Holiday Home Work – Summer Vacation

Class XII- CHEMISTRY

1. Q and Ans. Of Solid state, solution, chemistry in everyday life, polymer- Enclosed
2. Two chapters of animated PPT by each student.
3. Investigatory project of your own choice/CBSE listed can be prepared and submitted on 25/06/2016, further modification will be guided by the subject teachers.
4. Prepare thoroughly for the achievement test in solid state and solution.

Solid State:

1. **It is face centered cubic lattice A metal has cubic lattice. Edge length of lattice cell is $2A^0$. The density of metal is 2.4g cm^{-3}. How many units cell are present in 200g of metal.**

2. **A metal crystallizes as face centered cubic lattice with edge length of 450pm. Molar mass of metal is 50g mol^{-1}. The density of mental is?**

3. **A compound forms hexagonal close packed structure. What is the total number of voids in 0.5 mol of it? How many of these are tetrahedral voids?**

4. **Copper Crystallizes into FCC lattice with edge length $3.61*10^{-8}$ cm. Show that calculated density is in agreement with measured value of 8.92g/cc.**

5. **Niobium crystallizes in bcc structure with density 8.55g/cc, Calculate atomic radius using atomic mass i.e. 93u.**

Solution:

Q 1. (a). Define the following terms.

1. **Mole fraction**

2. **Ideal solutions**

(b)15 g of an unknown molecular material is dissolved in 450 g of water. The resulting solution frrezez at -0.34 ^{0}c . what is the molar mass of material? Kf for water= 1.86 K Kg mol^{-1} .

Q 2.(a) Explain the following :

1. Henry's law about dissolution of a gas in a liquid .

2. Boling point elevation constant for a solvent

(b)a solution of glycerol ($C_3H_8O_3$) in water was prepared by dissolving some glycerol in in 500 g of water. The solution has a boiling point of 100.42 ^{0}c . what mass of glycerol was dissolved to make this solution?

Kb for water = 0.512 k Kg mol^{-1}

Q 3. 2 g of benzoic acid (c_6h_5cooh) dissolved in 25 g of benzene shows a depression in freezing point   equal to 1.62 K . KF for benzene is 4.9 K Kg mol^{-1}. What is the percentage association of acid if it forms dimer in solution.

Q 4. Osmotic pressure of a 0.0103 molar solution of an electrolyte is found to be 0.70 atm at 27^{0}c . calculate Vant Hoff factor.(R=0.082 L atom mol^{-1} K^{-1}) Ans. 2.76

Polymers

1.Give the common and the IUPAC name of the monomer of natural rubber.

2.Discuss the two main purpose of vulcanization of rubber.

   3.Explain the term *Thermosetting polymers* and give one example.

4. Why should one always use purest monomer in free radical polymerisation?
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5.How is dacron obtained from ethylene glycol and terephthalic acid?

SA-II(3 marks)

1.What does the following polymers stand for ?
(i)PVC (ii) DOP(iii) PAN
2. Why is Bakelite a thermosetting polymer?

                   Acid   polymerisation
4. $C_6H_{10}=NOH$ →   A   →   B   Give the products A& B.

5.(i) Give an example of a synthetic rubber.
   (ii) Mention main advantage of synthetic rubber.
    (iii)Arrange the polymers in the increasing order of tensile strength Nylon-6, Buna-S, Polythene.

Chemistry In Every day life

SHORT ANSWER TYPE QUESTION

(2 marks)

Q-1 Mention one important use of the following-

(i) Equanil   (ii)Sucrolose

Q-2 Define the following and give one example-

(i)Antipyretics   (ii) Antibiotics

Q-3 Name the medicines used for the treatment of the following-

(i) Tuberculosis   (ii) Typhoid

Q-4 what are tincture of iodine?

Q- 5 What is artificial sweetening agent? Give two examples?

Q-6 How is synthetic detergents better than soaps?

Q-7 what are sulpha drugs? Give two examples?

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Q-8 what forces are involved in holding the active sites of the enzymes?

Q-9 Describe the following giving an example in each

case- (i) Edible colours

(ii) Antifertility drugs

(i)   as antiseptics?

SHORT ANSWER TYPE QUESTION

(3 marks)

Q-1 what are Biodegradable and non-biodegradable detergents? Give one example of each.

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Q-2 what are barbiturates? To which class of drugs do they belong? Give two examples.

Q-3 what is the use of –

(i) Benadryl (ii) sodium benzoate (iii) Progesterone

Q-4 Identify the type of drug-

(i) Ofloxacin (ii) Aspirin (iii) Cimetidine

Ans- 4 (i) Antibiotic   (ii) Analgesics & Antipyretics

Q-5 Describe the following with suitable example-

(i) Disinfectant (ii) Analgesics

(iii) Broad spectrum antibiotics