Chemistry Model Question Paper - 3

Question 1 : A compound is formed by elements A and B. This crystallises in the cubic structure where the A atoms are at the comers of the cube and B atoms are at the body centres. The simplest formula of the compound is

(A) AB

(B) A6B

(C) A8B4

(D) AB6

Answer: (A)

Question 2 : A compound of 'A' and 'B' crystallises in a cubic lattice in which the 'A' atoms occupy the lattice points at the comers of the cube. The 'B' atoms occupy the centre of each face of the cube. The probable empirical formula of the compound is

(A) AB

(B) AB3

(C) AB2

(D) A3B

Answer: (C)

Question 3 : A covalent molecule AB3 has pyramidal structure. The number of lone pair and bond pair electrons in the molecule are respectively

(A) 3 and 1

(B) 1 and 3

(C) 2 and 2

(D) 0 and 4

Answer: (D)

Question 4 : A diabetic person carries a pocket of Glucose with him always, because

(A) Glucose reduces the blood sugar level.

(B) Glucose increases the blood sugar level almost instantaneously.

(C) Glucose reduces the blood sugar level slowly.

(D) Glucose increases the blood sugar level slowly.

Answer: (A)

Question 5 : A dibromo derivative of an alkane reacts with sodium metal to form an alicyclic hydrocarbon. The derivative is _____.

(A) 2, 2 - dibromobutane

(B) 1, 1 - dibromopropane

(C) 1, 4 - dibromobutane

(D) 1, 2 - dibromoethane

Answer: (B)

Question 6 : A gas deviates from ideal behaviour at a high pressure because its molecules

(A) attract one another

(B) show the Tyndall effect

(C) have kinetic energy

(D) are bound by covalent bonds

Answer: (A)

Question 7 : A gaseous mixture was prepared by taking equal mole of CO and N2. If the total pressure of the mixture was found 1 atmosphere, the partial pressure of the nitrogen (N2) in the mixture is

(A) 1 atm

(B) 0.5 atm

(C) 0.8 atm

(D) 0.9 atm

Answer: (D)

Question 8 : A ligand can also be regarded as

(A) Lewis acid

(B) Bronsted base

(C) Lewis base

(D) Bronsted acid

Answer: (A)

Question 9 : A metal present in insulin is

(A) copper

(B) iron

(C) zinc

(D) aluminium

Answer: **(B)**

Question 10 : A mixture of $CaCl_2$ and NaCl weighing 4.44 g is treated with sodium carbonate solution to precipitate all the Ca^{+2} ions as calcium carbonate. The calcium carbonate so obtained is heated strongly to get 0.56 g of CaO. The percentage of NaCl in the mixture (atomic mass of Ca = 40) is _____.

(A) 30.6

(B) 75

(C) 69.4

(D) 25

Answer: **(D)**

Question 11 : Which of the following compound would not evolve CO_2 when treated with $NaHCO_3$ solution?

(A) salicylic acid

(B) phenol

(C) benzoic acid

(D) 4-nitro benzoic acid

Answer: **(B)**

Question 12 : Which is not the correct statement about RNA and DNA?

(A) DNA is active in virus where RNA never appears in virus

(B) DNA exists as dimer while RNA is usually single stranded

(C) DNA contains deoxyribose as its sugar and RNA contains ribose

(D) RNA contains uracil in place of thymine (found in DNA) as a base

Answer: (D)

Question 13 : Which cycloalkane has the lowest heat of combustion per CH2 group?

(A) cyclopropane

(B) cyclobutane

(C) cyclopentane

(D) cyclohexane

Answer: (A)

Question 14 : When a mixture of calcium benzoate and calcium acetate is dry distilled, the resulting compound is

(A) acetophenone

(B) benzaldehyde

(C) benzophenone

(D) acetaldehyde

Answer: (C)

Question 15 : What is the nature of glucose-glucose linkage in starch that makes its so susceptible to acid hydrolysis?

(A) Starch is hemiacetal

(B) Starch is acetal

(C) Starch is polymer

(D) Starch contains only few molecules of glucose

Answer: (A)