INDIAN SCHOOL DARSAIT

DEPARTMENT OF CHEMISTRY

Subject: Chemistry Topic : AMINES Date of Worksheet: 13.5.2019

Resource Person: SREEKALA M Date of Submission:_____

Name of the Student: _____ Class &Division: XII Roll Number: _____

1.	Write the IUPAC name of i) CH_3- N - C- CH_3 (with C_2H_5 on N and O on C) ii) CH_3-C(CH_3)$_2$ (with NH_2) iii) $C_6H_5NHCOCH_3$ iv) $CH_3NHCH(CH_3)_2$	1 mark each
2.	Rearrange the following compounds in an increasing order of their basic strengths Aniline, p-nitroaniline and p-toluidine	1
3.	Propanamine and N,N-Dimethylmethanamine contain the same number of carbon atoms, even though propanamine has higher higher boiling point than N,N-Dimethylmethanamine. Why?	1
4.	Predict, giving reasons, the order of basicity of the following compounds in i)gaseous phase and ii) aqueous solution. i) $(CH_3)_3N$,$(CH_3)_2NH$, CH_3NH_2 ,NH_3 ii) $C_6H_5NH_2$, $(C_2H_5)_2NH$, $(C_2H_5)_3N$, $C_2H_5NH_2$	2
5.	Write one chemical reaction each to illustrate the following: i)Gabriel pthalimide synthesis ii) Hofmann's bromamide degradation iii)Carbylamine reaction iv) Gatterman reaction v)Coupling reaction. vi)Diazotisation	1mark each
6.	State distinguishing tests for the following pairs of compounds. i)Ethylamine and aniline ii) Methylamine and dimethylamine. iii) Aniline and benzylamine iv) N-Methyl methanamine and N,N-Dimethyl methanamine	1 mark each
7.	Show the mechanism of acetylation of ethanamine and write the IUPAC name of the product formed.	2

8.	Explain the following giving a reason in each case. i) Alkylamine is more basic than ammonia ii) Aromatic amines weaker bases than aliphatic amines. iii)Primary amines have higher boiling points than tertiary amine. iv)Aniline does not undergo Friedel Crafts alkylation v)Although $-NH_2$ group is an ortho and para directing, nitration of aniline gives along with ortho and para derivatives, meta derivatives also. vi) The presence of a base is needed in the ammonolysis of alkylhalides. vii)Aromatic primary amines cannot be prepared by Gabriel phthalimide synthesis. viii)Diazonium salts of aromatic amines are more stable than those of aliphatic amines. ix) Ethylamine is soluble in water whereas aniline is almost insoluble. x)Methylamine is more basic than aniline. xi) Methylamine in water reacts with ferric chloride to precipitate hydrated ferric oxide.		1mark each.
9.	a)How can you convert an amide into an amine having one carbon less than the starting compound? b)Name the reaction. c) Give the IUPAC name and structure of the amine obtained by the above method if the amide is 3-chlorobutanamide.		3
10.	How are the following conversions carried out: i)Aniline to Iodobenzene ii) Ethyl nitrile to Ethyl amide iii) Benzene diazoniumchloride to benzonitrile iv) Aniline to chlorobenzene v) Ethanoic acid to methanamine vi) Aniline to phenol. vii)Aniline to fluorobenzene viii) Benzene diazonium chloride to benzene .	ix) Methylchloride to ethylamine. x)Aniline to nitrobenzene xi) Ethanamine to N- ethylethanamide xii)Chloroethane to propanamine xiii)Aniline to Benzoic acid. xiv) Acetyl chloride to methyl cyanide. xv)Ethylamide to methylamine. xvi)Acetaldehyde to ethylamine	1 mark each
11.	An optically inactive compound A having molecular formula $C_4H_{11}N$ on treatment with HNO_2 gave an alcohol (B). B on heating at 440K gave an alkene (C). C on treatment with HBr gave an optically active compound(D) having the molecular formula C_4H_9Br. Identify A, B, C and D and write their structural formula and also write the equations involved.		3
12.	An organic compound A having the molecular formula C_2H_3N on reduction gave another compound B. Upon treatment with nitrous acid, B gave ethyl alcohol ad on warming with chloroform and alcoholic KOH, if formed an offensive smelling compound C. Identify A, B and C. Write the equations involved.		3