

Group IIA & IVA Elements

| Sr | Questions | Answers Choice |
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| 1 | The structure of white phosphorus is | A. Square planar B. Pyramidal C. Tetrahedral D. Trigonal planer |
| 2 | Solvay process is used in the manufacture of | A. Na ₂ CO ₃ B. NaHCO ₃ C. CaCl ₂ D. All |
| 3 | Borax is a common mineral of alkali metal sodium. Its formula is | A. Na ₂ B ₄ O ₇ B. Na ₂ ,B ₄ O ₇ . 10H ₂ O C. Na ₂ B ₃ O ₆ . 10H ₂ B D D. Na ₂ B Sub>4O ₇ . |
| 4 | Red P can be obtained form white P by | A. Heating it with a catalyst in an inert atmosphere B. Distilling it in an inert atmosphere C. Dissolving it in CS ₂ and crysllizing D. Melting it ad pouring the liquid into water |
| 5 | Which shows maximum catenation property? | A. S B. Se C. Te D. O |
| 6 | Which salt is used for preserving food | A. BaCl ₂ B. CaCl ₂ C. NaCl D. Na ₂ SO ₄ |
| 7 | Lime, calcium oxide, is used in agriculture for | A. Adding ca metal in soil B. Making soil acidic C. Neutralizing acidic soil D. Adding oxygen to soil |
| 8 | White phosphorus is | A. A mono atomic gas B. P ₄ , a tetrahedral solid C. P ₈ , a crown D. A linear diatomic molecule |
| 9 | Chemical composition of colemnite is: | A. Ca ₂ B ₆ O ₁₁ .5H ₂ O B. CaB ₄ O ₇ .4 H ₂ O C. Na ₂ B ₇ O ₇ .4 H ₂ O D. CaNaB _{O₇.8H₂O D. CaNaB₅O₉.8H₂O} |
| 10 | The oxide of beryllium is | A. Acidic B. Amphoteric C. Superoxide D. Basic |
| 11 | Francium is an element at the bottom of Group I in the Periodic Table. Which one of the following predication is likely to be correct? | A. It will react with water to liberate oxygen B. Its hydroxide will be a strong alkali in water C. Its carbonate will decompose on heating to give carbon dioxide D. Its nitrate on heating will give nitrogen dioxide and oxygen |
| 12 | Which one of the following is not an alkali metal | A. Francium B. Caesium C. Rubidium D. Radium |
| 13 | Sodium forms largely | A. Normal oxides B. Per-oxides C. Superoxides D. None of these |
| 14 | Which of the following sulphates is not soluble in water | A. Sodium sulphate B. Potassium sulphate C. Zinc sulphate D. Barium sulphate |

| 15 | The ore CaSO ₄ 2H ₂ O has the general name | A. Gypsum B. Dolomite C. Calcite D. Epsom salt |
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| 16 | A compound used as eye wash: | A. Borax B. Boric acid C. Metabolic acid D. Pyroboric acid |
| 17 | The chemical formula of Trona is | A. KCI . MgCl ₂ . 6H ₂ O B. Na ₂ CO ₃ . 2NaHCO ₃ . 2H ₂ O C. Na ₂ CO ₃ . H ₂ O D. KCI |
| 18 | Which of the following elements is not present abundantly in earth's crust? | A. Silicon B. Aluminium C. Sodium D. Oxygen |
| 19 | Down's cell is used to prepare | A. Sodium carbonate B. Sodium bicarbonate C. Sodium metal D. Sodium hydroxide |
| 20 | When sulphur is boiled with Na ₂ SO ₃ solution, the compound formed is | A. Sodium sulphides B. Sodiums sulphates C. Sodium persulphate D. Sodium thiosulphate |
| 21 | Which property is not present in Al? | A. Reacts with acid B. Reacts with bases C. Changes litmus paper D. Changes methyle orange colour |
| 22 | The element which has a simple cubic lattice in solid state is | A. Se B. Te C. Po D. None of these |
| 23 | Chile saltpetre has the chemical formula | A. NaNO ₃ B. KNO ₃ C. Na ₂ B0 ₇ D. Na ₂ CO ₃ H ₂ O |
| 24 | Which of the following phosphorus is most reactive? | A. Red phosphorus B. White phosphorus C. Scrlet phosphorus D. Violet phosphorous |
| 25 | gives peroxide | A. Li B. Ba C. Sr D. Be |
| 26 | Which of the following salt is used as purgative | A. CaSO ₄ B. MgSO ₄ C. BeSO ₄ D. NaCl |
| 27 | What is the formula of asbestos? | A. CaMg ₃ (SiO ₃) ₄ B. CaSiO ₃ C. Na ₂ SiO ₃ D. Mg ₃ H ₂ (SiO ₃) ₄ |
| 28 | Al is the most element in earth crust: | A. O B. Si C. Al D. Pb |
| 29 | Sodium is never found free in nature because of its | A. Chemical reactivity B. Small ionic size C. Small atomic volume D. None of these |
| 30 | Alkaline earth metals are usually | A. Reducing agent B. Oxidizing agent C. Amphoteric D. Acidic |
| 31 | Which on of the following compounds does not exist? | A. NCl ₅ B. AsF ₅ C. SbCl ₅ D. PF ₅ |
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| 32 | Which of the following has highest dipole moment? | B. PH ₃ C. AsH ₃ D. SbH ₃ |
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| 33 | is used in breathing equipments for mountaineers and in space craft | A. Li ₂ O B. BeO C. N ₂ D. KO ₂ |
| 34 | Crystalline form of sulphur stable at room temperature is | A. Rhombic sulphur B. Monoclinic sulphur C. Plastic sulphur D. Prismatic sulphur |
| 35 | The number of electron that are paired in oxygen molecule are | A. 16 B. 12 C. 14 D. 7 |
| 36 | Which is not the form of silica? | A. Amethyst quatz B. Rose quatz C. Smoky D. None of these |
| 37 | LiOH soluble than NaOH | A. More soluble B. Less soluble C. Equally soluble D. None |
| 38 | NaHCO3is commonly called | A. Soda ash B. Baking soda C. Washing soda D. None of these |
| 39 | Dipole moment of CO molecule is: | A. 0.0 B. 1.112 D C. 0.112 D D. 2.112 D |
| 40 | Calcium carbide reacts with water to produce | A. Acetylene B. Methane C. Ethylene D. Ethane |
| 41 | Ozone is not | A. An allotrope B. A powerful oxidizing agent C. Paramagnetic D. A bent molecule |
| 42 | The acid which has a peroxy linkage is | A. Sulphurous acid B. Pyrosulphuric acid C. Dithionic acid D. Caro's acid |
| 43 | Which of the following salt is soluble in water | A. CaCO ₃ B. CaSO ₄ C. MgSO ₄ D. BaSO ₄ |
| 44 | Plaster of pares is obtained by heating | A. Gypsum B. Epsom C. Lime stone D. Dolomite |
| 45 | Which of the following fluorides does not exists? | A. NF ₅ B. PF ₅ C. AsF ₅ D. SbF ₅ |
| 46 | Hybridized in oxygen is: | A. sp B. sp ² C. sp ³ D. dsp ³ |
| 47 | Lithium reacts with air to form | A. Peroxide B. Normal oxide C. Superoxide D. None of these |
| 48 | Density of aluminium is (g cm ⁻³): | A. B B. AI C. Si D. Ge |
| 49 | Which element among the following belongs to Group IV-A of the periodic table? | A. Barium B. Iodine C. Lead D. Oxygen |

| 50 | As a fixing agent in photography, sodium thisoulphate is used for | A. Dissolving out unreacted silver bromide B. Converting silver C. Reducing solubility of AgBr D. Preventing overdeveloping and fogging |
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| 51 | P ₂ O ₅ is heated with water to give | A. Hypophosphorus acid B. Phosphorus acid C. Hypophosphorus acid D. Orthophosphorus acid |
| 52 | The oxyacids of phosphorus in which phosphorus has the lowest oxidiation state is | A. Hypophosphorus acid B. Orthophosphorus acid C. Pyrophosphorus acid D. Metaphosphorus acid |
| 53 | Which colour is imparted by sodium | A. Yellow B. Violet C. Red D. Crimson |
| 54 | Which of the following compounds is explosive in nature? | A. Phosphorus trichloride B. Nitrogen trichloride C. Hyponitrous acid D. Nitrosyl chloride |
| 55 | Bond angle is minimum for | A. H ₂ O B. H ₂ S C. H ₂ S D. H ₂ Te |
| 56 | Basicity of orthoposphoric acid is | A. 2 B. 3 C. 4 D. 5 |
| 57 | Which of the element is not an alkaline earth metal | A. Beryllium B. Strontium C. Barium D. Caesium |
| 58 | When a colourless gas is passed through bromine water only decolourisation takes place the gas is | A. SO ₂ B. HBR C. HCI D. H ₂ S |
| 59 | Phosphide ion has the electronic structure similar to that of | A. Nitride ion B. Fluoride ion C. Sodium ion D. Chloride ion |
| 60 | All the following decompose easily on heating to give oxygen except | A. Lead nitrate B. Potassium chlorate C. Mercuric oxide D. Manganese dioxide |
| 61 | CaC ₂ on hydrolysis form | A. CH ₄ B. C ₂ H ₄ C. C ₂ H ₂ D. C ₆ H ₆ |
| 62 | Which salt is used for the treatment of hyperacidity in stomach | A. NaCl B. KCl C. NaHCO ₃ D. Na ₂ CO ₃ |
| 63 | Chief ore of aluminium is: | A. Na ₃ AlF ₆ B. Al ₂ O ₃ .2H ₂ O C. Al ₂ O ₃ D. Al ₂ O ₃ .H ₂ O |
| 64 | Phosphorus pentoxide finds use as | A. An oxidizing agent B. A reducing agent C. A bleaching agent D. A dehydrating agent |
| 65 | Corrundam is ore of: | A. Li B. Be C. B D. Al |
| 66 | HNO ₂ acts as an/a | A. Acid B. Oxidizing agent C. Reducing agent D. All the three |
| 67 | Which one of the following properties is not correct for ozone? | A. It oxidizes lead sulphides B. It oxidizes potassium iodide C. It oxidizes mercury |

| | | D. It carried act as a bleaching agent |
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| 68 | NaHCO ₃ is prepared by | A. Down's process B. Solvay's process C. Nelson's process D. None of these |
| 69 | BiCl ₃ on hydrolysis forms a white precipitate of | A. Bismuthio acid B. Bismuth oxychloride C. Bismuth pentachloride D. Bismuth hydroxide |
| 70 | Which of the following statement is not related to Solvay's process of Na ₂ CO ₃ | A. Cheap materials B. Pure product C. Continuous process D. Harmful by-products |
| 71 | Heavy water is obtained by | A. Prolonged electrolysis of water B. Dissolving heavy salt in water C. Simple distillation of water D. Removing impurities of calcium and magnesium form water |
| 72 | Which will have the maximum value of heat of hydration | A. Na ⁺ B. Cs ⁺ C. Ba ⁺² D. Mg ⁺² |
| 73 | Pb has inert pair of electrons: | A. One B. Two C. Three D. Four |
| 74 | The alkaline earth elements have in their s-orbital | A. One electron B. Two electron C. No electron D. Three electron |
| 75 | S-block elements consist of | A. Alkali metals B. Alkaline earth metals C. Alkali and alkaline earth metals D. None of these |
| 76 | What is going to replace the petroleum? | A. Silica B. Silicates C. Silicones D. Silicon |
| 77 | All the elements of oxygen family are | A. Non metals B. Metalloids C. Radioactive D. Polymorphic |
| 78 | Borax is hydrated: | A. Penta B. Deca C. Hepta D. Octa |
| 79 | Which metal is used in the thermit process because of its activity? | A. Iron B. Copper C. Alumnium D. Zinc |
| 80 | Which is litharge or massicot? | A. PbO B. Pb ₂ O C. Pb ₃ O D. PbO ₂ |
| 81 | Which of the following is a tetrabasic acid? | A. ORthophosphoric acid B. Hyposphosphorus acid C. Metaphosphoric D. Pyrophosphoric acid |
| 82 | Which element form group 15 gives most basic compound with hydrogen? | A. Nitrogen B. Bismuth C. Arsenic D. Phosphorus |
| 83 | The chemical formula of magnesite is | A. MgCl ₂ B. Mg(HCO ₃) ₂ C. MgCO ₃ D. None of these |
| 84 | Some of the elements of a period show similar behavior with the elements of next group in next period this is called | A. Vertical relationship B. Oblique relationship C. Diagonal relationship D. None |
| | | 4 B |

D. It cannot act as a bleaching agent

| 85 | Which of the following elements is most metallic? | B. As C. Sb D. Bi |
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| 86 | Which electronic configuration corresponds to an element of Group Z-A of the periodic table? | A. 1s, 2s ² , 2p ⁶ , 3s ² , 3p ⁶ , 4s ² B. 1s ² , 2s ² , 2p ⁶ , 3s ² , 2p ⁶ , 3s ² , 2p ⁶ , 3s ² , 2p ⁶ , 2s ² , 2p ⁶ , 2s ² , 2p ⁶ , 2s ² , 2p ⁶ , 3s ² , 3p ⁶ |
| 87 | When SO ₂ is passed through acidified K ₂ Cr ₂ O ₇ solution | A. The solution turns blue B. The solution is decolourised C. SO ₂ is reduced D. Green Cr ₂ (SO ₄) ₃ is formed |
| 88 | Phosphine is not obtained by the reaction when | A. White P is heated with NaOH B. Red P is heated with NaOH C. Ca ₂ P ₂ reacts with water D. PH ₄ l is boiled with water |
| 89 | Tincal is a mineral of: | A. Al B. B C. Si D. C |
| 90 | Potassium superoxide has a use in breathing equipment in space crafts. The balanced equation for the reaction is | |
| 91 | The formula of lime stone is | A. CaCl ₂ B. MgCO ₃ C. Na ₂ CO ₃ D. CaCO ₃ |
| 92 | Which is used to remove air bubbles form metals? | A. B B. Be C. Mg D. Al |
| 93 | Which of the following equations represents the action of heat on NaHCO3 | |
| 94 | Sodium is manufacture by the electrolysis of fused sodium chloride and not from an aqueous solution of sodium chloride because | A. Sodium chloride does not ionize in the water solution B. Sodium chloride is not soluble in water C. Sodium deposited at the cathode may react with water to form sodium hydroxide D. Electricity does not pass through aqueous NaCl |
| 95 | Which of the following is formed by the action of water on sodium peroxide? | A. H ₂ B. N ₂ C. O ₂ D. CO ₂ |
| 96 | Identify the incorrect statement with respect to ozone | A. Ozone is formed in the upper atmosphere by a photochemical reaction involving dioxygen B. Ozone is more reactive than diaoxygen C. Ozone is diamagnetic whereas dioxygen is paramagnetic D. Ozone protects the earth's inhabitants by absorbing gammaradiations |
| 97 | Alkaline earth metals posses two electrons in their outermost | A. F-orbital B. D-orbital C. S-orbital D. P-orbital |
| 98 | Which is an essential constituent of chlorophyll | A. Be B. Fe C. Mg D. Ca |
| 99 | Which is used in navigational equipments? | A. B B. Be C. Mg D. Al |
| 100 | Copper oxide is dedected by borax bead test with colour: | A. Blue B. Red C. Yellow D. Black |
| 101 | Polyanion formation is maximum in | A. Nitrogen B. Oxygen C. Sulphur D. Boron |
| 102 | Orthophosphoric acid is | A. Monobasic B. Dibasic C. Tribasic |

| | | D. Tetrabasic |
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| 103 | Each of the following is true of white and red phosphours except that they | A. Are both soluble in CS ₂ B. Can be oxidized by heating in air C. Consist of the same kind of atoms D. Can be converted into one another |
| 104 | The chemical formula of Epson salt is | A. MgSO ₄ B. MgCl ₂ C. MgSO ₄ . 7H ₂ O D. MgCl ₂ . 7H ₂ O |
| 105 | In a group IIA from top to bottom as the atomic number increases, there is regular decreases in | A. lonic size B. Atomic size C. lonization potential D. None of these |
| 106 | The alkali metals form | A. lonic bond B. Covalent bond C. Co-ordinate bond D. H-bond |
| 107 | Which oxide of nitrogen is obtained on heating ammonium nitrate at 250 $^{\circ}$ C? | A. Nitric oxide B. Nitrous oxide C. Nitrogen dioxide D. Dinitrogen tetraoxide |
| 108 | Which metal of Group-II A of the periodic Table, will form the least ionic chloride | A. Be B. Mg C. Ca D. Sr |
| 109 | Alkali metals react violently with halogens to form | A. Hydrides B. Halides C. Anyhydrides D. None of these |
| 110 | Which of the following element is most reactive | A. Li B. Na C. K D. Cs |
| 111 | Silicon atom is hybridized: | A. sp B. sp ² C. sp ³ D. dsp ² |
| 112 | Sodium should be stored in | A. Air free from moisture B. Air free form carbon dioxide C. Under water D. Under kerosene oil |
| 113 | Sulphuric acid has great affinity for water because | A. It hydrolyses the acid B. It decomposes the acid C. Acid forms hydrates with water D. Acid decomposes water |
| 114 | Permonosulphuric acid is known as | A. Marshall's acid B. Carlo's acid C. Sulphuric acid D. None of these |
| 115 | Sodium hexametaphophate is known as | A. Calgon B. Permutite C. Natalite D. Nitrolim |
| 116 | Oleum is | A. Castor oil B. Oil of vitriol C. Fuming of H ₂ SO ₄ D. None of them |
| 117 | Which of the following are electropositive in nature | A. Alkali metals B. Alkaline earth metals C. Halogens D. Alkali and alkaline earth metals |
| 118 | Sulphuric acid reacts with PCI5to give | A. Thionyl chloride B. Sulphur monochloride C. Sulphuryl chloride D. Sulphur tetrachloride |
| 119 | Which element has highest oxidation potential | A. Li B. Be C. Ba D. Ra |
| 100 | | A. PF ₅ B. AsF ₅ |

| 120 | Which one of the following pentafluorides cannot be formed? | C. SbF ₅ D. BiF ₅ |
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| 121 | Which of the following is the hardest metal among following | A. Li B. Na C. Rb D. K |
| 122 | Hypo is used in photography for | A. Developing picture B. Picture printed C. The colour of picture D. The fixation of picture |
| 123 | The chemical formula of chile salt peter is | A. Na ₂ CO ₃ B. KNO ₃ C. NaNO ₃ D. NaNO ₂ |
| 124 | Boric acid cannot be used: | A. An antiseptic in medicine B. For washing eyes C. In soda bottles D. For enamels and glazes |
| 125 | The acid used in lead storage cells is | A. Phosphoric acid B. Nitric acid C. Sulphuric acid D. Hydrochloric acid |
| 126 | Sometimes a yellow turbidity appears while passing H_2S gas even in the absence of II group radicals. This is because | A. Sulphur is present in the mixture as impurity B. IV group radicals are precipitated as sulphides C. Of the oxidation of H ₂ S gas by some acid radicals D. Ill group radicals are precipitated as hydroxides |
| 127 | Carbonates of alkali metals dissolves freely in water to form | A. Acidic solutions B. Neutral solution C. Alkaline solution D. None of these |
| 128 | Which carbonate of alkali metals is insoluble in water | A. Na ₂ CO ₃ B. K ₂ CO ₃ C. Li ₂ CO ₃ D. Cs ₂ CO ₃ |
| 129 | Which of the element is not alkali metal | A. Lithium B. Rubidium C. Francium D. Magnesium |
| 130 | Which of the following oxides is peroxide? | A. Na ₂ O ₂ B. MnO ₂ C. BaO D. SO ₂ |
| 131 | Group VA of the periodic table consists of the elements N, P, As, Sb and Bi, On passing from N to Bi, the oxides of the elements of general formula M_2O_3 become | A. Stronger reducing agents B. More ionic C. More basic D. More volatile |
| 132 | Hybridized in carbon is: | A. sp B. sp ² C. sp ³ D. d ² sp |
| 133 | Which of the following is acidic? | A. SO ₃ B. N ₂ O C. BeO D. HgO |
| 134 | Which one of the following does not belong to alkaline earth metals | A. Be B. Ra C. Ba D. Rn |
| 135 | Which of all following compound is not possible | |
| 136 | is called milk of magnesia | A. NaOH B. KOH C. LiOH D. None |
| 137 | Baking powder has which one of the following formula | A. Na ₂ CO ₃ B. Na ₂ SO ₄ C. NaHCO ₃ D. K ₂ CO ₃ |
| 138 | Which of the following is lighter | A. Li B. k C. Na D. Ca |

A. Be B. Mg 139 reacts with alkalis to give hydrogen C. Ca D. None A. More than O and Se B. More than O but less than Se 140 Electron affinity of sulphur is C. Less than O but more than Se D. Equal to O and Se A. K B. Li C. Na 141 Which of the following form normal oxide D. None A. Na₂CO₃ Which of the following compound is industrially prepared by B. NaHCO3 142 the electrolysis of solution of NaCl D. NaOCI A. Oxygen B. Nitrogen 143 Gypsum is applied to the soil to provide calcium and C. Phosphorous D. Sulphur A. Acidic oxide B. Basic oxide 144 Aluminium oxide is: Amphoteric oxided D. None of these A. CaSO₄. 5H₂O B. CaSO₄. 4H₂O 145 The chemical formula of gypsum is CaSO₄. 2H₂O D. None of these A. 1 The number of unpaired electrons in the p-subshell of oxygen B. 2 146 C. 3 D. 4 A. Multiple bond formation in the molecule B. Absence of bond distance 147 What causes nitrogen to be chemically inert? C. Short internuclear distance D. High bond energy A. In refining or metals B. In paper industry 148 Where lime is not used C. In glass industry D. In the preparation of NaOH A. Berylium B. Aluminium 149 Which element forms an iron with charge 3+? C. Carbon D. Silicon A. BaSO₄ Which of the following sulphates has the highest solubility in B. CaSO₄ 150 C. MgSO₄ D. BeSO₄ A. Pbo B. Pb₂O 151 What is chrome yellow? PbCrO₄ D. Pb₃O₄ A. CaCl₂ B. CaCO₃ 152 Marble is chemically C. Na₂CO₃ D. NaHCO₃ Common salt is hygroscope Commercial common salt becomes slight damp on storing B. Common salt contains some impurity, which is hygroscopic 153 C. Salt in efflorescent D. Salt is crystalline A. Down's cell The electrolytic cell used for the production of metallic sodium B. Solvary's cell 154 is known as C. Haber's cell D. None of these Which one of the following equations represent the reaction 155 that occurs when calcium nitrate is heated strongly A. N

B. P

C. As D. Sb

156

Which one of the following elements occurs free in nature?

| 157 | The most acidic of the following compounds is | A. P ₂ O ₃ B. Sb ₂ O ₃ C. B ₂ O ₃ D. As ₂ O ₃ |
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| 158 | Which of the following is not the reactions of lithium | |
| 159 | The metal with highest electrical resistance at room temperature is | A. Pb B. Te C. Po D. Fe |
| 160 | The maximum number of electrons in the outermost shall of s- black elements is | A. One B. Two C. Three D. Four |
| 161 | Which has soapy touch? | A. Na2B4O7 B. H3BO3 C. Ca2B6O11 D. HBO2 |
| 162 | On alkali and alkaline earth metals down the group, there is decreasing trend in | A. m.p. B. b.p. C. lonization potentiall D. All of these |
| 163 | The silver bromide in hypo (Na ₂ S ₂ O _{3) solution is} | A. Soluble B. Not soluble C. Precipitated D. Not effect |
| 164 | White P when boiled with strong solution of caustic soda produces | A. Phosphine B. Posh acid C. Phosphorous acid D. None |
| 165 | The oxidation number of each element of group II-A is | A. 0 B. +1 C. +2 D1 |
| 166 | When ammonia is heated with cupric oxide, a molecule of ammonia will | A. Gain 3 electrons B. Lose 3 electrons C. Gain 2 electrons D. Lose 2 electrons |
| 167 | The element caesium bears resemblance with | A. Ca B. Cr C. Rubidium D. None of the above |
| 168 | Gypsum is a common mineral of | A. Magnesium B. Strontium C. Calcium D. Barium |
| 169 | In the earth crust sodium is | A. 2.50% B. 2.30% C. 2.40% D. 3.50% |
| 170 | The oxidation number of each element of group I-A is | A. 0 B. +1 C. +2 |