TT

Water

1 2 3 4 5

Hydrogen Bonds

Structure of H_2O

→

→

→

→

→

Water

1 2 3 4 5

Water is an excellent solvent

Solvent

_____ :

→

→

Cohesion

→

→

Water is a Metabolite

Water is useful for Transport

_____ :



Water

1 2 3 4 5

High latent heat of vaporisation

Temperature Control

→ _____ _____ _____ _ _____

↳

→ _____ _____ _____ _____

Large specific heat capacity

↳

↳

Water (H_2O) Summary

1 2 3 4 5

The Importance of H_2O	Property	Example
→		→
	→	→
		→
→	→	→
	→	→
		→
→		→

Biological Molecules

1 2 3 4 5

Polymers

Monomers

Biological Molecules	Monomers	Polymers
1)		
2)		
3)		
4)		

TT

Condensation + Hydrolysis

1 2 3 4 5

Condensation

Types of Reaction

Condensation:

Hydrolysis

_____:

Glycosidic Bond

Hydrolysis:

Carbohydrates

Monosaccharide + Monosaccharide = Disaccharide

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Glucose

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_____ _____

Ribose

1 2 3 4 5





Polymers of Carbohydrates

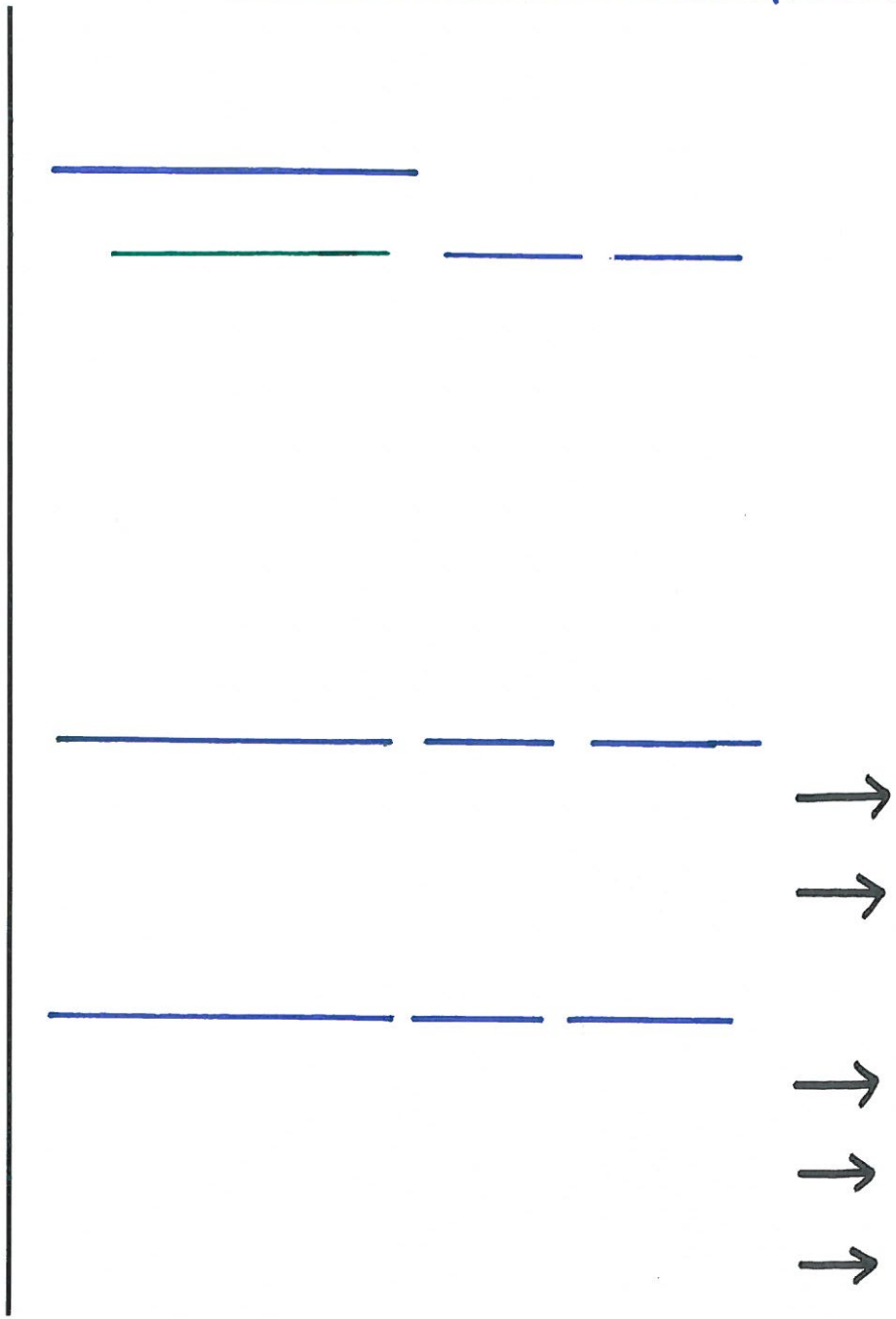
1 2 3 4 5

Polysaccharide: _____

Cellulose	Starch		Glycogen
	_____	_____	

Introduction to Lipids

Summary.



Lipids

Structure & Function

Triglycerides

Function →

Structure →

→ →

↳

→

_____:

Function: →

→

→

Introduction to Proteins

1 2 3 4 5

Protein:

Amino Acids:

Forming a _____: _____

Types of Protein

_____ _____

The Structure and Function of Proteins

1 2 3 4 5

Primary Structure

_____ ( )
Structure

Secondary Structure

_____ ( )
Structure

( ) ( )

Tertiary Structure

_____ ( )
Structure

Quarternary Structure

_____ ( )
Structure

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Conjugated Protein

Fibrous & Globular Proteins

1 2 3 4 5

Fibrous

e.g.

Globular

e.g.

Other Examples

Other Examples

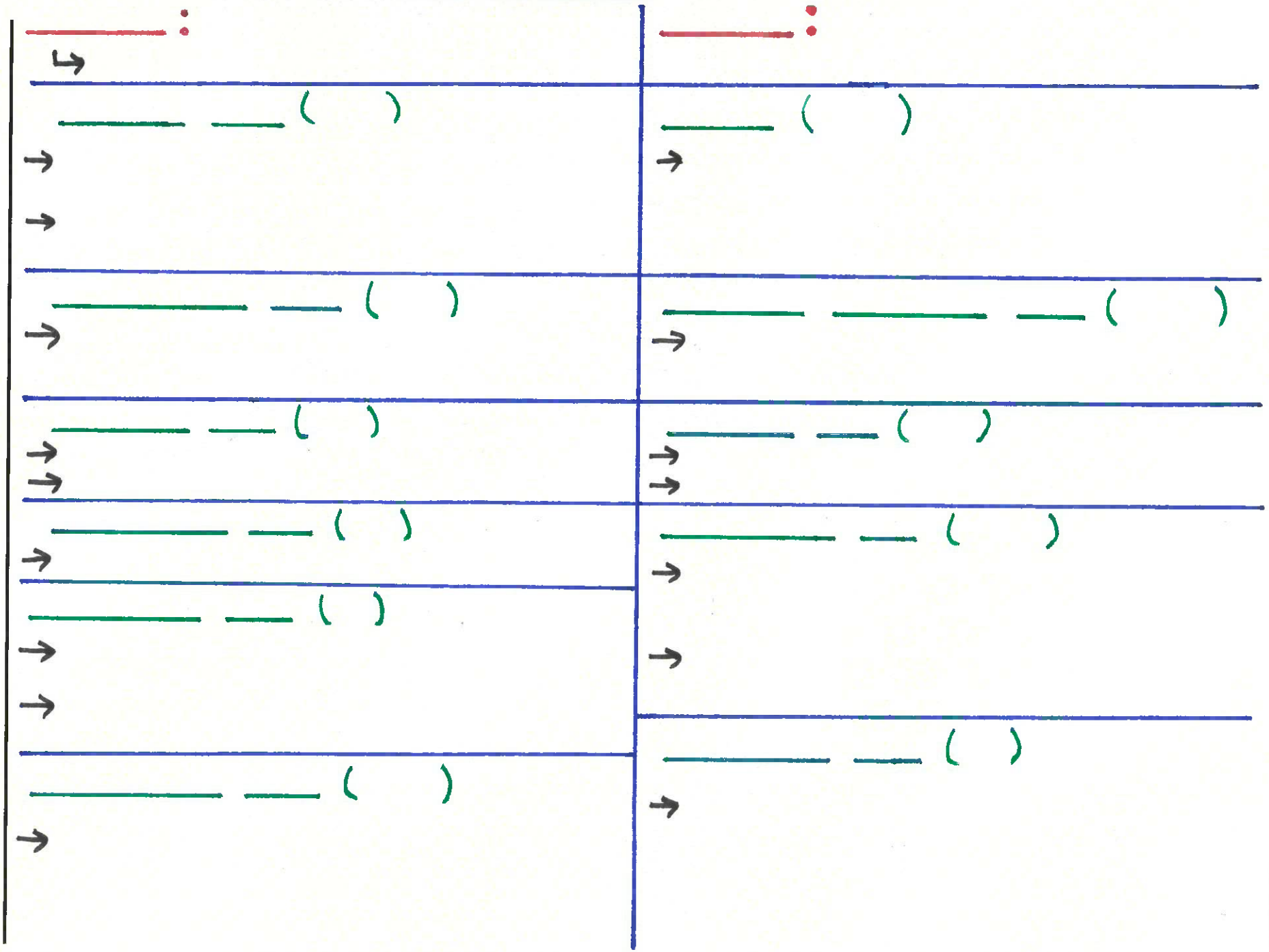
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Cations & Anions

1 2 3 4 5

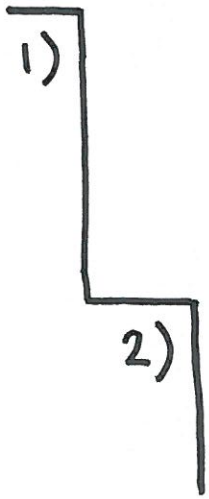
Cations

Anions



The Biuret Test for Proteins

1 2 3 4 5



Test for Carbs: The Benedicts Test

1 2 3 4 5

Test for _____ _____:

1)
2)
3)

Test for ___ _____ _____:

1)
2)
3)

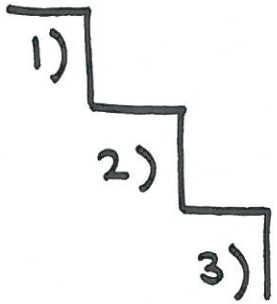
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The Test for Lipids

The _____ test

Stages:



Quantitative Tests for a Substance

1 2 3 4 5

TT

Biosensors

Biosensors

→

e.g. →

→

→

→

→

→

→

→

→

→

↳

Colorimetry

→

↳

↳

Colorimetry & Calibration Curves

1 2 3 4 5

TT

Colorimeter

_____:

Apparatus & Method

→

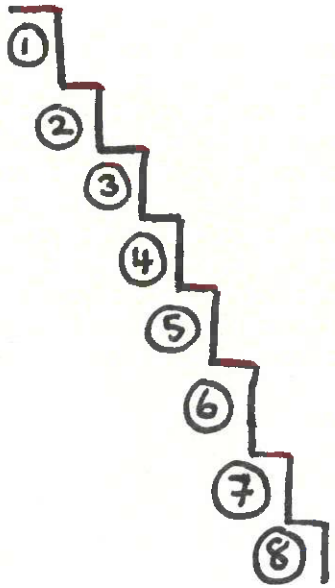
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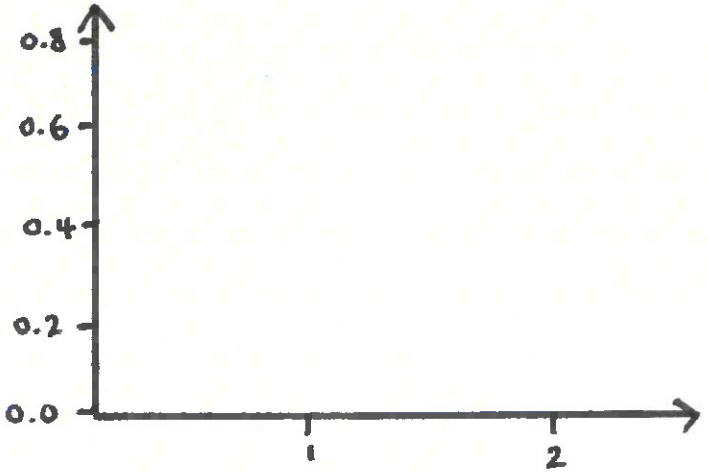
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Calibration (Standard) Curve

Calibration Curve

_____ ____ (_____ ____):





Chromatography

1 2 3 4 5

Chromatography: _____

Paper Chromatography:

Thin Layer Chromatography (TLC):

e.g.

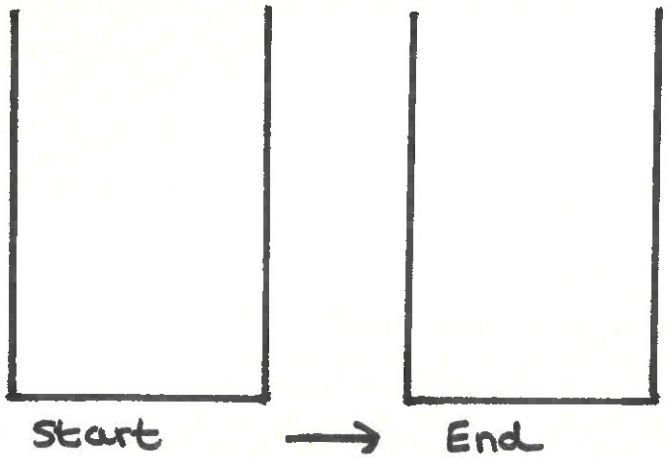
Stationary Phase →

↳

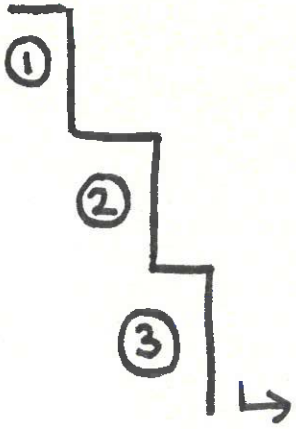
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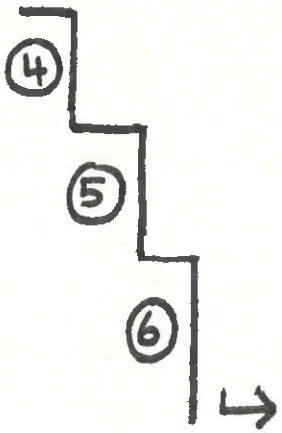
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Mobile Phase →



Method





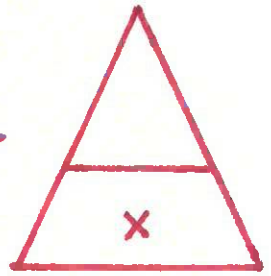
Chromatography : Rf Values

Rf Value

Chromatogram

=

=



→

→

→

→

	Distance of Pigment (mm)	Distance of Solvent (mm)	Rf Value
Chlorophyll a			
Chlorophyll b			
Xenthophyll			