INDIAN SCHOOL MUSCAT
SENIOR SECTION
DEPARTMENT OF CHEMISTRY
CLASS XII
CHEMISTRY PRACTICAL
CONTENT BASED EXPERIMENTS

Experiment Number: 11 **Date: ----------**

ANALYSIS OF FOOD

Aim: To identify the given samples as Protein and Carbohydrate.

EXPERIMENT	OBSERVATION FOR SAMPLE A & B		INFERENCE
	A	B	
Treat the given sample solutions with few drops of Biuret solution .	Purple colouration	No characteristic observation	Sample A is protein
Acidify dilute solution of samples with con. HNO_3 acid	Yellow precipitate.	No characteristic observation	Sample A is protein
Treat dilute solution of samples with few drops of Millon's reagent	White precipitate turns red on heating.	No characteristic observation	Sample A is protein
Mix 1ml of the given samples with 2ml of Fehling's solution (1 ml each of A & B) and heat on a water bath.	No characteristic observation	A reddish brown precipitate is formed.	Sample B is carbohydrate
Mix 1ml of the given samples with 1ml of **Tollen's reagent*** and heat on a water bath.	No characteristic observation	A silver mirror is formed on the inner walls of the test tube	Sample B is carbohydrate

**** *Preparation of Tollen's Reagent:* Wash a test tube with a little NaOH solution and take about 1 ml of Silver nitrate ($AgNO_3$) solution. A black precipitate formed is just dissolves in minimum quantity of NH_4OH solution (Add drop wise carefully).***

Result: The given sample A is Protein and sample B is ----------

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Experiment Number: 12 **Date:** ----------

ANALYSIS OF ORGANIC FUNCTIONAL GROUPS

Aim: To identify the functional group present in the given sample of organic compound.

	Experiment	Observation	Inference
	TESTS FOR ALDEHYDES (-CHO group) (Use acetaldehyde)		
1.	Mix 1ml of the given sample with 2ml of Fehling's solution (A + B) and heat on a water bath.	A reddish brown precipitate is formed.	Presence of –CHO group.
2.	Mix 1ml of the given sample with 1ml of Tollen's reagent and heat on a water bath.	A silver mirror is formed on the inner walls of the test tube.	Presence of –CHO group is confirmed.
	TESTS FOR CARBOXYLIC ACID (-COOH) GROUP (Use acetic acid)		
1.	Add a little of a saturated solution of $NaHCO_3$ to the given sample.	Brisk effervescence of a colourless odourless gas, which turns clear limewater milky.	Presence of carboxylic acid group.
2.	Mix 1ml of the given sample with 1 ml of ethanol and 1 drop of con. H_2SO_4 acid. Heat the mixture on a boiling water bath for about 5 minutes. Remove the test tube from the water bath, pour the contents into a beaker containing about 25ml water (tap water) and note the smell.	A pleasant fruity smell of ester is evolved.	Presence of carboxylic acid is confirmed.
	TESTS FOR AMINO ($-NH_2$) GROUP (Use aniline)		

1.	Shake 2 **drops** of the given organic compound with 2 **ml** of dil. HCl.	The compound dissolves.	Presence of $-NH_2$ group.
2.	Take 1 ml each of the given organic sample, con.HCl, $NaNO_{2(aq)}$ and Alkaline β-naphthol solution in four different test tubes. Cool them below 5^0C in an ice bath. Mix them in the following order (Stir with a glass rod after each addition). First HCl + $NaNO_2$ followed by Aniline and finally β-naphthol and **stir for 5 minutes** without removing the reaction test tube from ice bath.	A red orange coloured dye (Precipitate) is obtained.	Presence of $-NH_2$ group is confirmed.
	TESTS FOR PHENOLIC (– OH) GROUP (Use Phenol)		
1.	Treat the samples with neutral Ferric chloride solution (Add 10 ml of water)	Violet colouration	Presence of Phenol
2.	**Phthalic Test**: - Take 2-3 flakes of phthalic anhydride and 1ml of the sample in a test tube. Add 2-3 drops of con. H_2SO_4 and heat on boiling water bath for about 2-3 minutes and pour the contents into dil.NaOH solution taken a beaker.	Pink colouration develops	Presence of Phenol

Result

The given organic compound contains the functional group ---------- ( )

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