2$ (B) $Na_2O.CaO.SiO_2$
(C) $K_2O.CaO.6SiO_2$ (D) $Na_2O.CaO.SiO_2$

228. Which set has the same number of unpaired electrons in their ground state [JIPMER-2000]
(A) Cl^-, Fe^{3+}, Cr^{3+} (B) Na^+, Mg^{2+}, Al
(C) Na, P, Cl (D) N, P, V

229. Which species does not exist [JIPMER-2000]
(A) $(SiCl_6)^{2-}$ (B) $(CCl_6)^{2-}$ (C) $(GeCl^6)^{2-}$ (D) $(SnCl_6)^{2-}$

230. The velency shell of calcium contains [JIPMER-2000]
(A) 8 electrons (B) 6 electrons
(C) 4 electrons (D) 2 electrons

231. Although CO is neutral, it shows acidic nature on reaction with at high P and T [JIPMER-2000]
(A) LiOH (B) NaOH (C) $Ca(OH)_2$ (D) $Mg(OH)_2$

232. The decomposition of H_2O_2 can be slowed down by the addition of small amount of phosphoric acid which act as [JIPMER-2000]
(A) Promoter (B) Inhibitor (C) Detainer (D) Stopper

233. The most dangerous method of preparing hydrogen would be by the action of HCl on [JIPMER-2000]
(A) Al (B) K (C) Fe (D) Zn

234. The ionic carbide is [JIPMER-2000]
(A) ZnC (B) TiC (C) SiC (D) CaC_2

235. Lead pipes are not suitable for drinking water because [JIPMER-2000]
(A) A layer of lead dioxide is deposited over pipes
(B) Lead reacts with air to form litharge
(C) Lead reacts with water containing air to form $Pb(OH)_2$
(D) Lead forms basic lead carbonate.

236. PbO_2 is [JIPMER-2000]
(A) Basic (B) Acidic (C) Neutral (D) Amphoteric

237. N_2 combines with metal to from [JIPMER-2000]
(A) Nitride (B) Nitrate
(C) Nitrite (D) Nitrosyl chloride

238. Which one is least basic [JIPMER-2000]
(A) BI_3 (B) BBr_3 (C) BCl_3 (D) BF_3

239. An element X with the electronic configuration $1s^22s^22p^63s^2$ would be expected to from the chloride with the formula [JIPMER-2000]
(A) XCl_3 (B) XCl_2 (C) XCl (D) X_2Cl

240. Which pair of atoms or ions will have same configuration [JIPMER-2001]
(A) F^+ and Ne (B) Li^+ and He
(C) Cl^- and Ar (D) Na and K

241. The reaction $H_2S + H_2O_2 \rightarrow 2H_2O + S$ shows [JIPMER-2001]
(A) Oxidizing action of H_2O_2
(B) Reducing action of H_2O_2
(C) Alkaline nature of H_2O_2 (D) Acidic nature of H_2O_2

242. To obtain chromium from chromic oxide (Cr_2O_3), the method used is [JIPMER-2001]
(A) Alumino-thermic process
(B) Electrolytic reduction
(C) Carbon reduction (D) Carbon monoxide reduction.

243. Deuterium resembles hydrogen in chemical properties but reacts [JIPMER-2001]
(A) More vigorously than hydrogen
(B) Faster than hydrogen
(C) Slower than hydrogen (D) Just as hydrogen.

244. Diborane reacts with water to form [JIPMER-2001]
(A) $H_3BO_3 + H_2$ (B) H_2 (C) HBO_2 (D) H_3BO_3

245. Litharge is [JIPMER-2001]
(A) $Pb(CH_3COO)_2$ (B) Pb_3O_4 (C) PbO_2 (D) PbO

246. Concentrated nitric acid reacts with iodine to give [JIPMER-2001]
(A) $HOIO_3$ (B) $HOIO_2$ (C) HOI (D) HI

247. Red lead is an example of a/an . . . oxide [JIPMER-2001]
(A) Basic (B) Super (C) Mixed (D) Amphoteric

248. Which of the following has the smallest size? [JIPMER-2001]
(A) Mg^{2+} (B) Na^+ (C) Al^{3+} (D) Si^{4+}

249. The compounds of alkaline earth metals have the following magnetic nature [JIPMER-2002]
(A) Diamagnetic (B) Paramagnetic
(C) Ferromagnetic (D) Antiferromagnetic

(C) Mg < Na < K < Rb (D) Na < K < Rb < Mg

332. The hydride ions are iso-electronic with [AFMC-95]
(A) H (B) He^+ (C) He (D) Be

333. Fusion mixture is [AFMC-95]
(A) $K_2CO_3 + Na_2CO_3$ (B) $KHSO_4 + NaHSO_4$
(C) $K_2CO_3 + NaHSO_4$ (D) $KHSO_4 + Na_2SO_3$

334. Last molecule of H_2O is evolved from H_2O_2 by [AFMC-95]
(A) Crystallisation (B) Evaporation
(C) Distillation under reduced pressure (D) Electrolysis

335. Which of the following does not give Borax bead test ? [AFMC-95]
(A) Chromium (B) Ferrous salt (C) Sodium (D) Cobalt

336. Which of the following reacts with water with high rate ? [AFMC-95]
(A) Li (B) K (C) Na (D) Rb

337. $AlCl_3$ is [AFMC-95]
(A) Anhydrous and covalent (B) Anhydrous and ionic
(C) Covalent and basic (D) Co-ordinate and acidic

338. Which of the following is correct sequence for ionic radius ? [AFMC-96]
(A) Na < Al < Cl < Ar (B) Na > Al > Cl > Ar
(C) Na < Al > Cl < Ar (D) Na < Al < Cl > Ar

339. Diamond is used in glass cutting due to [AFMC-96]
(A) Hard substance (B) High R.I.
(C) High M.B. (D) High metallic bonding

340. Which of the following is metalloid ? [AFMC-96]
(A) Te (B) S (C) Se (D) At

341. Which of the following is used as moderator ? [AFMC-96]
(A) D_2O (B) Alum (C) H_2O (D) None of these

342. Potash Alum is used as [AFMC-96]
(A) Water softner (B) Disinfectant
(C) Mordant (D) Coolant

343. Which of the following statements, if any, regarding hydrogen peroxide is false ? [AFMC-96]
(A) It is decomposed by MnO_2
(B) It is more stable in basic solution
(C) It behaves as a reducing agent towards acidified $KMnO_4$ (D) It is strong oxidizing agent

344. Formula of Plaster of Paris [AFMC-96]
(A) $CaSO_4.H_2O$ (B) $CaSO_4.\ 2H_2O$
(C) $CaSO_4\ .½H_2O$ (D) $2CaSO_4.\ ½\ H_2O$

345. Which of the following set belongs to same period ? [AFMC-96]
(A) Li, Na, K (B) Li, Mg, Ca
(C) Cu, Ni, Zn (D) F, Cl, Br

346. Tl show variable valency due to [AFMC-96]
(A) Lone pair effect (B) Inert pair effect
(C) High M.P. (D) High B.P.

347. $NaHCO_3$ is prepared by [AFMC-96]
(A) Solvay process (B) Bosch process
(C) Down process (D) None of these

348. Arrange the elements in increasing order of atomic radius - Na, Rb, K, Mg. [AFMC-97]
(A) Na, K, Mg, Rb (B) K, Na, Mg, Rb
(C) Na, Mg, K, Rb (D) Rb, K, Mg,. Na

349. Which is the largest stable atom ? [AFMC-97]
(A) Bi (B) Al (C) U (D) Pb

350. Which of the following statements is correct ? [AFMC-97]
(A) Hydrogen has same ionization potential as alkali metals
(B) H-has same electronegativity as halogens
(C) H has oxidation no. -1 and +1
(D) It will not be liberated at anode

351. The electronic configuration [AFMC-97]
$1s^2 2s^2 2p_X^1 2p_Y^1 2p_Z^1$ is of
(A) Oxygen (B) Nitrogen (C) Hydrogen (D) Fluorine

352. What is heavy water ? [AFMC-97]
(A) $H_2\ ^{18}O$ (B) $H_2\ ^{16}O$ (C) H_2O_3 (D) D_2O

353. How much quick lime can be obtained from 25 gm of $CaCO_3$? [AFMC-97]
(A) 28 gm (B) 14 gm (C) 56 gm (D) None of these

354. Which of the following is not efflorescent ? [AFMC-97]
(A) $CuSO_4$ (B) Hydrated $CuSO_4$
(C) NaOH (D) All of these

355. Electronic formula of chromium is [AFMC-97]
(A) $3d^6 4s^1$ (B) $3d^5 4s^1$ (C) $3d^4 4s^1$ (D) $3d^4 4s^2$

356. Which of the following is correct for Hydrogen ? [AFMC-97]
(A) It can form bonds in +1 as well as -1 oxidation state
(B) It is always collected at anode
(C) It has very high ionization potential
(D) None of these

357. Which of the following is true for diamond ? [AFMC-97]
(A) It is a good conductor of electricity (B) It is soft
(C) It is a bad conductor of heat
(D) It is made up of C,H and O

358. A sudden large jump between the values of second and third ionization energies of an element would be associated with which the following electronic configuration ? [AFMC-98]
(A) $1s^2 2s^2 p^6 3s^1$ (B) $1s^2 2s^2 p^6 3s^2 3p^1$

430. Which one of the following processes will produce hard water ? [AIEEE-2003]
(A) Saturation of water with $CaCO_3$
(B) Saturation of water with $MgCO_3$
(C) Saturation of water with $CaSO_4$
(D) Addition of Na_2SO_4 to water.

431. Which one of the following groupings represents a collection of isoelectronic species (At. nos.: Cs-55, Br-35) [AIEEE-2003]
(A) Na^+, Ca^{2+}, Mg^{2+} (B) N^{3-}, F^-, Na^+
(C) Be, Al^{3+}, Cl^- (D) Ca^{2+}, Cs^+, Br

432. The radius of La^{3+} (Atomic number of La = 57) is 1.06 Å. Which one of the following given value will be close to the radius of Lu^{3+}(Atomic number of Lu = 71) ? [AIEEE-2003]
(A) 1.60 Å (B) 1.40 Å (C) 1.06 Å (D) 0.85 Å

433. In curing cement plasters water is sprinkled from time to time. This helps in [AIEEE-2003]
(A) Keeping in cool
(B) Developing interlocking needlelike crystals of hydrated silicates.
(C) Hydrating sand and gravels mixed with cement.
(D) Converting sand into silicic acid.

434. The correct order of increasing basic nature for the based NH_3, CH_3NH_2 and $(CH_3)_2NH$ is [AIEEE-2003]
(A) $CH_3NH_2 < NH_3 < (CH_3)_2NH$
(B) $(CH_3)_2NH < NH_3 < CH_3NH_2$
(C) $NH_3 < CH_3NH_2 < (CH_3)_2NH$
(D) $CH_3NH_2 < (CH_3)_2NH < NH_3$

435. Butene -1 may be converted to butane by reaction with [AIEEE-2003]
(A) Zn–HCl (B) Sn–HCl (C) Zn–Hg (D) Pd/H_2

436. The solubilities of carbonates decrease down the magnesium group due to a decrease in [AIEEE-2003]
(A) Lattice energies of solids
(B) Hydration energies of cations
(C) Inter-ionic attraction
(D) Entropy of solution formation

437. The substance not likely to contain $CaCO_3$ is [AIEEE-2003]
(A) A marble (B) Calcined gypsum
(C) Sea shells (D) Dolomite

438. Which pair of atomic numbers represent elements which are both 's' block elements : [EAMCET-90]
(A) 7, 15 (B) 6, 12 (C) 9, 17 (D) 3, 12

439. A transition metal 'X' has a configuration $[Ar]3d^4$ in its +3 oxidation state. Its atomic Number is : [EAMCET-90]
(A) 25 (B) 26 (C) 22 (D) 19

440. The components present in producer gas is : [EAMCET-90]
(A) $CO + N_2$ (B) $CO + H_2$ (C) $CO_2 + N_2$ (D) $CO_2 + H_2$

441. Which indicates the correct variation in electronegativities : [EAMCET-90]
(A) F > N < O > C (B) F < N > O > C
(C) F < N < O < C (D) F > N > O < C

442. The first Ionisation energy of lithium will be. [EAMCET-90]
(A) Greater than beryllium (B) Lesser than beryllium
(C) Equal to sodium (D) Equal to fluorine

443. An element 'Y' has a ground state configuration 2, 8, 8, the type of bond that exists between the atoms 'Y' is : [EAMCET-90]
(A) Ionic (B) Covalent
(C) Metallic (D) van der Waals

444. The number of Hydrogen atoms bridging the boron atoms in a diborane is .....[EAMCET-90]

445. Among the ions Cl^-, S^{2-} and Na^+, the largest Ion is ..... [EAMCET-90]

446. Among the metals Na, Mg and Al the metal with highest melting point is .....[EAMCET-90]

447. A simple oxide of carbon and that of another non-metal has the same C_p/C_v ratio, but a difference of 2 in their molecular weights. The other non-metal could be ..... [EAMCET-90]

448. Among the alkali metals, the metal with the highest I.P. is ..... [EAMCET-91]

449. The process of slow cooling of glass is called ..... [EAMCET-91]

450. Among SiO_2 and Al_2O_3 the other major ingradient in Portland cement in ..... [EAMCET-91]

451. Al^{3+} has a lower ionic radius than Mg^{2+} ion because [EAMCET-92]
(A) Mg atom has less number of neutrons than Al.
(B) Al^{3+} has a higher nuclear charge than Mg^{2+}
(C) Their electro negativities are different
(D) Al has a lower ionisation potential than Mg atom.

452. Atoms of different elements having identical mass are known as [EAMCET-92]
(A) Isotopes (B) Isobars (C) Isotones (D) Isomers

453. In the long form of periodic table, the elements having lowest ionisation potential are present in [EAMCET-92]
(A) I group (B) IV group (C) VII group (D) Zero group

454. Ionisation potential of 1s electron is ..... [EAMCET-92]

455. A "magic number" nucleus contains .....