

FBQ1: \_\_\_\_\_ are formed by combination of carbon with some transition metals.

Answer: Interstitial carbides

FBQ2: Halogens exhibit variable oxidation states due to the availability of vacant d orbitals \_\_\_\_\_.

Answer: Flourine

FBQ3: Among the halogens \_\_\_\_\_ can oxidise all the other halide ions to their respective elements.

Answer: Flourine

FBQ4: The number of covalent bond formed by the halogens is \_\_\_\_\_.

Answer: 1

FBQ5: \_\_\_\_\_ means salt producer.

Answer: Halogen

FBQ6: The ability to remove electrons makes halogens \_\_\_\_\_.

Answer: Strong oxidizing agents

FBQ7: \_\_\_\_\_ is the main types of halides formed by Group 5 elements.

Answer: Trihalides

FBQ8: \_\_\_\_\_ is obtained commercially from Fractional distillation of liquid air

Answer: Nitrogen

FBQ9: Hydrolysis of silicon tetrachloride gives \_\_\_\_\_.

Answer: silicic acid

FBQ10: \_\_\_\_\_ are fibrous silicates.

Answer: Asbestos

FBQ11: \_\_\_\_\_ is obtained by reduction of oxides of tin with carbon.

Answer: Tin

FBQ12: Lead is used in glass and \_\_\_\_\_ manufacture.

Answer: Cement

FBQ13: \_\_\_\_\_ is formed when a mixture of silicates mainly of sodium and calcium is melted and supercooled to a low temperature.

Answer: Glass

FBQ14: Tetrafluoroethene can be polymerized thermally or in aqueous emulsions to a chemically inert plastic known as \_\_\_\_\_.

Answer: Polytetrafluoroethene

FBQ15: The simplest fluorocarbon obtained by the reaction of carbon tetrachloride with silver fluoride at 575K is \_\_\_\_\_.

Answer: Carbon tetrafluoride

FBQ16: \_\_\_\_\_ are layer structured silicates.

Answer: Mica

FBQ17: Along the period of the periodic table, the elements with the highest ionisation energies next to the noble gases in the respective periods are the \_\_\_\_\_.

Answer: Halogens

FBQ18: Along the period of the periodic table, the elements with the highest electron affinity next to the noble gases in the respective periods are the \_\_\_\_\_.

Answer: Halogens

FBQ19: \_\_\_\_\_ are the most electronegative elements in their respective periods.

Answer: Halogens

FBQ20: When one of the P – P bonds in P<sub>4</sub> is broken a polymeric form of phosphorus known as \_\_\_\_\_ is formed.

Answer: Red phosphorus

FBQ21: The most metallic of the allotropes of phosphorus is \_\_\_\_\_.

Answer: Black phosphorus

FBQ22: Tetravalent compounds of heavier elements of Group 4 function as Lewis acids and are able to accept electron pairs from bases, because of the availability of \_\_\_\_\_.

Answer: D orbitals

FBQ23: \_\_\_\_\_ is formed when nitrogen from air and hydrogen from synthesis gas are reacted together at a high pressure of about 50 atmosphere and at a temperature of 800K in the presence of a finely divided catalyst.

Answer: Ammonia

FBQ24: \_\_\_\_\_ is formed when silica is fused with sodium carbonate.

Answer: Water glass

FBQ25: \_\_\_\_\_ are giant macromolecules consisting of carbon atoms linked by a network of covalent bonds.

Answer: Diamond and graphite

FBQ26: Ammonium ion formed on reaction with H<sup>+</sup> has a \_\_\_\_\_ structure.

Answer: Tetrahedral

FBQ27: Liquid ammonia is a basic solvent because it can easily accept a \_\_\_\_\_.

Answer: Proton

FBQ28: In graphite, each carbon forms three bonds with other carbons leaving one electron which is delocalised over the whole planar structure. These delocalised electrons make graphite a good \_\_\_\_\_.

Answer: Conductor of electricity

FBQ29: The Group 5 element that is stored under water to protect it from oxygen in the air so as not to catch fire is \_\_\_\_\_.

Answer: Phosphorus

FBQ30: Among the halogens Van der Waals forces of attraction are maximum in \_\_\_\_\_.

Answer: Iodine

FBQ31: Apart from Sb and Bi the compounds formed by elements of Group 5 are predominantly \_\_\_\_\_.

Answer: Covalent

FBQ32: On descending the group of Group 5 elements ionisation energy \_\_\_\_\_.

Answer: Decreases

FBQ33: The density, melting and boiling points of Group 5 elements \_\_\_\_\_ with increase in atomic number as you move down the group.

Answer: Increases

FBQ34: Group 5 elements exhibit a highest oxidation state of \_\_\_\_\_.

Answer: +5

FBQ35: In the gaseous state phosphorus exist as \_\_\_\_\_.

Answer: Tetra-atomic molecule

MCQ1: Hydrazine can act as a coordinating ligand forming complexes with metal ions because of \_\_\_\_\_.

Answer: It has lone pairs of electrons

MCQ2: The tendency of \_\_\_\_\_ to form multiple bonds easily is due to its high bond energy and small atomic radius.

Answer: Carbon

MCQ3: The compound among the options below with the least bond energy is \_\_\_\_\_.

Answer:  $\text{BiH}_3$

MCQ4: Silica gel is \_\_\_\_\_ form of Silicon dioxide.

Answer: Amorphous

MCQ5: Carbon dioxide is used in fire extinguishers because of \_\_\_\_\_.

Answer: It does not support combustion

MCQ6: Which one of the following compounds is formed when carbides are decomposed by water or dilute acids?

Answer: Acetylene

MCQ7: Lightning discharge in the atmosphere converts nitrogen to \_\_\_\_\_.

Answer: Nitric oxide

MCQ8: Superphosphate of lime is a more effective fertilizer than phosphate rock because of \_\_\_\_\_.

Answer:  $\text{Ca}(\text{H}_2\text{P}_2\text{O}_7)_2$  is water soluble

MCQ9: \_\_\_\_\_ are formed by elements of 1, 2, 3, 11, 12 and 13 except boron.

Answer: Ionic carbides

MCQ10: Mixed chlorofluorocarbons or  $\text{CCl}_2\text{F}_2$ ,  $\text{CFCl}_3$ , and  $\text{CF}_3\text{Cl}$  are used in refrigeration and aerosol propellants because of \_\_\_\_\_.

Answer: They are volatile, thermally stable and chemically inert

MCQ11: The small size and high electronegativity makes \_\_\_\_\_ react with metals of low ionisation energy..

Answer: Nitrogen

MCQ12: Multiple bonds between its atoms make \_\_\_\_\_ inert at room temperature.

Answer: Nitrogen

MCQ13: Graphite is the \_\_\_\_\_.

Answer: Softest of the allotropes of carbon

MCQ14: Among the Group 4 elements, moving from carbon to silicon the covalent radius increases sharply afterwards the increase is gradual; this is attributed to the fact that \_\_\_\_\_.

Answer: As we move down the group upto silicon effective nuclear charge outbalances the effect of additional shell leading to only a marginal increase in size

MCQ15: Which of the following statement is true?

Answer: Halogens exist as non-polar diatomic molecules

MCQ16: Nitrogen is not able to form coordination number beyond four whereas other members of its Group is able to because of \_\_\_\_\_.

Answer: P, As, Sb and Bi can attain  $\text{sp}^3\text{d}^2$  and  $\text{sp}^3\text{d}$  hybridization whereas Nitrogen cannot

MCQ17: \_\_\_\_\_ occurs in the elemental state as diamond and graphite

Answer: Carbon

MCQ18: \_\_\_\_\_ is used to create inert atmosphere where the presence of air would involve fire, explosion hazards or undesirable oxidation products.

Answer: Nitrogen

MCQ19: Isolation of fluorine presented a tough problem to chemist before it was finally isolated due to \_\_\_\_\_.

Answer: High chemical reactivity of fluorine towards other elements

MCQ20: Which of the options below shows how carbon behaves differently from the rest of the elements in its group?

Answer: Carbon is the only element in the group that can form stable derivatives with double and triple bonds

MCQ21: The principal constituents of all rocks, clays and soils are \_\_\_\_\_.

Answer: Silicates

MCQ22: The purest and most stable form of silica is \_\_\_\_\_.

Answer: Quartz

MCQ23: Sandstone, granite and slate are examples of \_\_\_\_\_.

Answer: Natural silicates

MCQ24: The chief constituent of glass is \_\_\_\_\_.

Answer: Silica

MCQ25: The difference between silica and silicate is \_\_\_\_\_.

Answer: Silica is made of  $\text{SiO}_2$  units whereas silicate is made of  $\text{SiO}_4$  unit

MCQ26: All the elements of Group 5 can expand their octet except \_\_\_\_\_.

Answer: Nitrogen

MCQ27: In the gaseous state phosphorus exist as \_\_\_\_\_.

Answer:  $\text{P}_4$

MCQ28: \_\_\_\_\_ is a crystalline form of silica.

Answer: Quartz

MCQ29: The most stable hydride of phosphorous is \_\_\_\_\_.

Answer: Phosphine

MCQ30: The tendency of gaining an electron to acquire a stable noble gas configuration makes the halogens \_\_\_\_\_.

Answer: Have high electron affinity

MCQ31: Most Group 4 elements form mostly covalent compounds because of \_\_\_\_\_.

Answer: Very large amount of energy is required to form  $\text{M}^{4+}$  ion

MCQ32: Diamond is not a conductor of electricity because of \_\_\_\_\_.

Answer: It does not have delocalised electrons

MCQ33: The ability of the molecules of graphite held together to slide pass one another imparts in it \_\_\_\_\_.

Answer: Softness

MCQ34: Tin exhibit polymorphism because of \_\_\_\_\_.

Answer: It exists in two crystalline forms

MCQ35: Diamond behaves as an insulator because of \_\_\_\_\_.

Answer: Strong covalent bonds formed within its molecule restricting mobility of electrons

