



INDIAN SCHOOL DARSAIT  
DEPARTMENT OF CHEMISTRY



Subject: Chemistry		Topic : AMINES		Date of Worksheet: 15.10.2017	
Resource Person: SREEKALA M				Date of Submission: _____	
Name of the Student: _____		Class & Division: XII		Roll Number: _____	
1.	Write the IUPAC name of i) $\begin{array}{c} \text{CH}_3 - \text{N} - \text{C} - \text{CH}_3 \\   \quad \quad   \\ \text{C}_2\text{H}_5 \quad \text{O} \end{array}$ ii) $\begin{array}{c} \text{CH}_3 - \text{C}(\text{CH}_3)_2 \\   \\ \text{NH}_2 \end{array}$ iii) $\text{C}_6\text{H}_5\text{NHCOCH}_3$ iv) $\text{CH}_3\text{NHCH}(\text{CH}_3)_2$			1 mark each	
2.	Rearrange the following compounds in an increasing order of their basic strengths Aniline, p-nitroaniline and p-toluidine			1	
3.	Predict, giving reasons, the order of basicity of the following compounds in i) gaseous phase and ii) aqueous solution. i) $(\text{CH}_3)_3\text{N}$ , $(\text{CH}_3)_2\text{NH}$ , $\text{CH}_3\text{NH}_2$ , $\text{NH}_3$ ii) $\text{C}_6\text{H}_5\text{NH}_2$ , $(\text{C}_2\text{H}_5)_2\text{NH}$ , $(\text{C}_2\text{H}_5)_3\text{N}$ , $\text{C}_2\text{H}_5\text{NH}_2$			2	
4.	Write one chemical reaction each to illustrate the following: i) Gabriel phthalimide synthesis ii) Hofmann's bromamide reaction iii) Carbylamine reaction iv) Gatterman reaction      v) Coupling reaction.      vi) Diazotisation			1 mark each	
5.	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	
6.	Show the mechanism of acetylation of ethanamine and write the IUPAC name of the product formed.			2	
7.	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			1 mark each.	

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

