St. Mary's School, Dwarka
Holiday Homework
Class: XII
Subject: Chemistry
Week 2
Worksheet 2

Objective:
Ø Revision of concepts
Ø Application of the concepts to real life situations.
Ø Skills to carry out research work and develop scientific aptitude

Instructions:
*Neatly write all the answers in your science notebook.
*Attempt the questions keeping in mind the weightage of each question.
*Assignment 'Summer Holiday Homework' will be created on TEAMS. PDF of handwritten work should be uploaded on it.

Q1. The conversion of primary aromatic amines into diazonium salts is known as …….. 1

Q2. Write the structure of N-methylethanamine. 1

Q3. Methyalamine in water reacts with ferric chloride to precipitate hydrated ferric oxide.Explain. 2

Q4. Arrange the following compounds in an increasing order of basic strength in their aqueous solutions

(i) NH_3, CH_3NH_2, $(CH_3)_2NH$, $(CH_3)_3N$

(ii) NH_3, $C_2H_5NH_2$, $(C_2H_5)_2NH$, $(C_2H_5)_3N$ 2

Q5. Give the structures of products

CH_3CH_2Br ----KCN---→ A ----$LiAlH_4$--→B ---HNO_2,0°C-→ C ---Na--→ D 2

Q6. How do you convert the following ?

(i) $C_6H_5NH_2$ to $C_6H_5NH_2$

(ii) Aniline to phenol

(iii) Ethanenitrile to ethanamine 3

Q7. Write the chemical equations involved when aniline is treated with the following reagents :

(i) Br_2 water

(ii) $CHCl_3$ + KOH

(iii) HCl 3

Q8. Give reasons for the following :

(i) Aniline does not undergo Friedel-Crafts reaction.

(ii) p-methylaniline is more basic thanp-nitroaniline.

(iii) Acetylation of $-NH_2$ group is done in aniline before preparing its ortho and para compounds. 3

Q9. Write the structures of main products when benzene diazonium chloride reacts with the following reagents:

(i) $H_3PO_2 + H_2O$ (ii) CuCN/KCN (iii) Cu/HBr 3

Q10. Given reasons:

(i) Acetylation of aniline reduces its activatino effect.

(ii) CH_3NH_2 is more basic than $C_6H_5NH_2$

(iii) Although $-NH_2$ group is o/p directing, yet aniline on nitration gives a significant amount of m-nitroaniline.

(iv) Electrophilic substitution in aromatic amines takes place more readily than benzene.

(v) Nitro compounds have higher boiling points than hydrocarbons having almost same molecular mass. 5