

CLASS 10TH MID TERM

SCORE
BOOSTER

LIFE PROCESSES
- ONE SHOT

BIOLOGY

Definition

All the Biological Processes performed by living organisms to maintain life

- ↳ Nutrition
- ↳ Respiration
- ↳ Circulation
- ↳ Excretion
- ↳ Reproduction →

Something is common in all these processes!

Metabolism



Anabolism

All Reactions where
Simple molecules
combine to
form complex
compounds



Catabolism

All Reactions where
Complex compounds
are broken
down to simple
molecules.



Your Roadmap to Success

Stay on track with a structured schedule that covers every essential topic you need for mid-term success. Each class is designed to reinforce core concepts and provide ample practice to ensure you're fully prepared. Follow the timetable, access class PDFs, and watch video lessons—all at your own pace. Your journey to acing the exams starts here!

 13th Sept 2024

Topic	PDF	Link
Real Numbers		
Life processes		

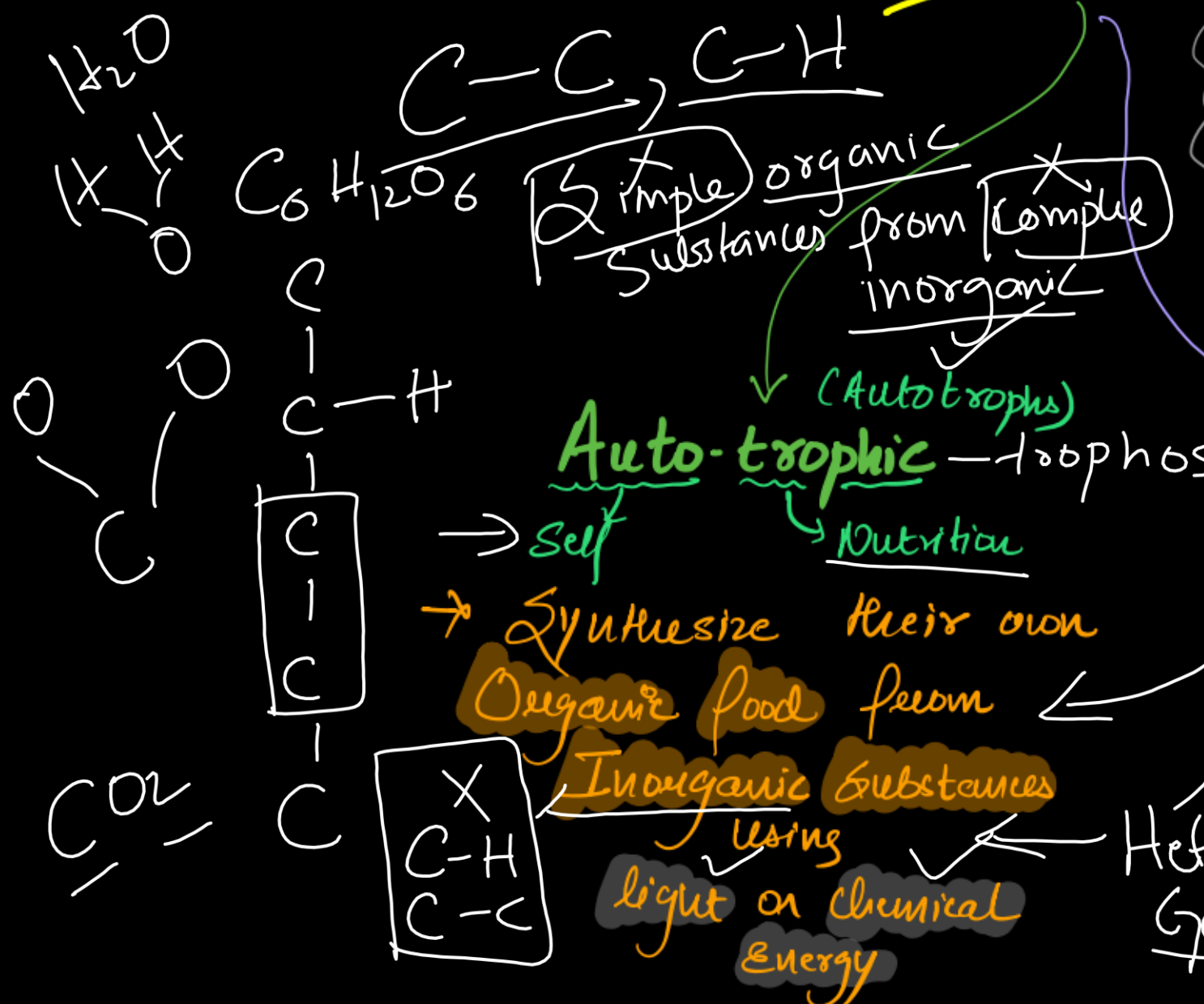
Download the class PDF now ! link in the description.

A top-down view of a dark-colored bowl filled with several bright orange fruits, likely oranges or tangerines, interspersed with vibrant green leaves. The background is dark, making the colors of the fruit stand out. A white decorative border with square corner accents frames the entire image.

Nutrition

Types of Nutrition

Nutrition



Physiological Process of obtaining Nutrients
 ↳ Growth
 ↳ Maintenance
 ↳ Reproduction

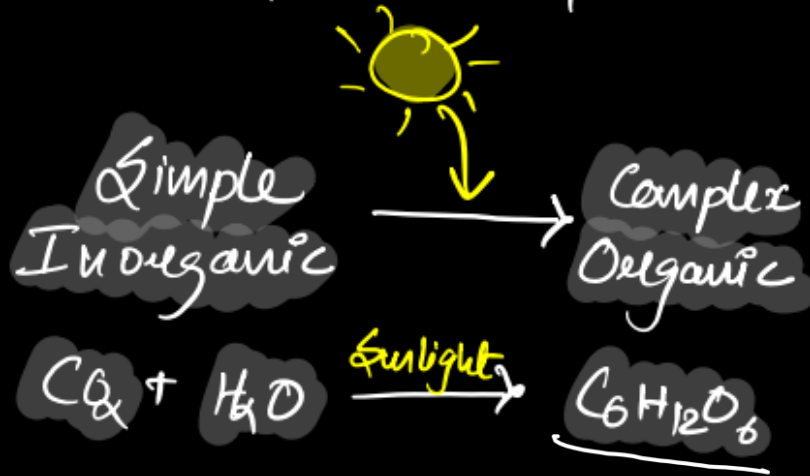
(Heterotrophs)
 Hetero-trophic
 Others Nutrition
 DO NOT synthesize their own food but depends on other organisms (Autotrophs or Heterotrophs) for food
 Hetero Gpake

Autotrophic Nutrition

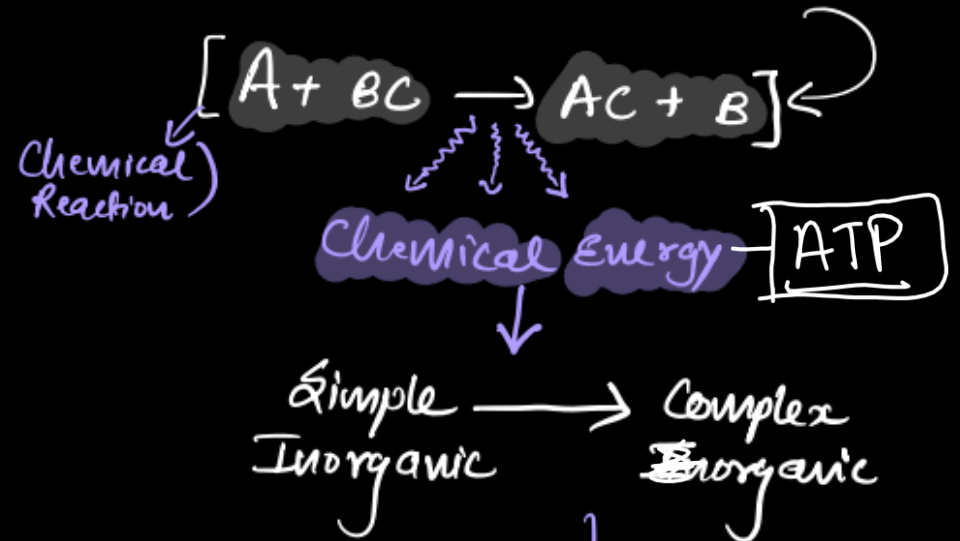
Autotrophic Mode of Nutrition



Photo-Autotrophs
(Uses light energy for formation of food)



Chemo-Autotrophs
(Uses chemical energy for formation of food)



Example of Autotrophs

Photoautotrophs

- Green Plants ✓
- Green Algae (Chlorella)
- Photosynthetic Bacteria

[CYANOBACTERIA: NOSTOC ✓
ANABAENA ✓]

Blue green
algae

Chemoautotrophs

↳ Nitrifying Bacteria

① Nitrosomonas ✓

→ [Ammonia → Nitrite] ATP

② Nitrobacter

[Nitrite → Nitrate]

↳ Sulfur Bacteria

[Hydrogen
Sulphide → Sulfur]

HETEROTROPHIC MODE OF NUTRITION

Heterotrophic Nutrition

PARASITIC → Derives nutrition from other living organism (host)

→ Ectoparasite: Lives outside the body
Externally [LEECH, TICKS, LICE & FLEA]

→ Endoparasite: Lives inside the body
[TAPEWORM & ROUNDWORM]

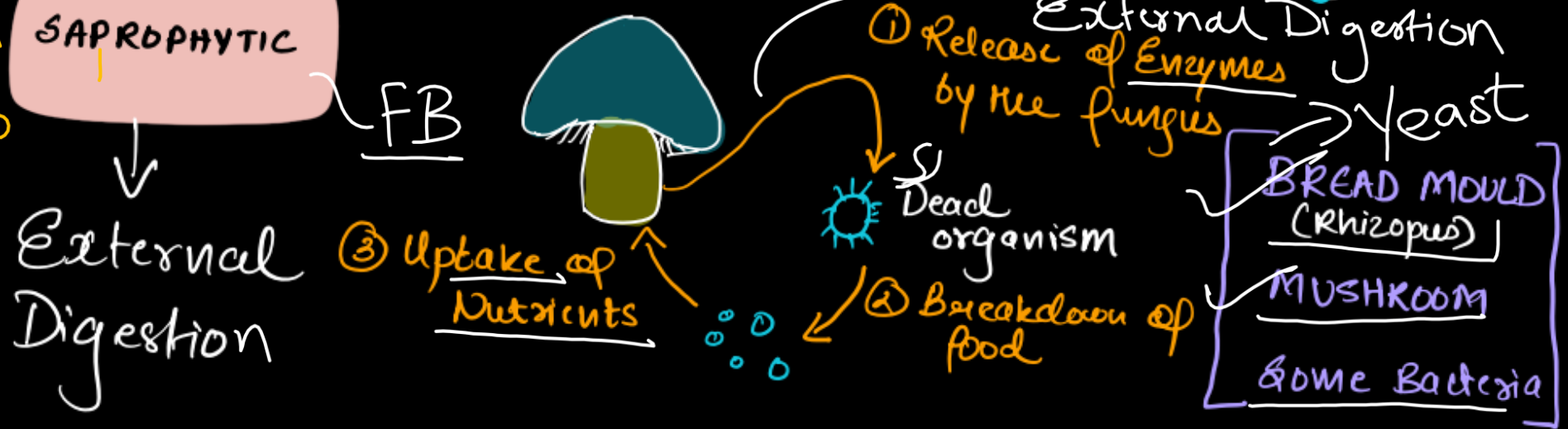
different from
Detritivores

Decomposers

Internal Digestion

SAPROPHYTIC → Derives nutrition from Dead & Decaying matter

Plant parasite: Cuscuta (Amarbel)



Parasitic



Cuscuta



haustoria

One Question For You

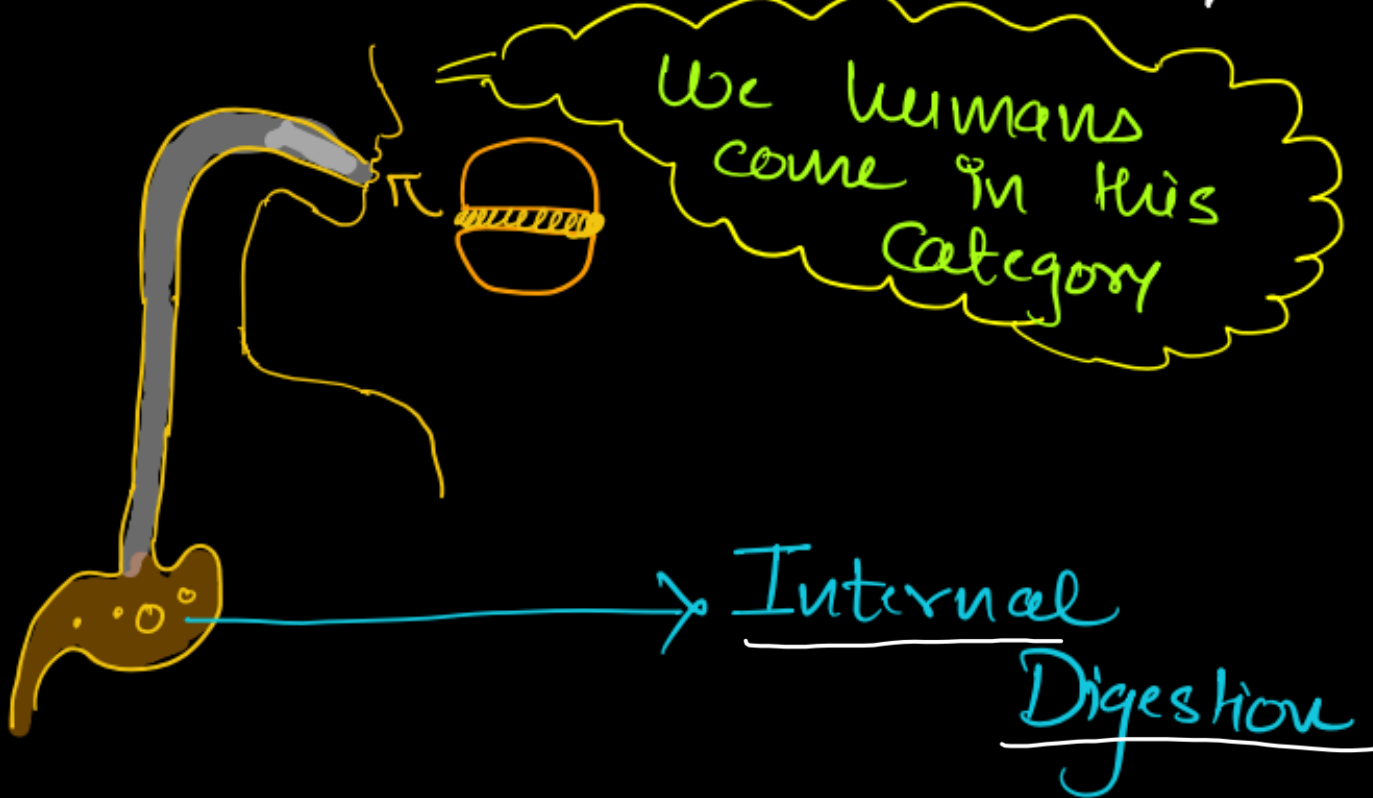
Organism who break down the food outside their body are

- (a) Rhizopus
- (b) Virus
- (c) Tapeworm
- (d) Cuscuta

External
Digestion

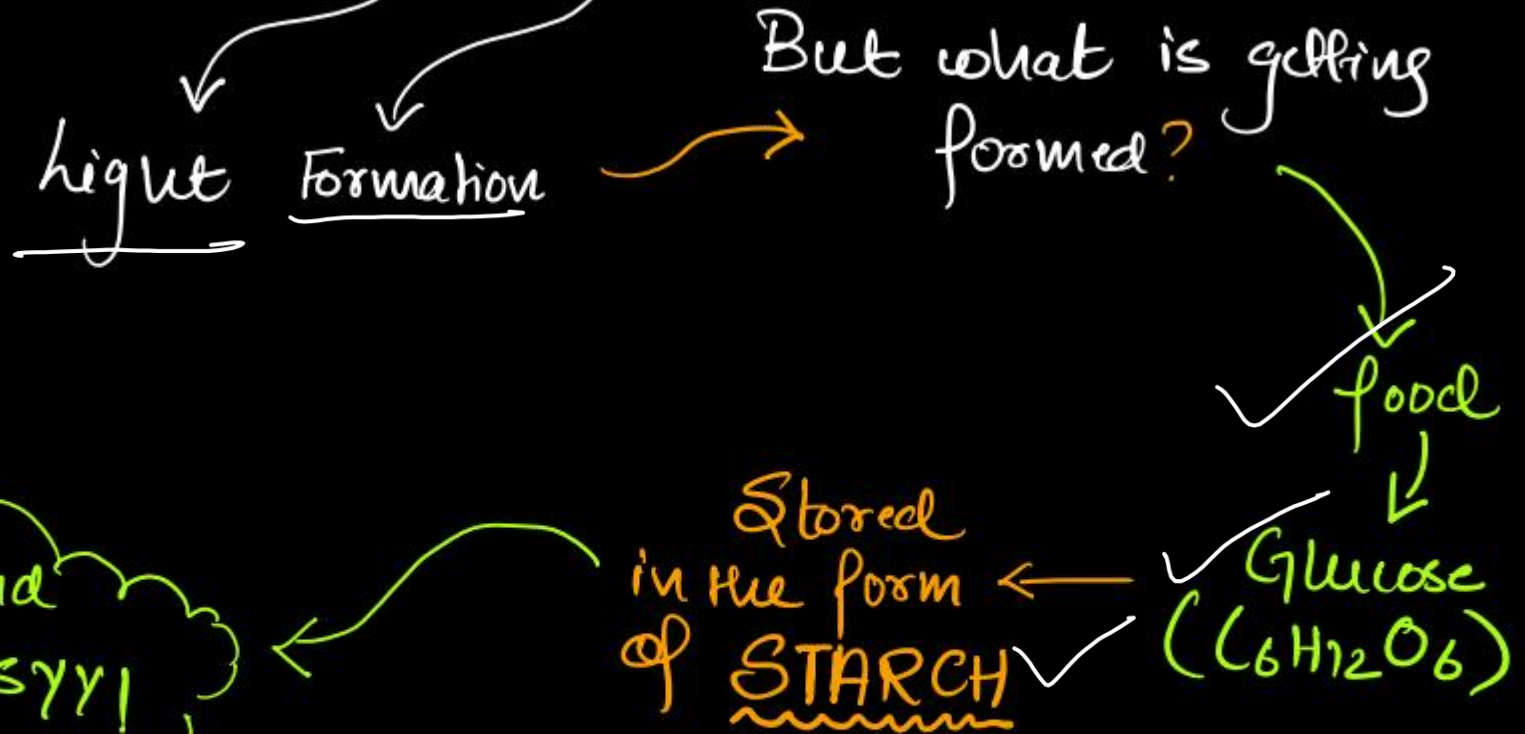
HOLOZOIC

Organisms ingest the organic food material and break down the food inside the body



Photosynthesis

Photosynthesis

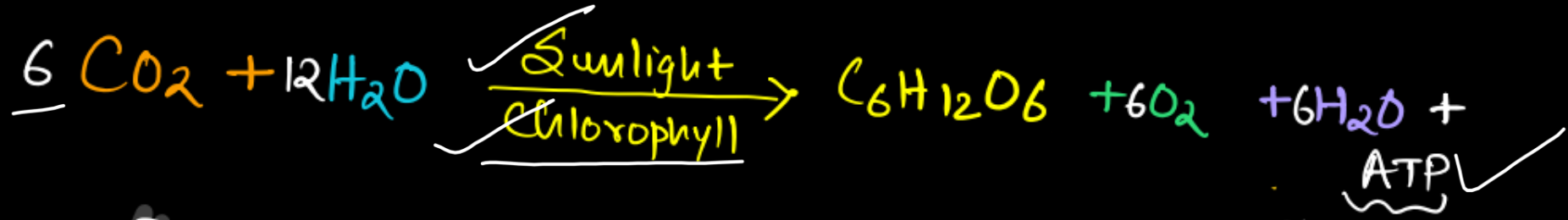


And it's EASY!



In humans it is stored in the form of Glycogen

Chemical Reaction of Photosynthesis



Chemical Energy

Does oxidation & Reduction happen here?



(Loss of Hydrogen)
Oxidation

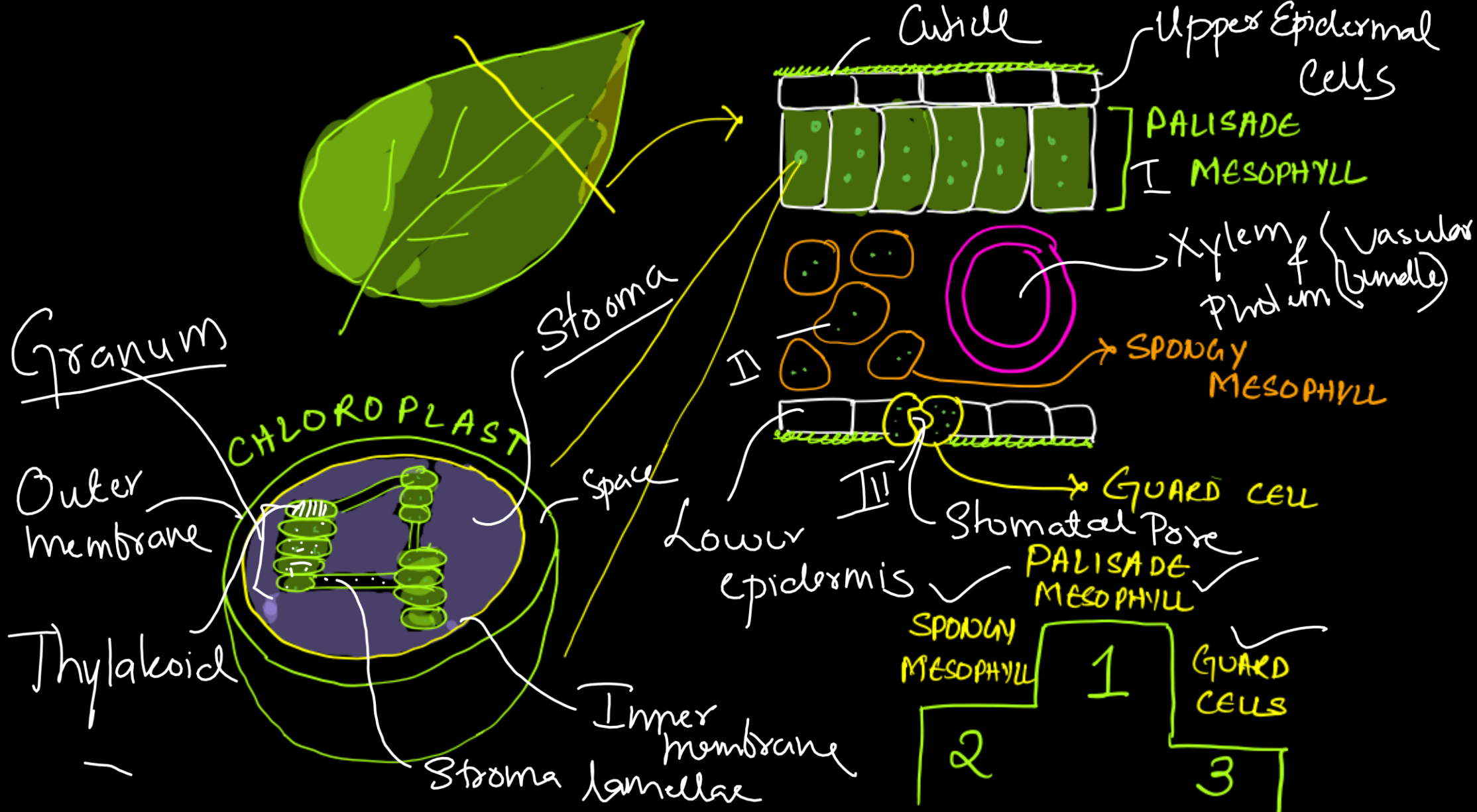


Reduction
(Addition of Hydrogen)

Nitrogen - Inorganic
Nitrates & Nitrites
Phosphorus, Iron
Magnesium

Structure of Leaf & Chloroplast

Story of leaf & Chloroplast



3 Events of Photosynthesis

Light Reaction

→ It is light dependant

→ Location: Thylakoid

→ 1st Event:

Absorption of light Energy by Chlorophyll pigments

→ 2nd Event: $(H_2O \rightarrow 2H^+ + O)$

Photolysis of water & Conversion of light Energy to Chemical Energy

ATP, NADPH

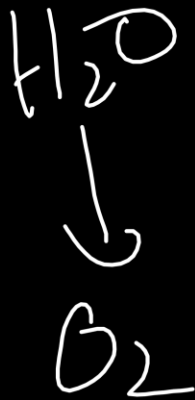
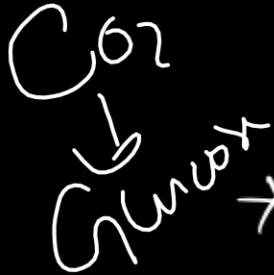
Dark Reaction ✓ [Calvin Cycle]

→ It is Light Independent (Can happen with or without light)

→ Location: Stroma

→ The chemical Energy made during light reaction is used in the 2nd 3rd Event:

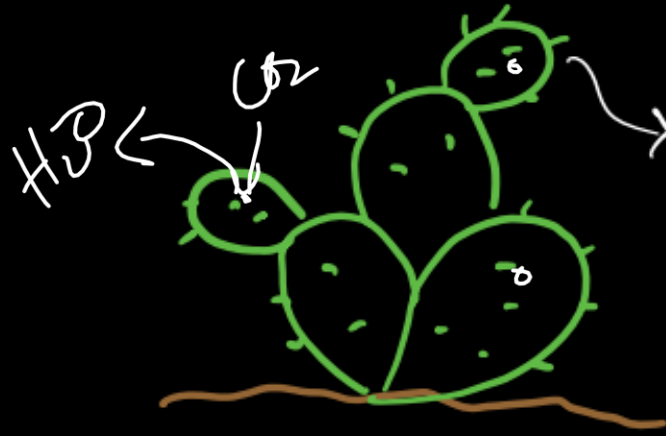
Reduction of CO_2 to Carbohydrate.



Q. If the plant doesn't receive light energy, will dark reaction happen?

No ←

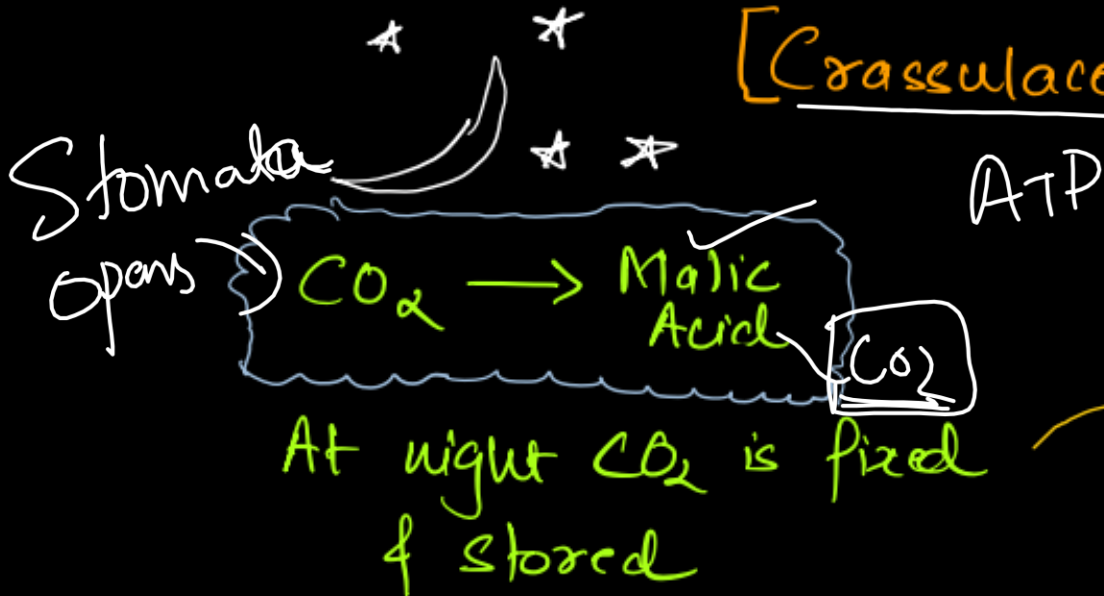
Q Does these steps occur one after the other in all plants?



Plants like cacti perform a specialized form of photosynthesis

↓
CAM

[Crassulacean Acid Metabolism]



In Morning with the help of light energy photosynthesis continues

Stomata & Its Working

STOMATA

Subsidiary cell

Stomatal pore

guard cells

when enough light or low CO₂ is there

① Proton pumps open
H⁺ moves outside

② As H⁺ moves out, ^{(high solute) inside}
K⁺ ions gets inside

Now solvent from outside moves into the Guard cell

(high solvent) outside



Guard cell Swollen ✓
↓
turgid ✓
↓
Stomata opens ✓

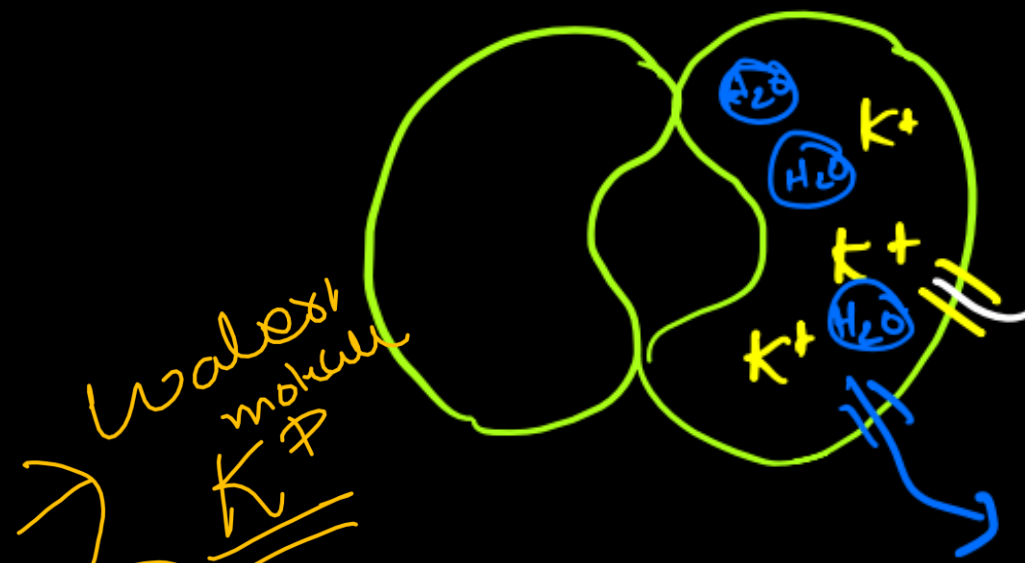


Open

when there is no light or
excess of CO_2 ↓

→ K^+ ions move outside
↓
Solute becomes
more outside

H_2O molecules move
outside as solute is
more outside now & it
creates an hypertonic
environment.



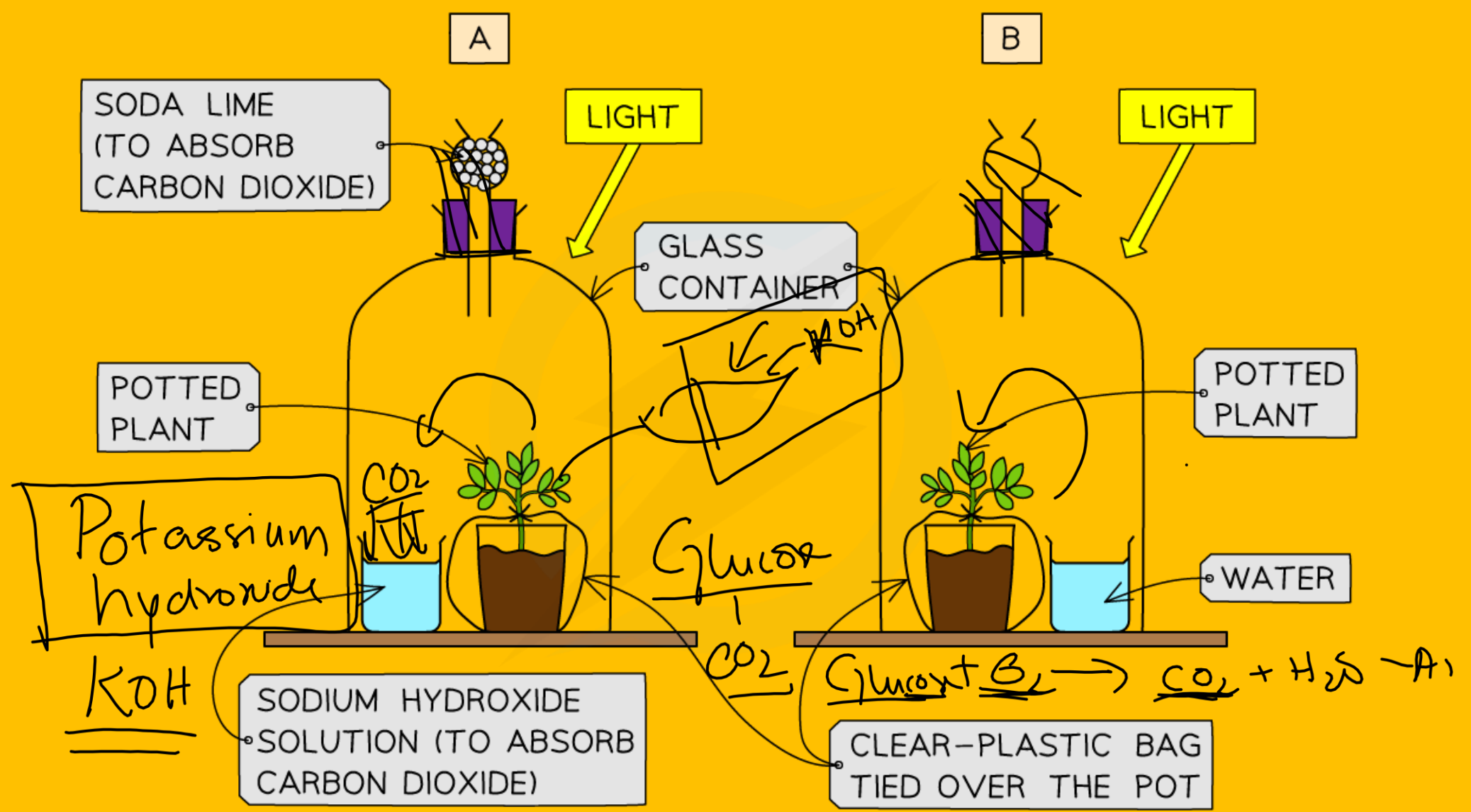
walaxi
mohani
 K^+
 H_2O

Guard Cell
shrinks

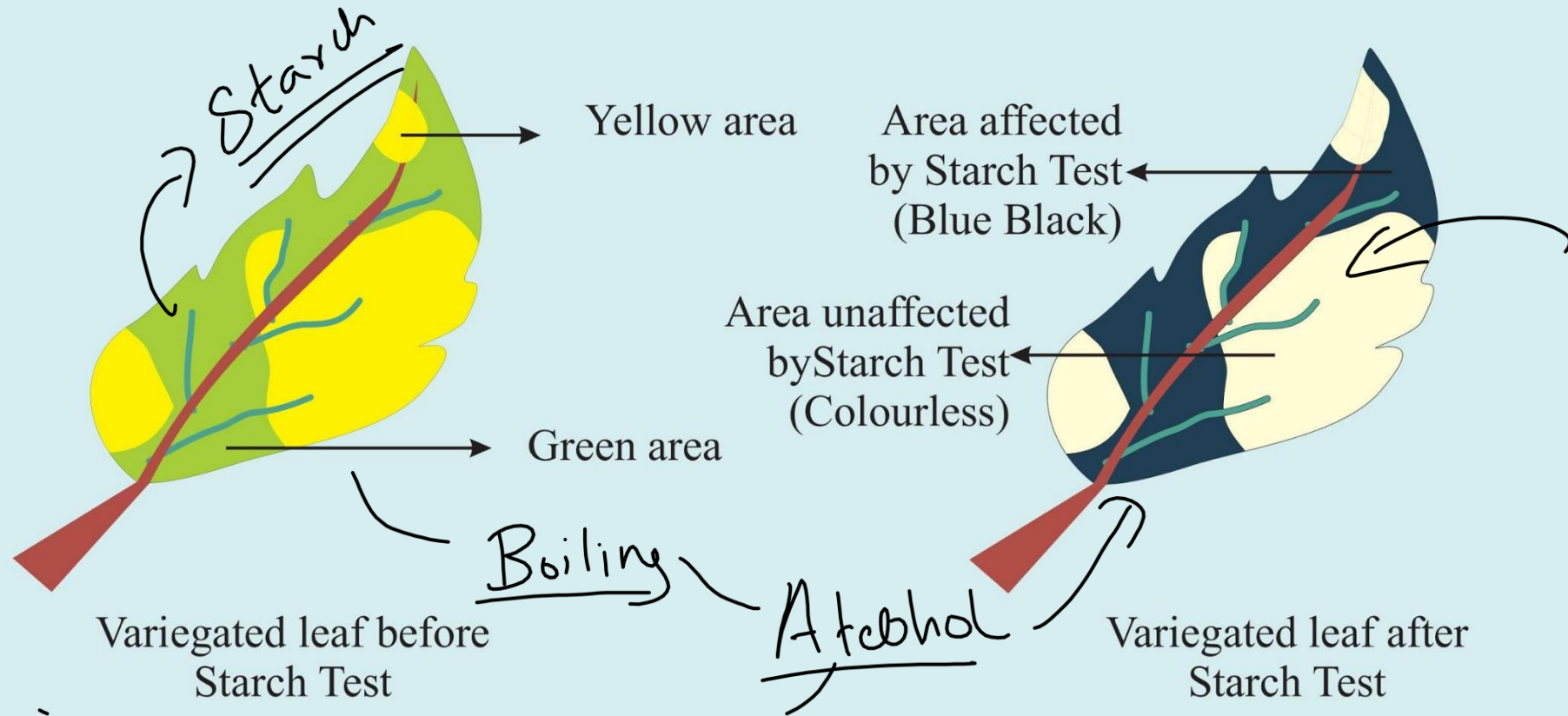
↓
Shrunkun
↓
Stomata
closes



Experiment for Importance of Carbon Dioxide

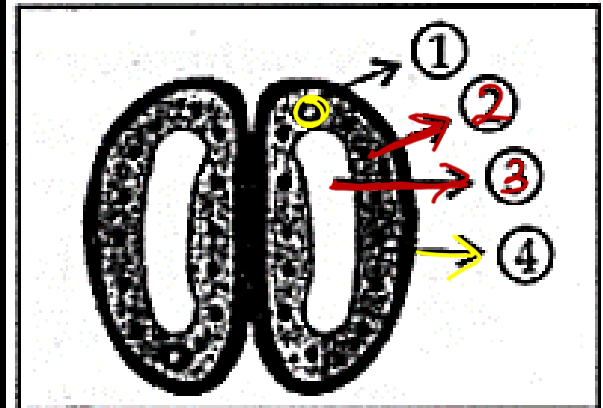


Experiment for Importance of Chlorophyll



EXPERIMENT TO SHOW CHLOROPHYLL IS NECESSARY FOR PHOTOSYNTHESIS

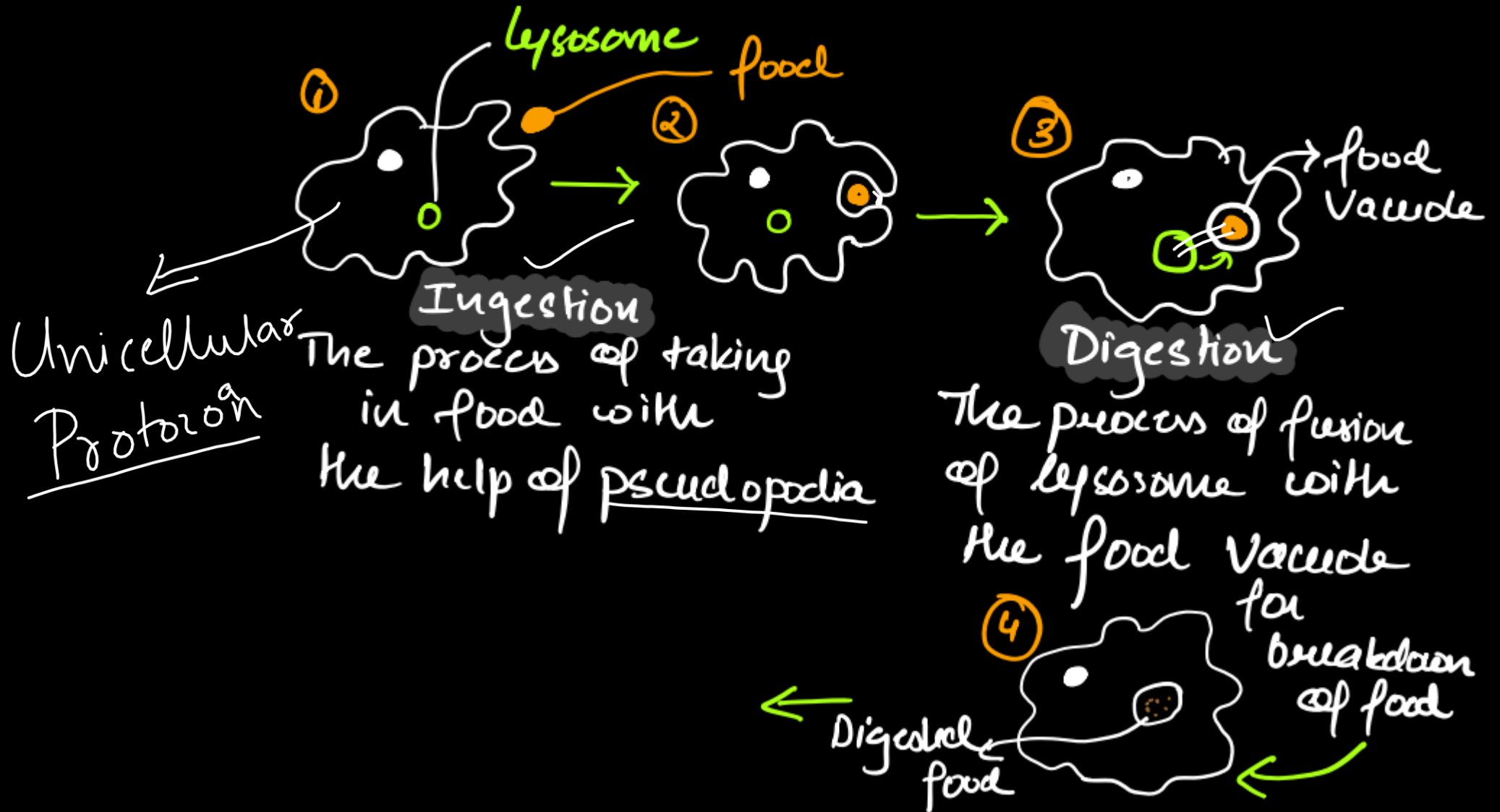
Time for PYQ Practice



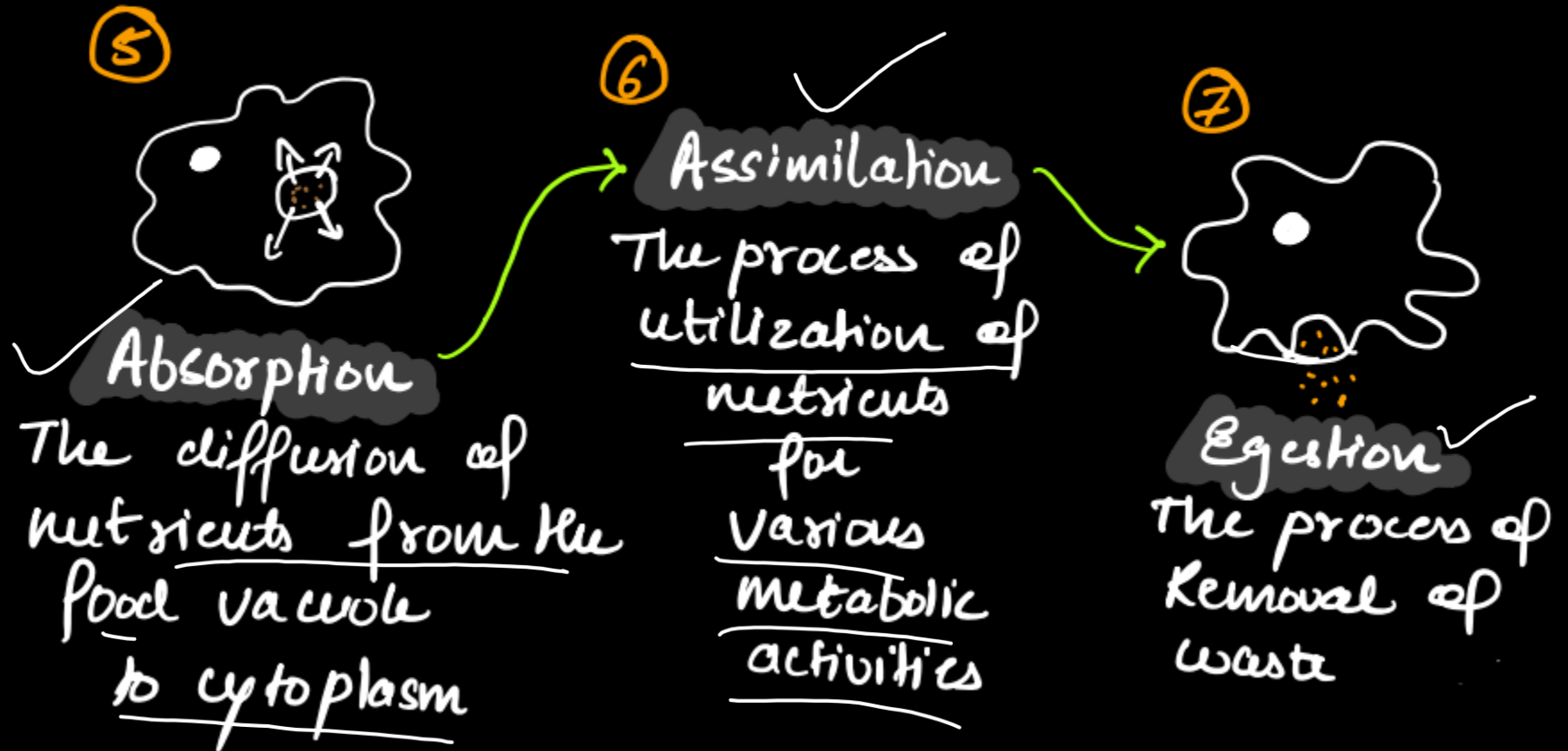
In the given diagram of a closed stomata: (1), (2), (3) and (4) respectively are-

- (a) nucleus, chloroplast, guard cell, vacuole
- (b) nucleus, chloroplast, vacuole, guard cell
- (c) chloroplast, nucleus, vacuole, guard cell
- (d) vacuole, guard cell, nucleus, chloroplast

Nutrition in Amoeba

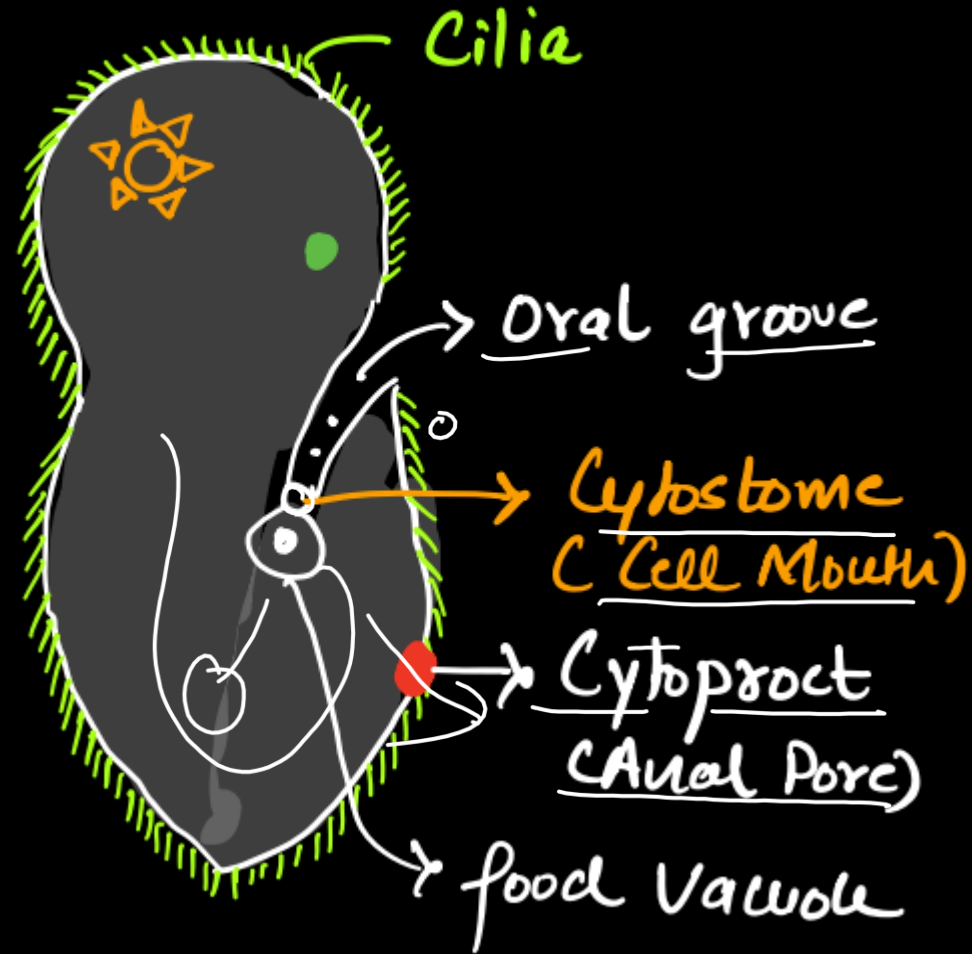


Nutrition in Amoeba



Nutrition in Paramecium

Nutrition in Paramecium

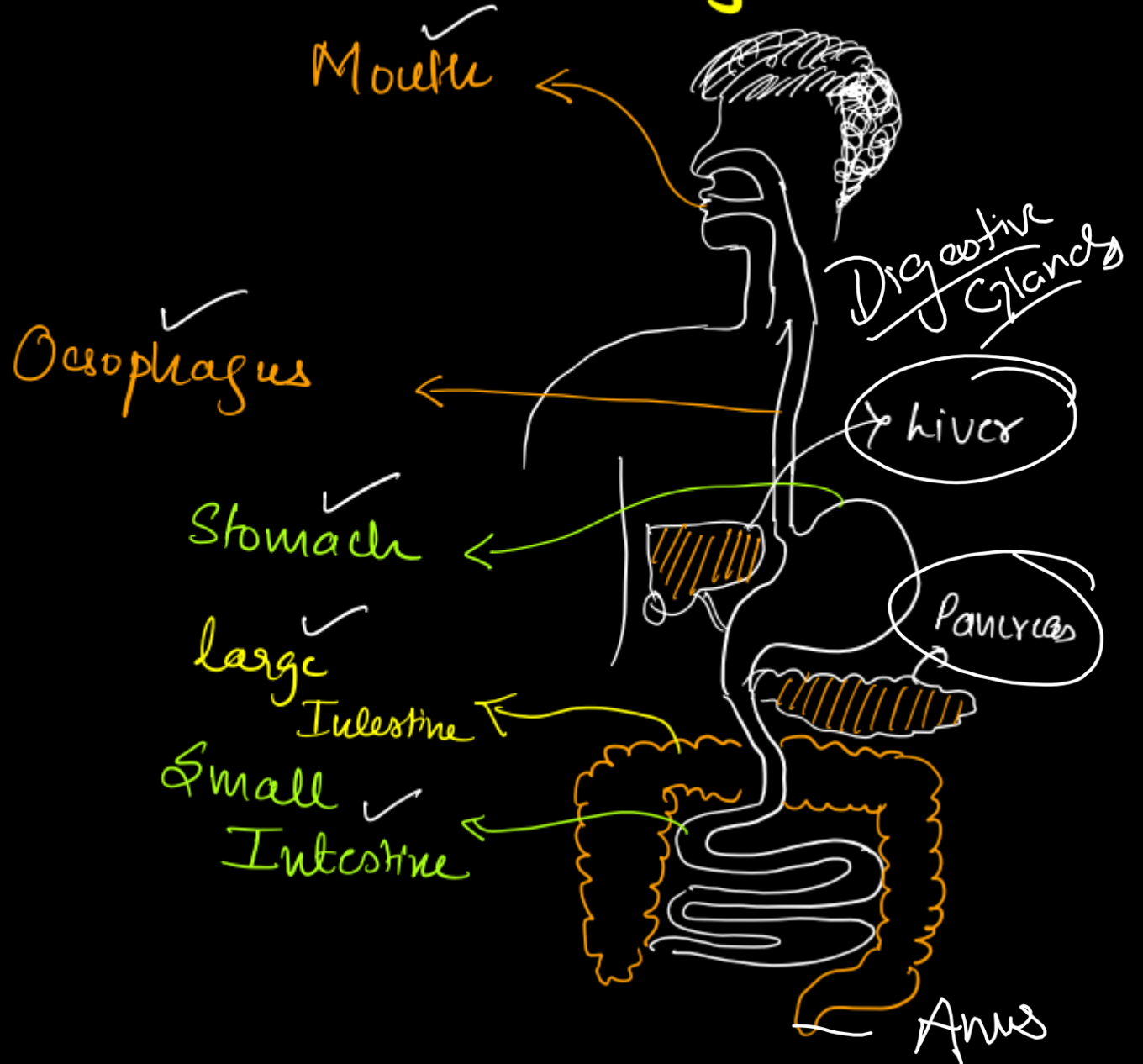


- Ingestion
- Digestion
- Absorption
- Assimilation
- Egestion

Nutrition in Human Beings

Nutrition in Human Beings

Gastro-
Intestinal
Tract
(GI Tract)
or
Alimentary
Canal



PARTS OF THE DIGESTIVE SYSTEM

*** First breakdown of food takes place here

① Mouth: Saliva → Bicarbonate Ions

Provides a neutral medium

TEETH

Exaggerates

Thecodont
Diphyodont
Heterodont

→ Lysozyme

Kills all the Pathogens

→ Salivary Amylase (Ptyalin) ✓

(Complex)
Starch

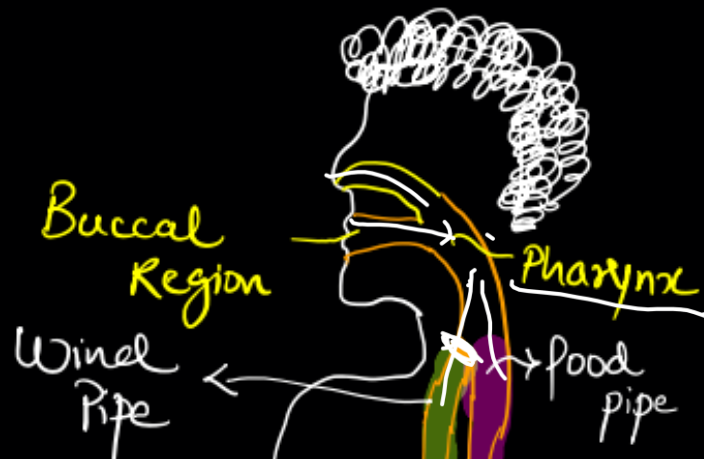
[pH 6-8]
30%

(Simple)
Maltose

② Esophagus

(Peristalsis)

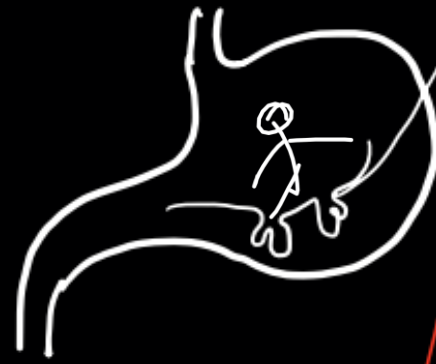
Involuntary
Contraction &
Relaxation



PARTS OF THE DIGESTIVE SYSTEM

Stomach:

Amino Acids



GASTRIC PIT

① Oxyntic Cell / Parietal Cell

HCl (Hydrochloric Acid)

- Kills Germs
- Provides Acidic pH for activation of enzymes

② Goblet Cell

Mucus

- Protects stomach wall from Acidic medium

③ Chief Cells

Pepsinogen (Inactive)

medium (given by HCl)
Acidic pH 1.8
Pepsin (Active)

Proteins

Acidic medium

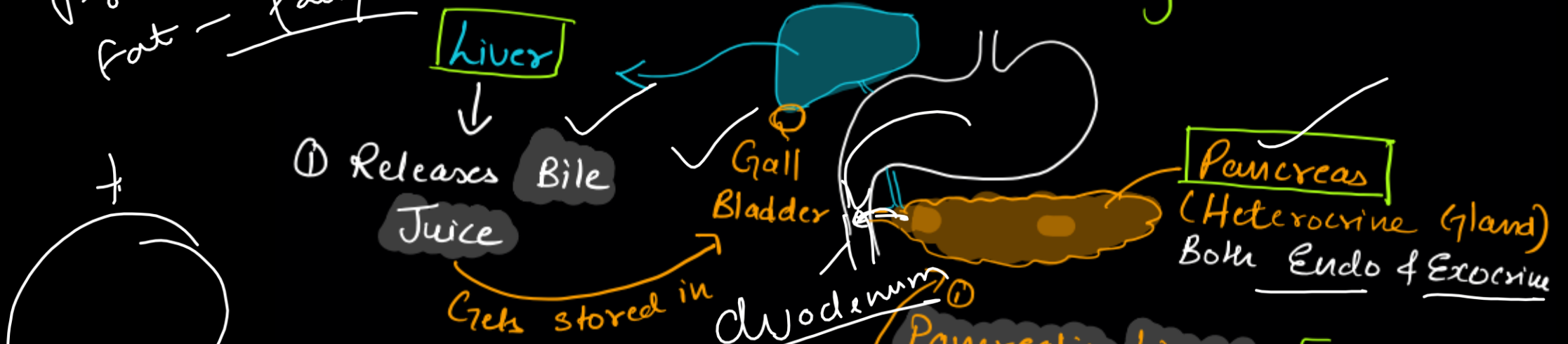
Peptides

** First breakdown of protein

PARTS OF THE DIGESTIVE SYSTEM

Carbo → glucose
 Protein → Amino Acid
 Fat → Fatty Acid

Digestive Glands



① Releases Bile Juice

Gall Bladder

Pancreas
 (Heterocrine Gland)
 Both Endo & Exocrine

Gets stored in duodenum ①

Bile Juice = Bile Salt + Bile Pigments

Function:

- Makes the food Alkaline
- Emulsification of fats

(Breakdown of large Physical fat Globules to smaller fat globules such that

Pancreatic Lipase [FAT]
 Could Act on

Smaller fat → fatty + Glycerol Acid

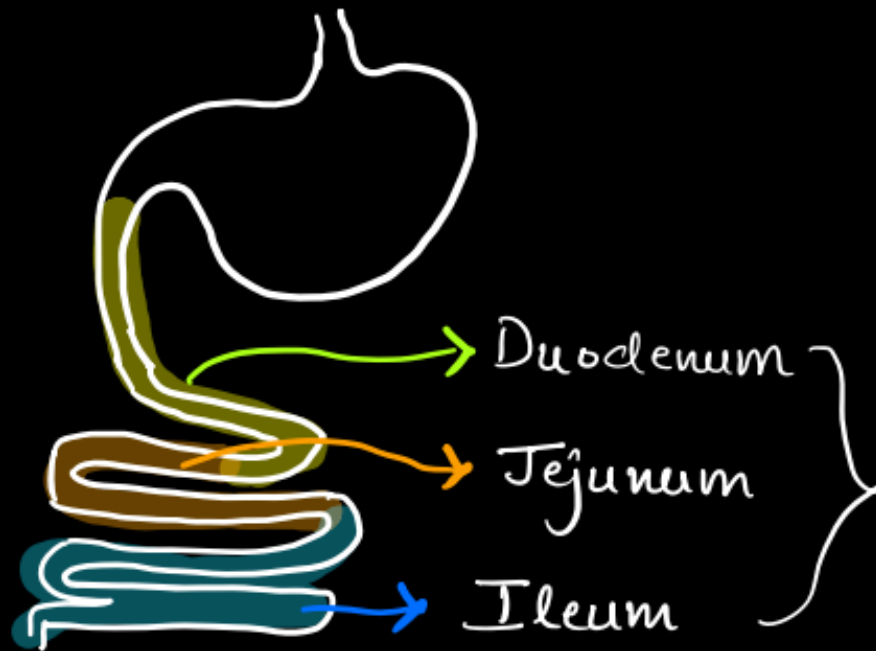
② Pancreatic Amylase [CARBOHYDRATE]

Starch → Maltose

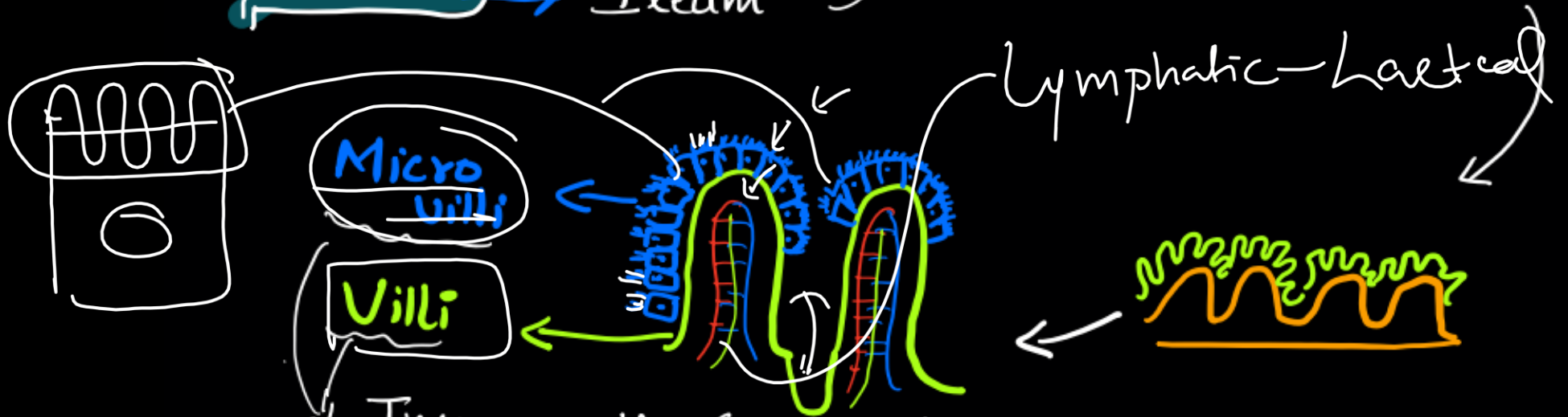
③ Pancreatic Trypsin [PROTEINS]

Proteins → Peptides
 [Pancreatic Enzymes need Basic pH]

PARTS OF THE DIGESTIVE SYSTEM



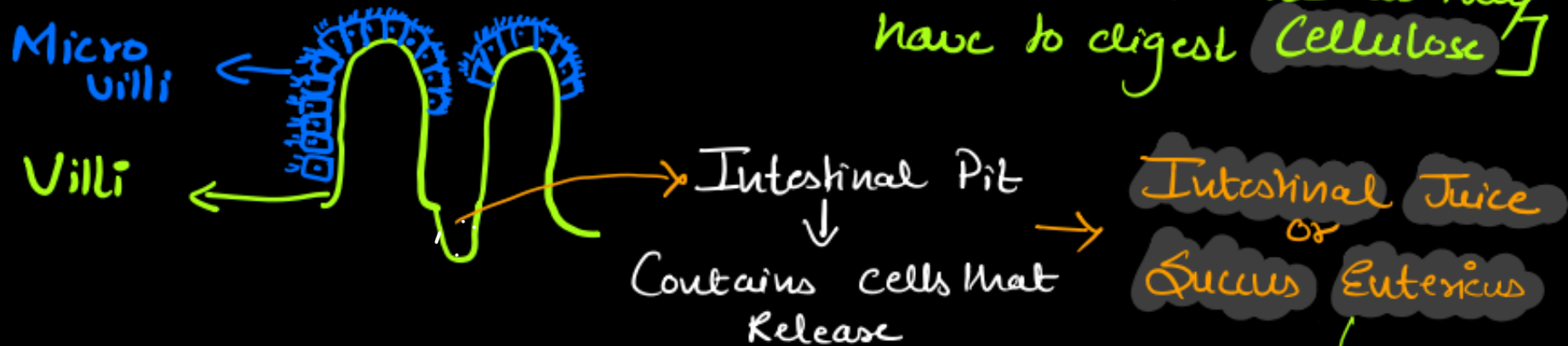
Small Intestine



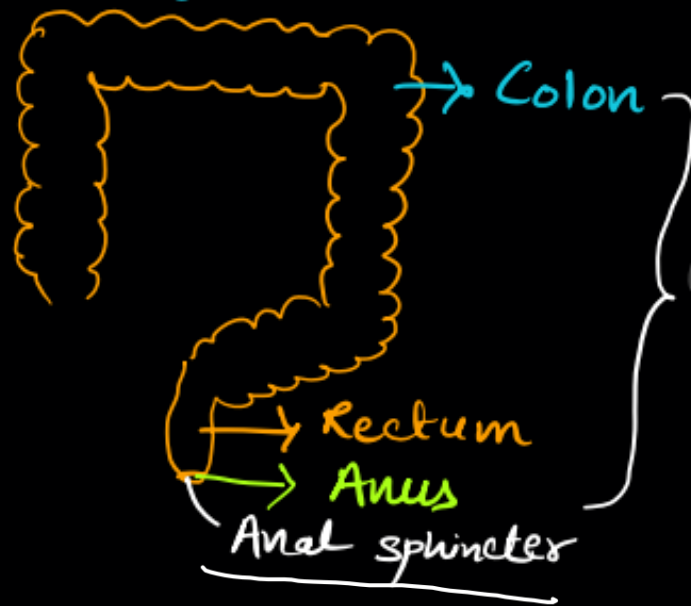
Increases the Surface Area
*** for absorption of Nutrients into the blood vessels

PARTS OF THE DIGESTIVE SYSTEM

→ Small Intestine Continues: [Herbivores have longer Small Intestine as they have to digest Cellulose]



→ Large Intestine



Helps in Reabsorption of Water

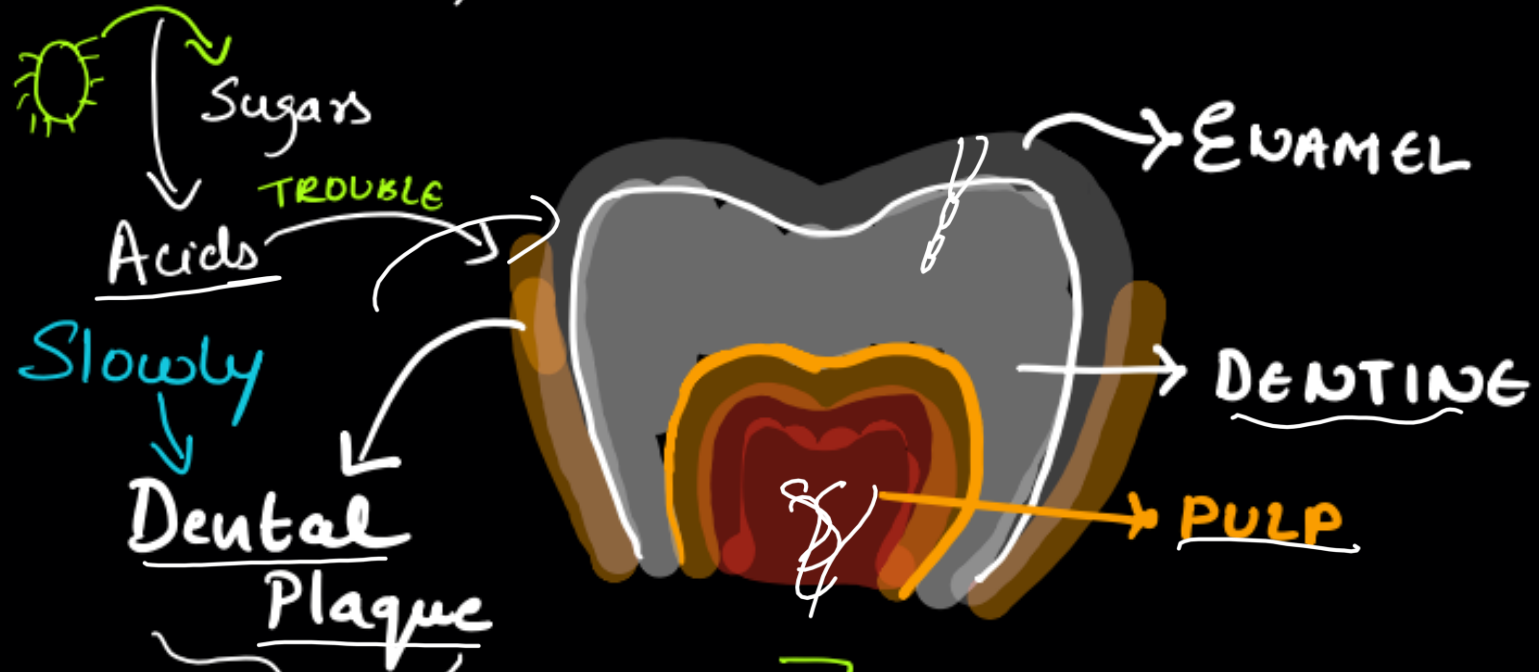
Intestinal Juice or Succus Entericus

Contains Enzymes that do the final Breakdown of

- Carbohydrates
 - Proteins and fats
- Glucose | Amino Acid | fatty and Gly



What happens if you don't brush your teeth often?



Mass of Bacterial Cells
+
food particles

Because of this Giant Wall, Saliva Cannot act on Acid and Neutralize it.

Time for PYQ Practice

(a) State the form in which the following are stored:

(i) Unused carbohydrates in plants. *Glucose* → STARCH

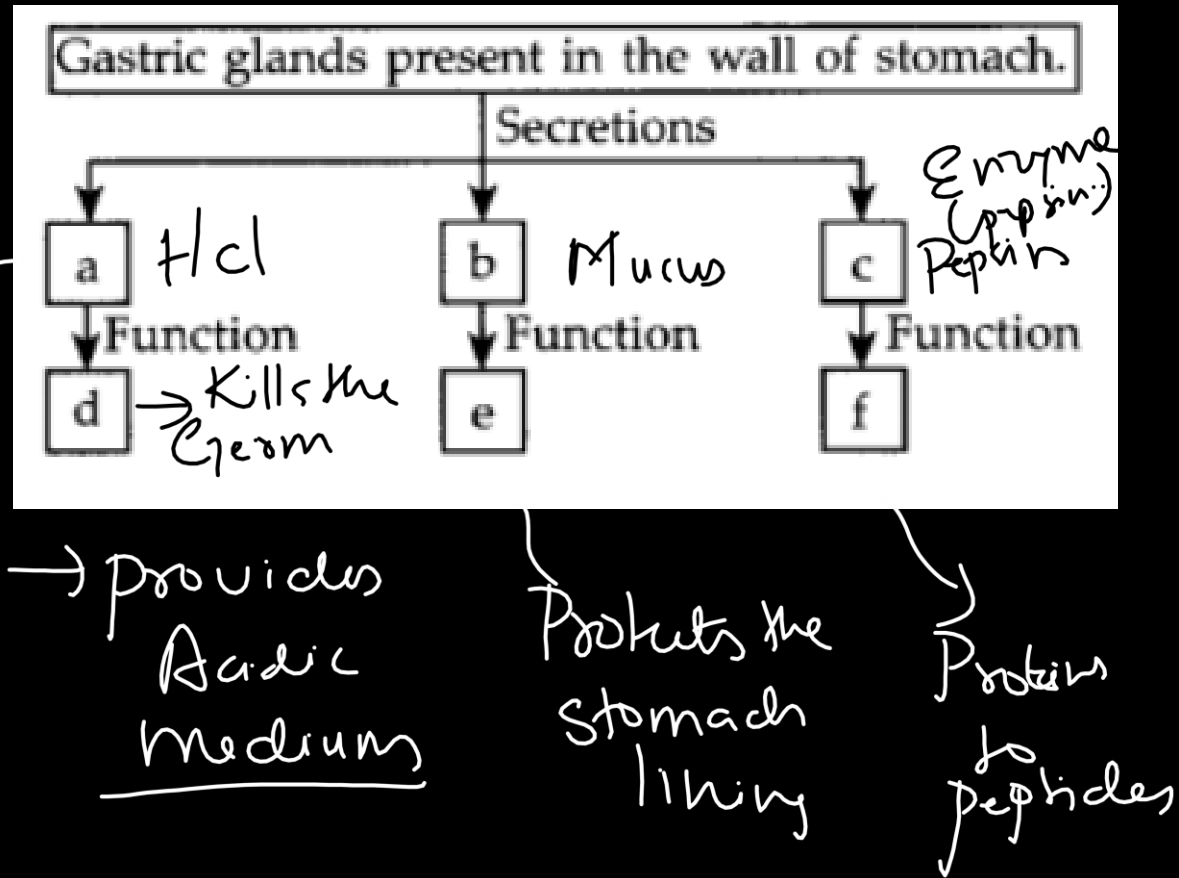
→ **(ii) The energy derived from food in humans**

ATP

Adenosine Tri-phosphate

Time for PYQ Practice

Complete the flow chart:



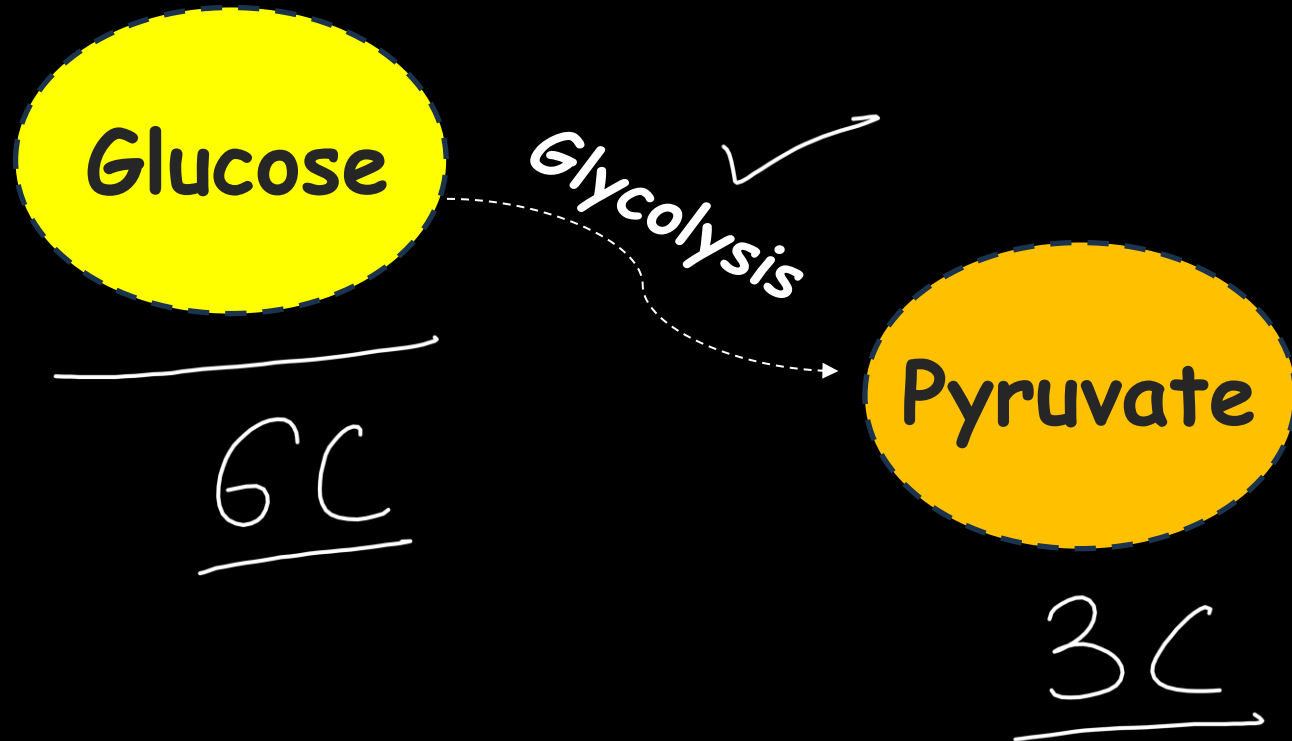
The image features a dark, blurred background of a tree with a central black oval containing the text 'Respiration'. The text is in a bold, yellow, sans-serif font. The word 'Respiration' is split across two lines: 'Respiratio' on the top line and 'n' on the bottom line. The oval is outlined in white.

Respiratio n

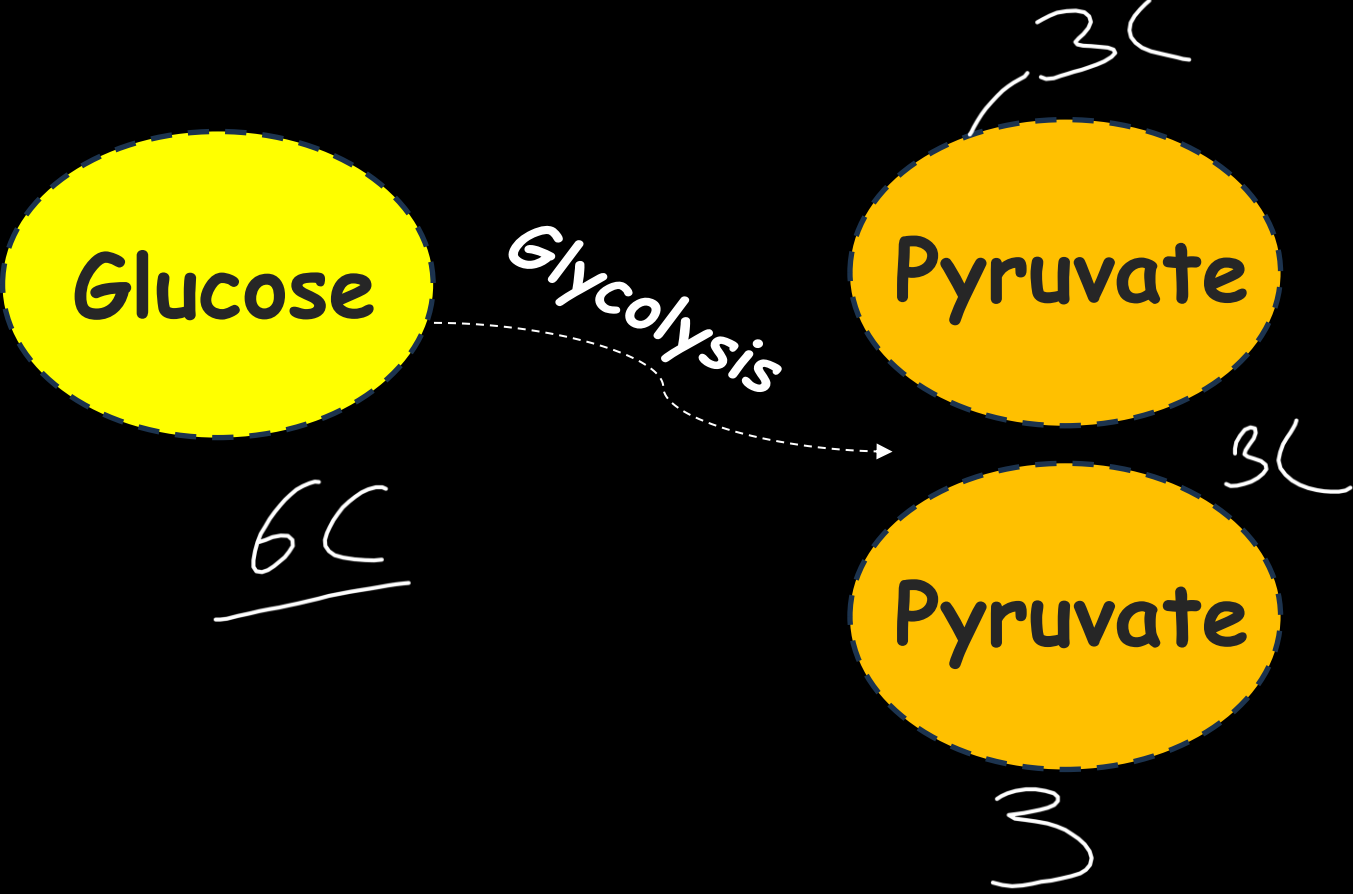
How is **Respiration** different from **Breathing** ?

Breathing is the mechanical action of getting air in and out of the Respiratory organ

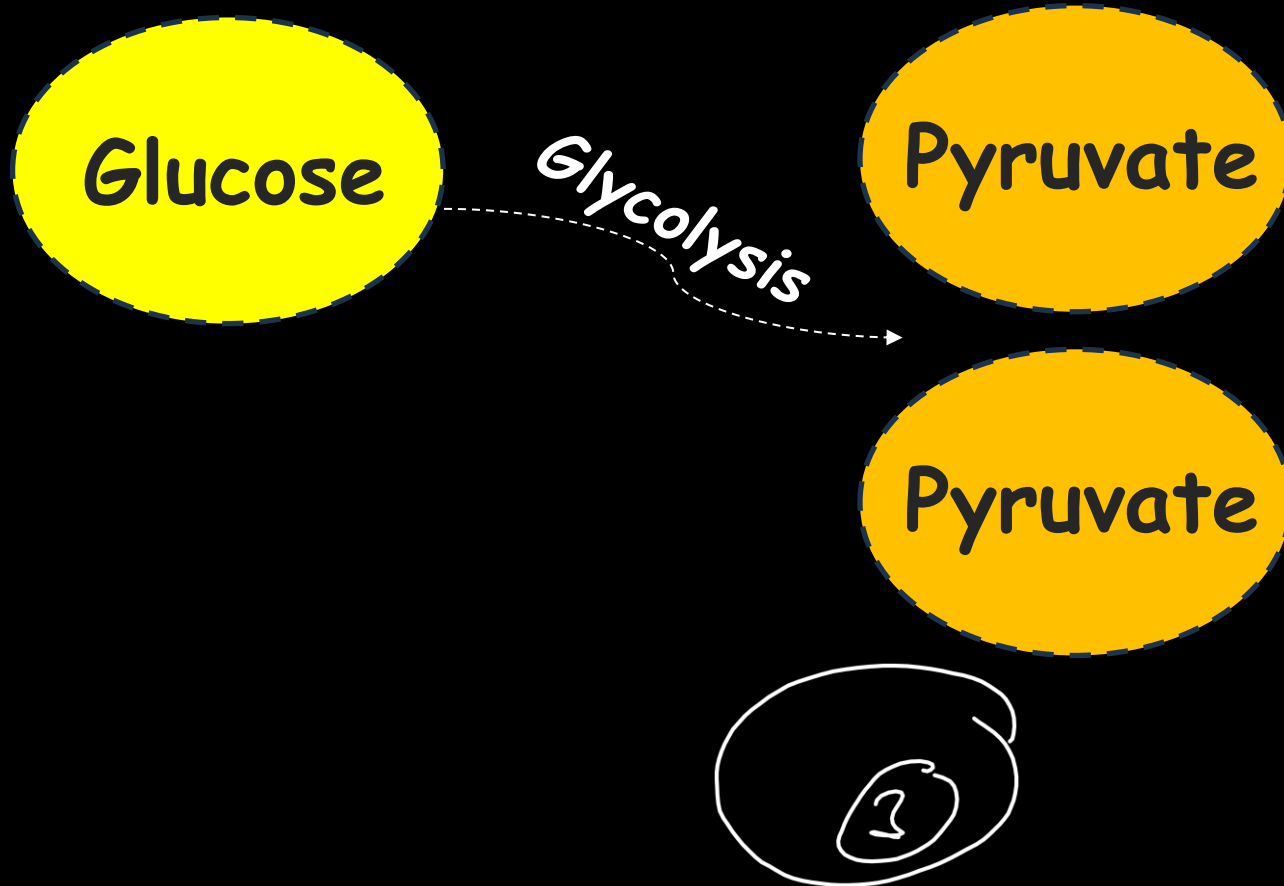
Cytoplasm



Cytoplasm



Cytoplasm



Mitochondria



Cytoplasm

Glucose

Glycolysis

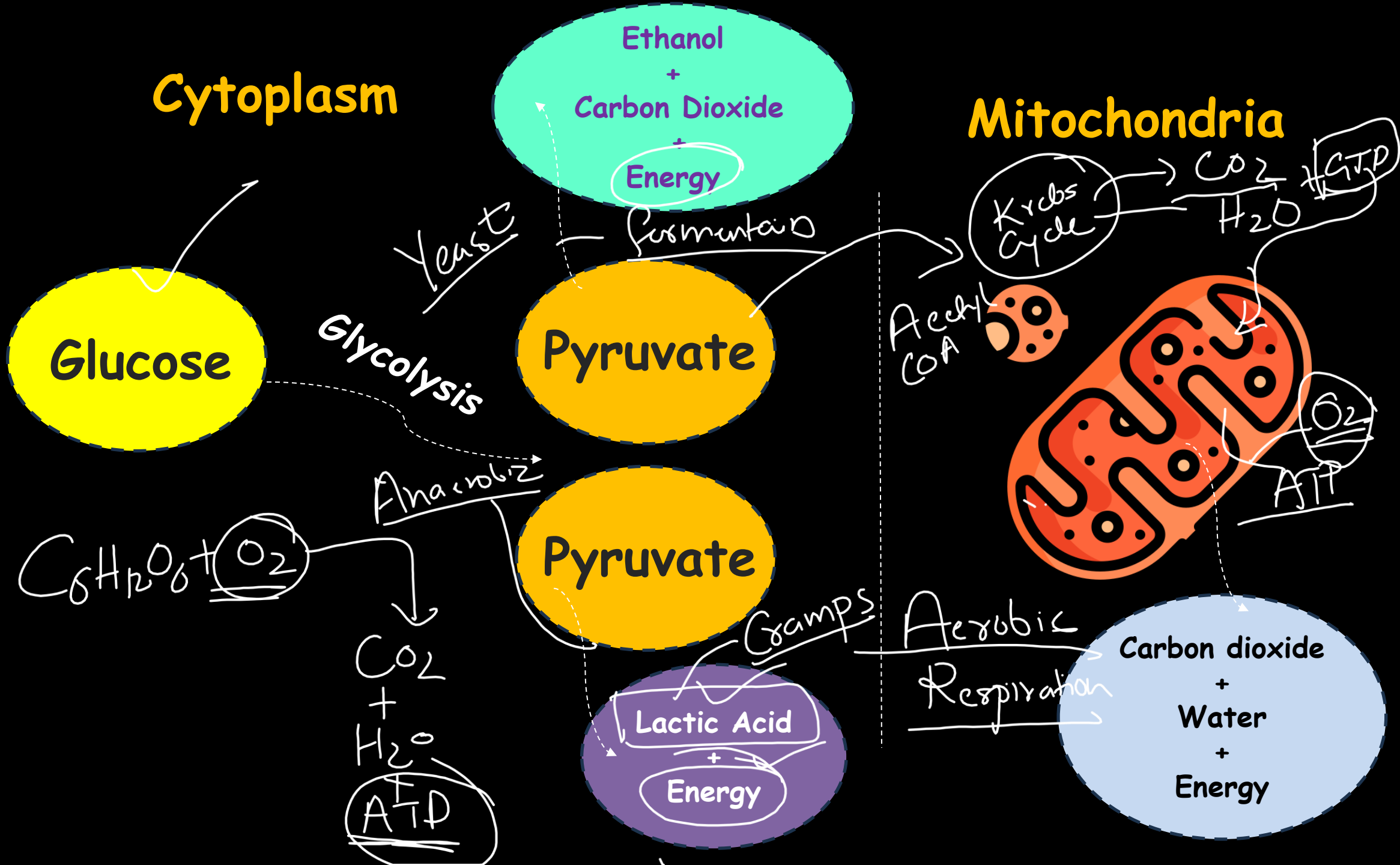
Pyruvate

Pyruvate

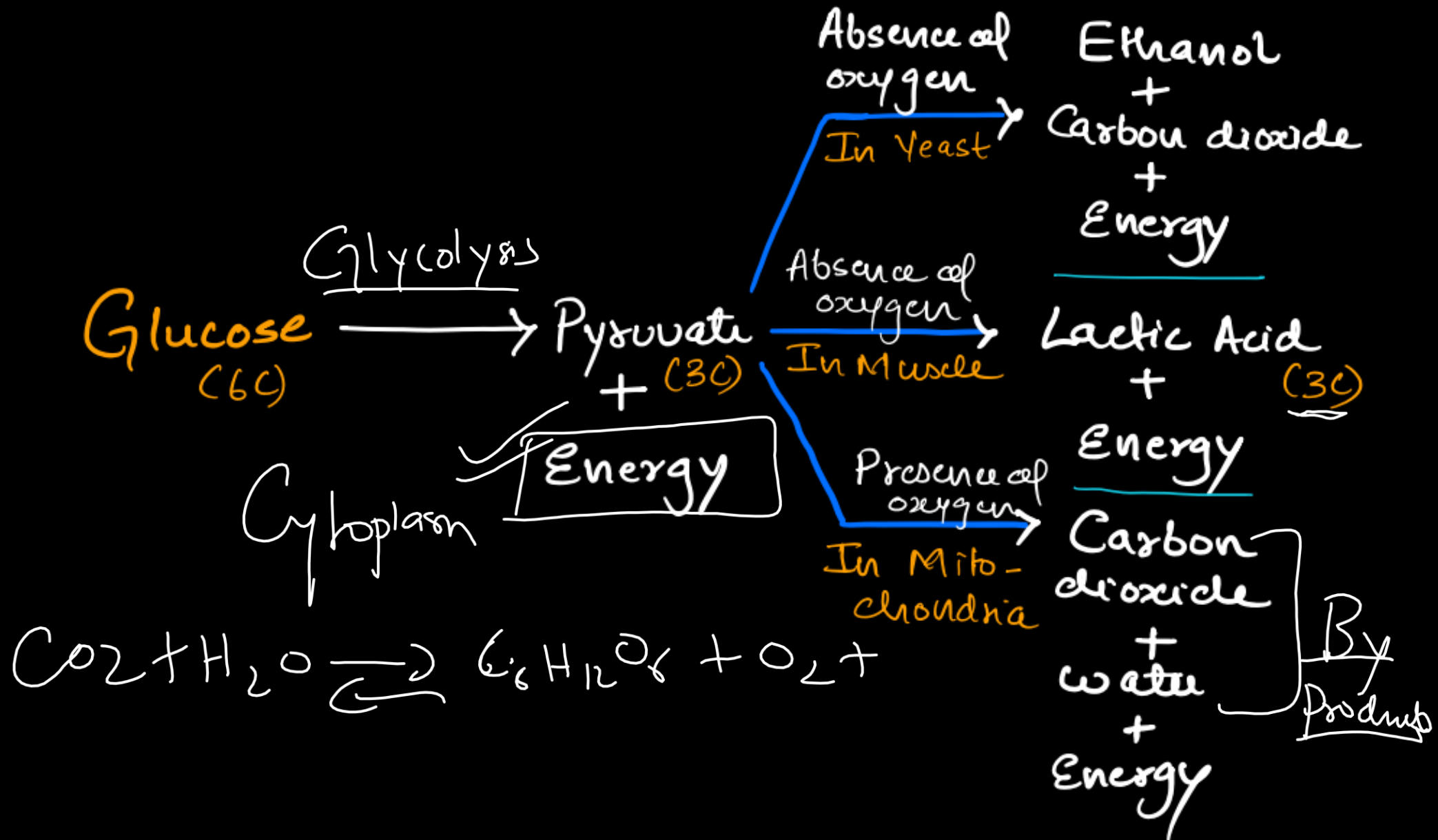
Ethanol
+
Carbon Dioxide
+
Energy

Mitochondria

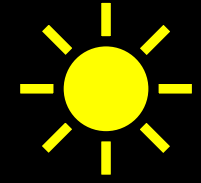




IMPORTANT! IMPORTANT! IMPORTANT!



Gaseous Exchange in Plants



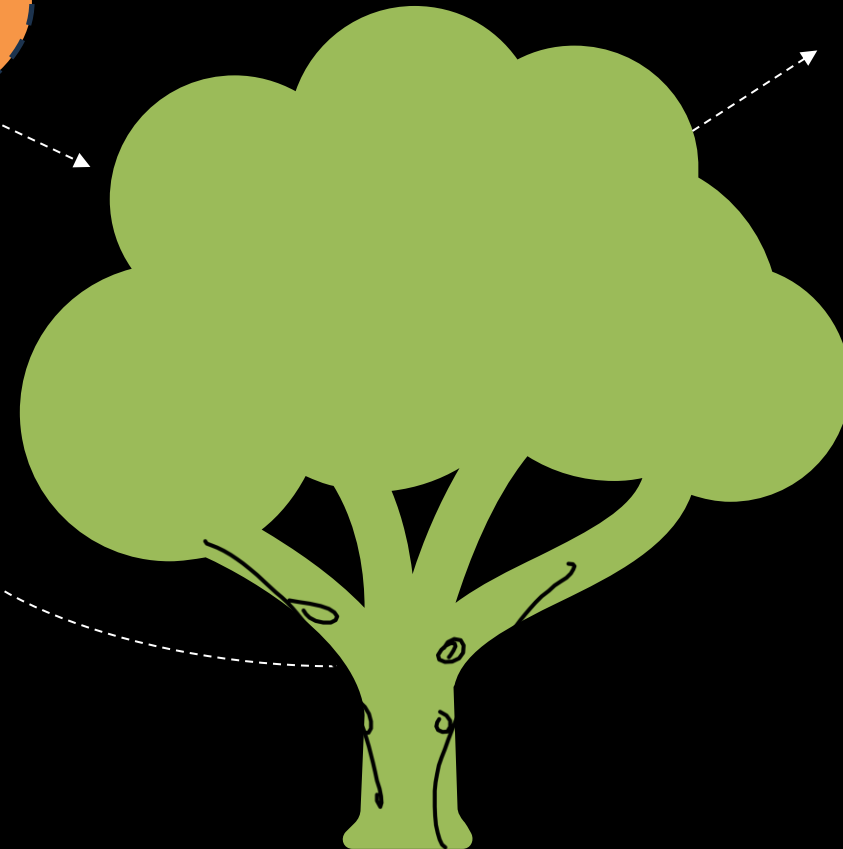
Carbon
Dioxide from
atmosphere

Oxygen

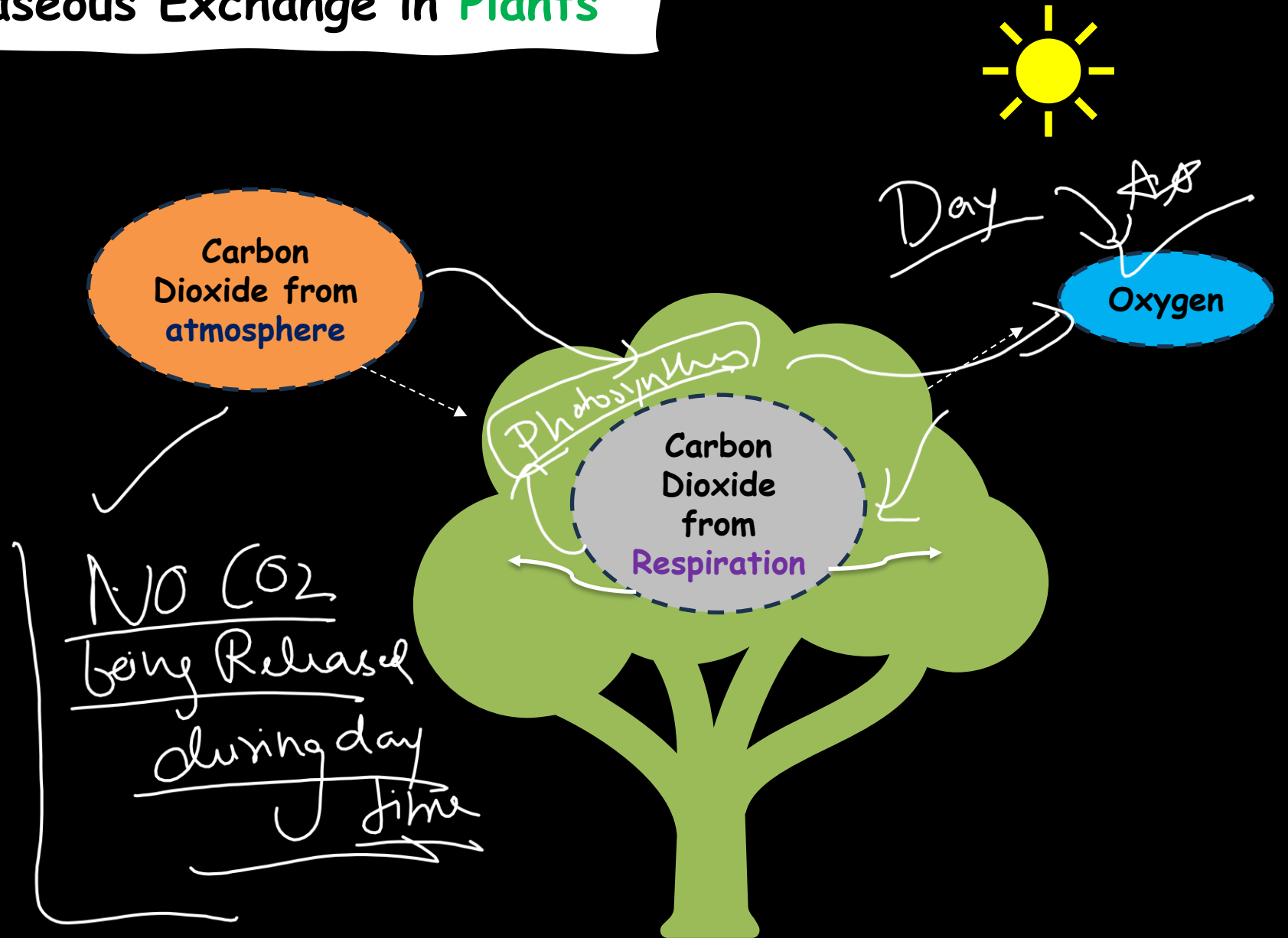
Gaseous exchange in plants occurs with the help of **DIFFUSION**

Through

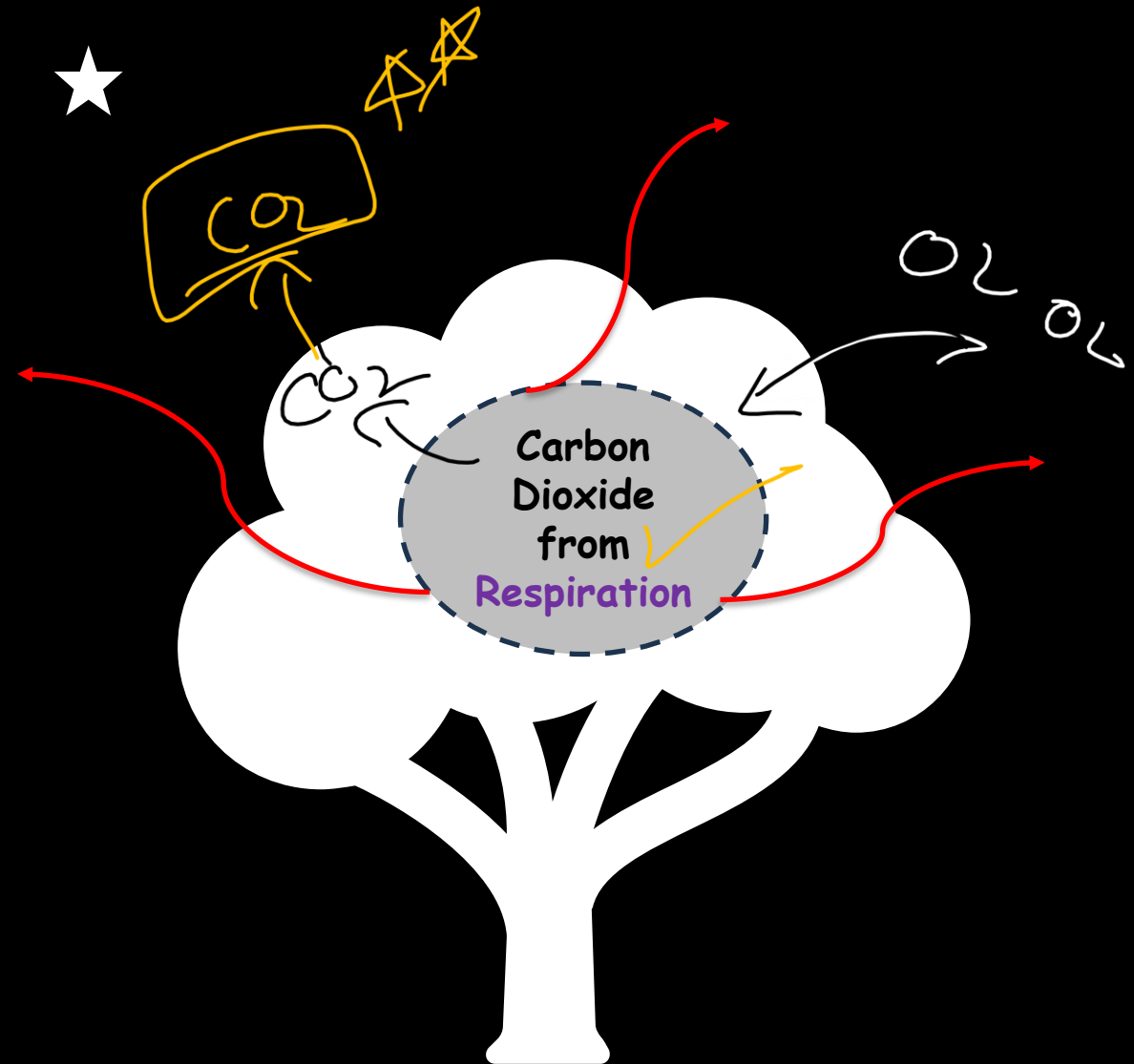
1. Stomata ✓
2. lenticels ✓
3. Inter-cellular spaces.



Gaseous Exchange in Plants



Gaseous Exchange in Plants

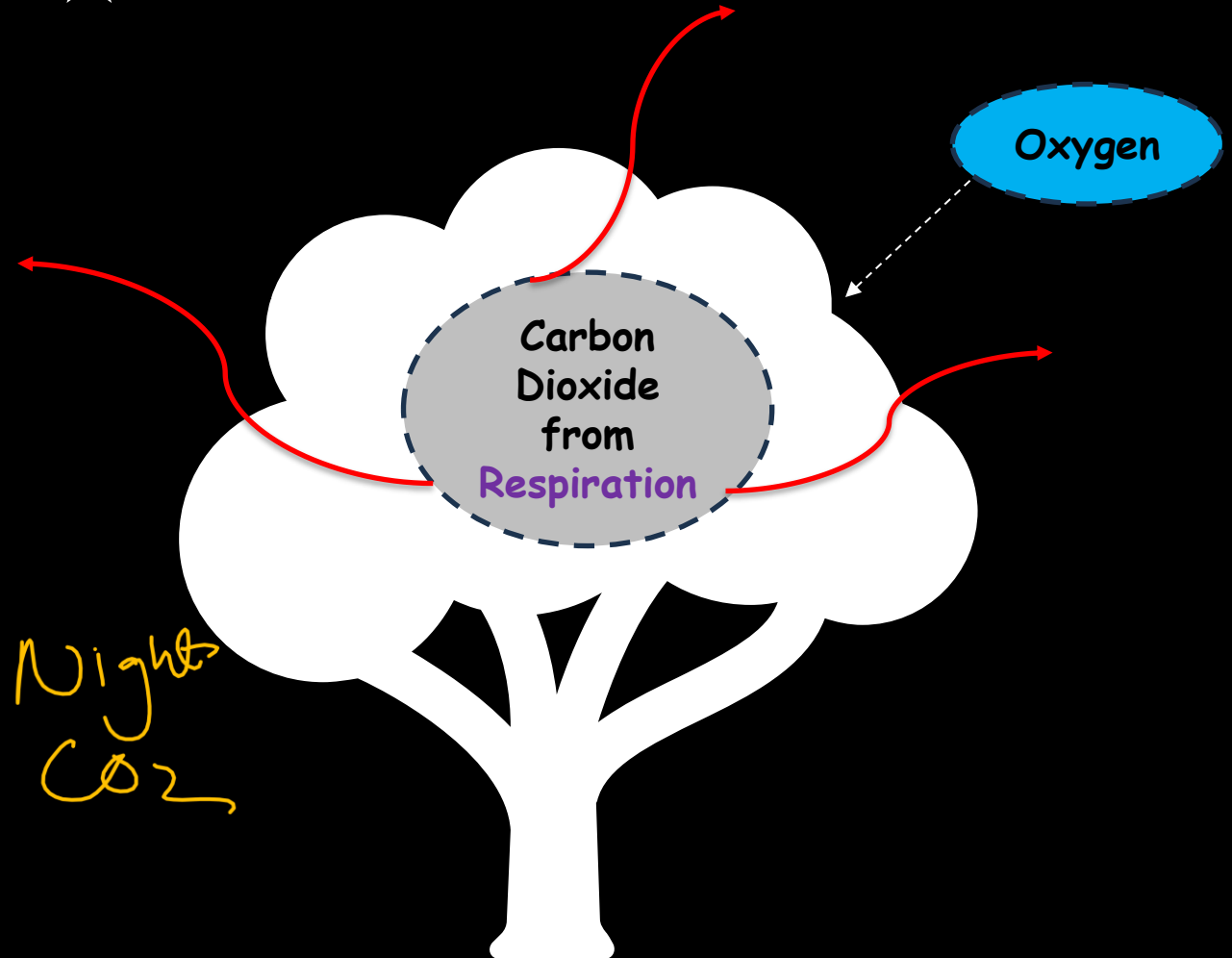


Gaseous Exchange in Plants

At night, when there is no photosynthesis occurring, CO_2 elimination is the major exchange activity going on. During the day, CO_2 generated during respiration is used up for photosynthesis, hence there is no CO_2 release. Instead, oxygen release is the major event at this time.

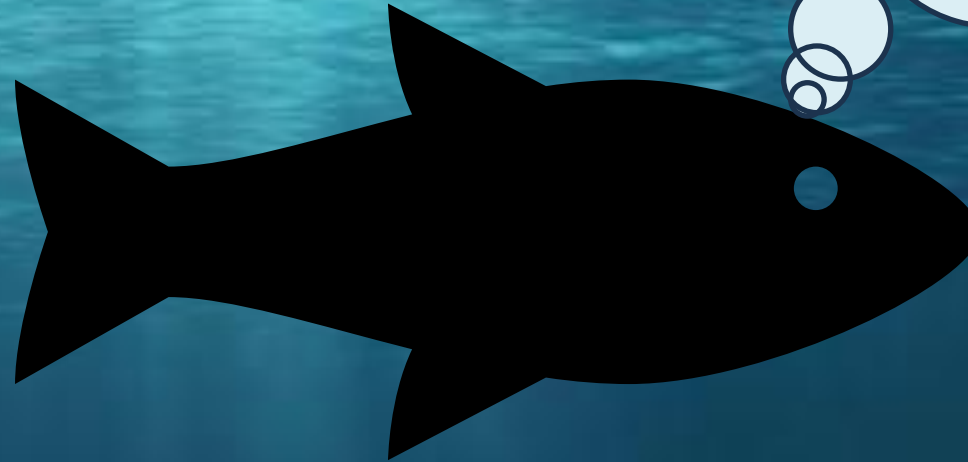
Morning
Oxygen

Night
 CO_2



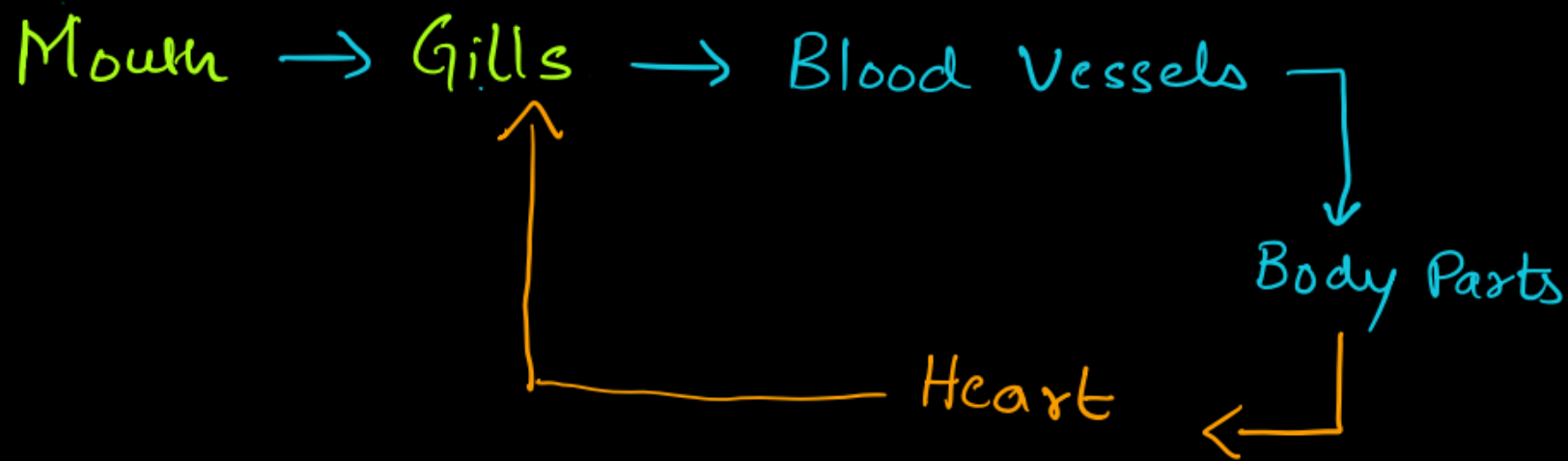
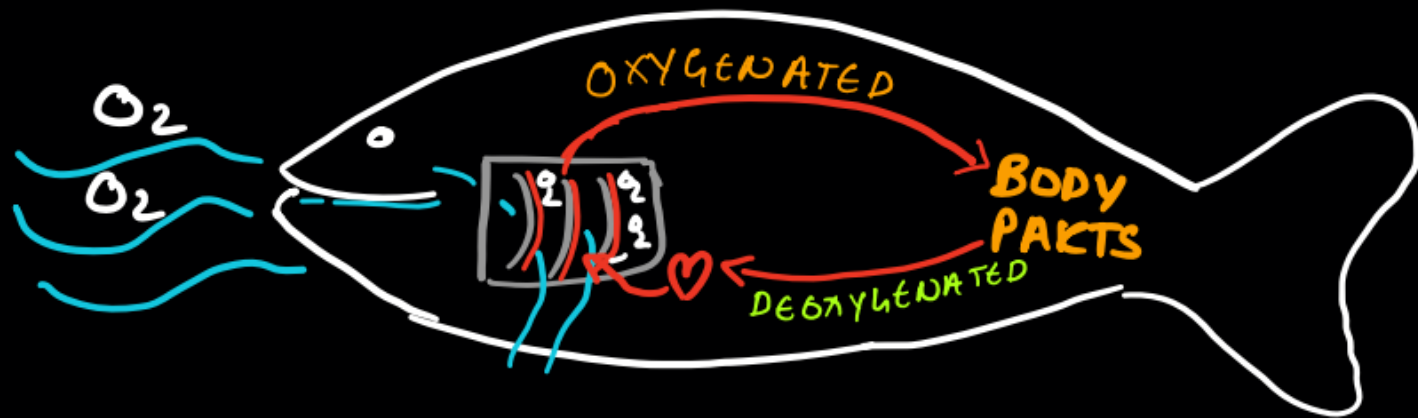
Gaseous Exchange in Fishes

Gaseous exchange in fishes occurs through GILLS, which takes in the **Oxygen dissolved** in water.



I am tired of taking
100 breaths/min!
There's so less
dissolved oxygen up
here!
less

BREATHING IN FISHES



- Oxygenated
- Deoxygenated

This whole structure is in the Thoracic Cavity **Breathing in Human Beings**

Metabolic Poison Leaves The Body By Airways

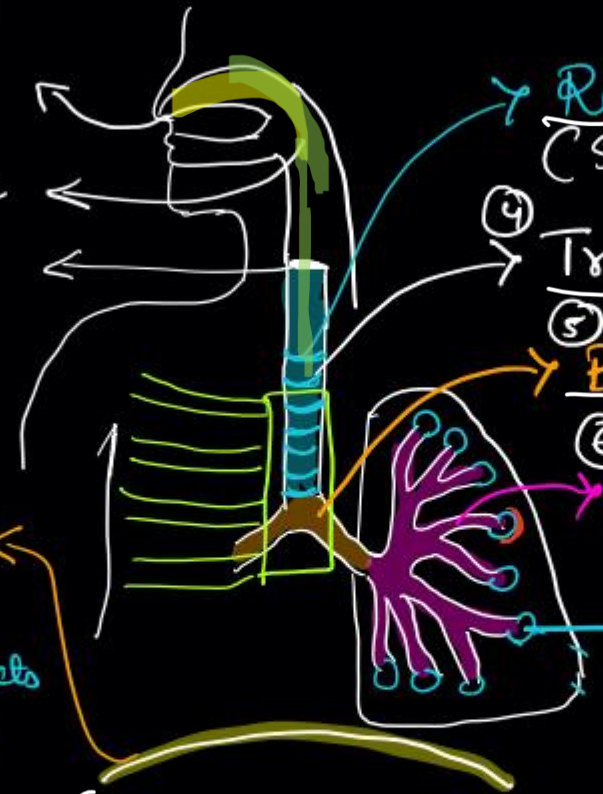
External Nares
CO₂

- ① Nostrils
- ② Pharynx
- ③ Epiglottis

→ Rings of Cartilage
(So that trachea does not collapse when there is no air)

④ Trachea

⑤ Bronchi



⑦ Diaphragm

Breathing in:
Diaphragm contracts & moves down

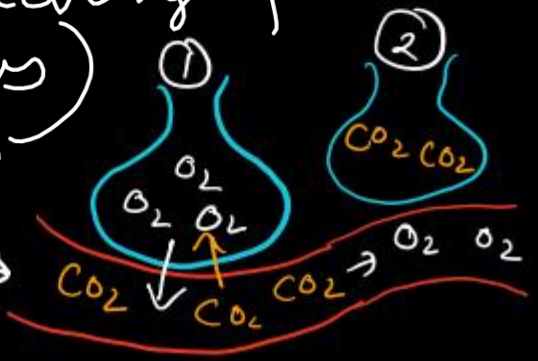
Breathing out:
Diaphragm relaxes & moves up

⑥ Bronchioles

⑦ Alveolus (Air Sac)

(Major Exchange of gases)

Deoxygenated Blood from Body

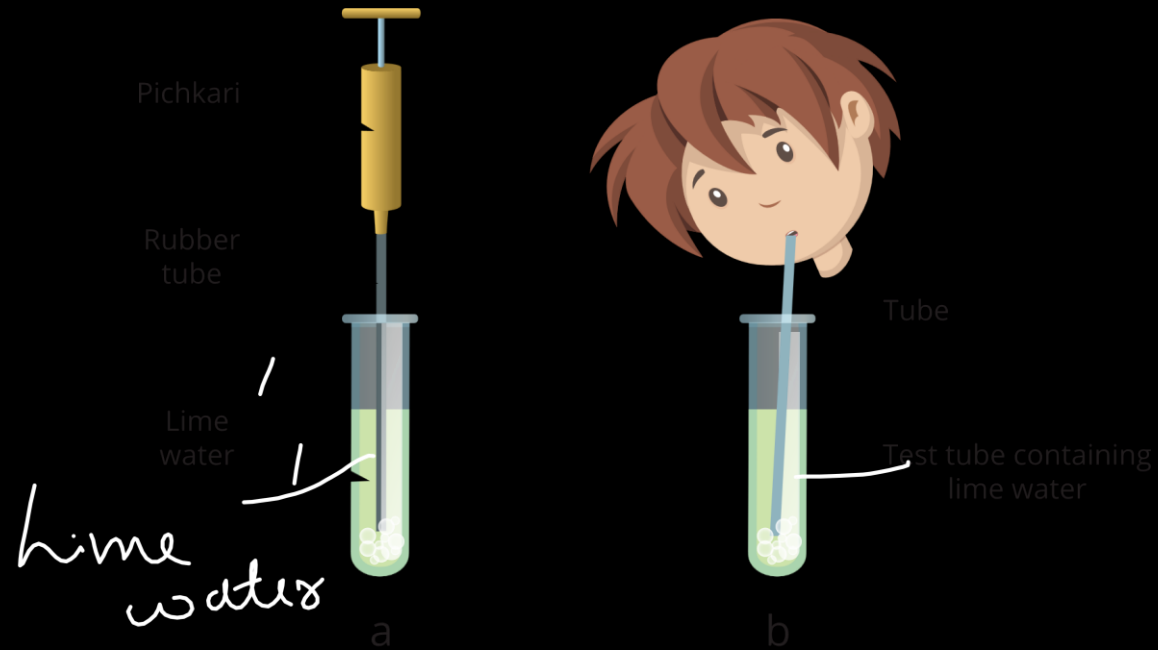


Q Can diffusion pressure alone help with transport of oxygen?

→ No because we are multicellular
Complex organisms
↓
high metabolic rate.

- * Hemoglobin has higher affinity to oxygen than CO_2
- * Carbon dioxide is more soluble in water & hence can be transported in dissolved form

Experiment



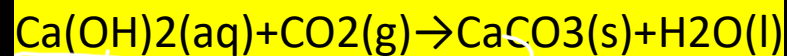
a) Air being passed into lime water with a pichkari/syringe

b) Air being exhaled into lime water

After a few moments of exposure to CO_2 , the lime water will turn milky due to the formation of calcium carbonate (CaCO_3), which is insoluble in water.

Chemical Reaction:

The reaction can be represented as follows:



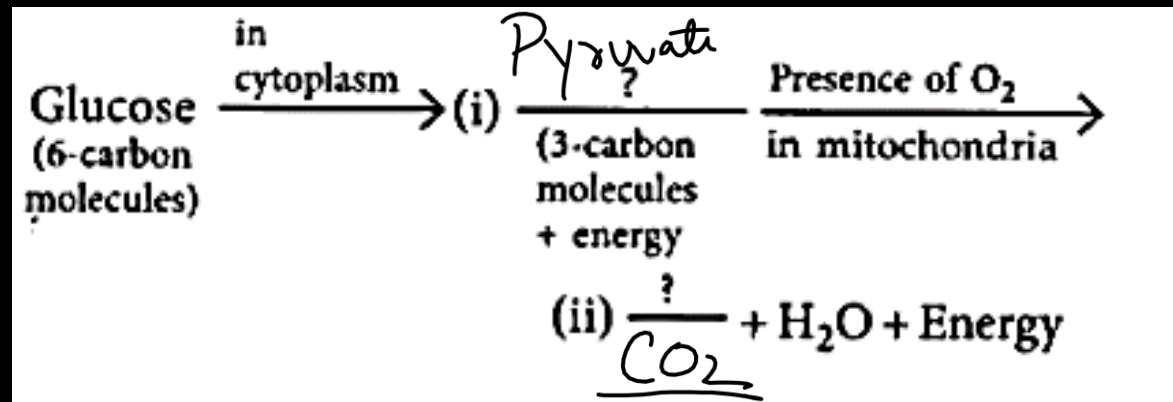
lime water
Calcium hydroxide Calcium Carbonate — Milky white

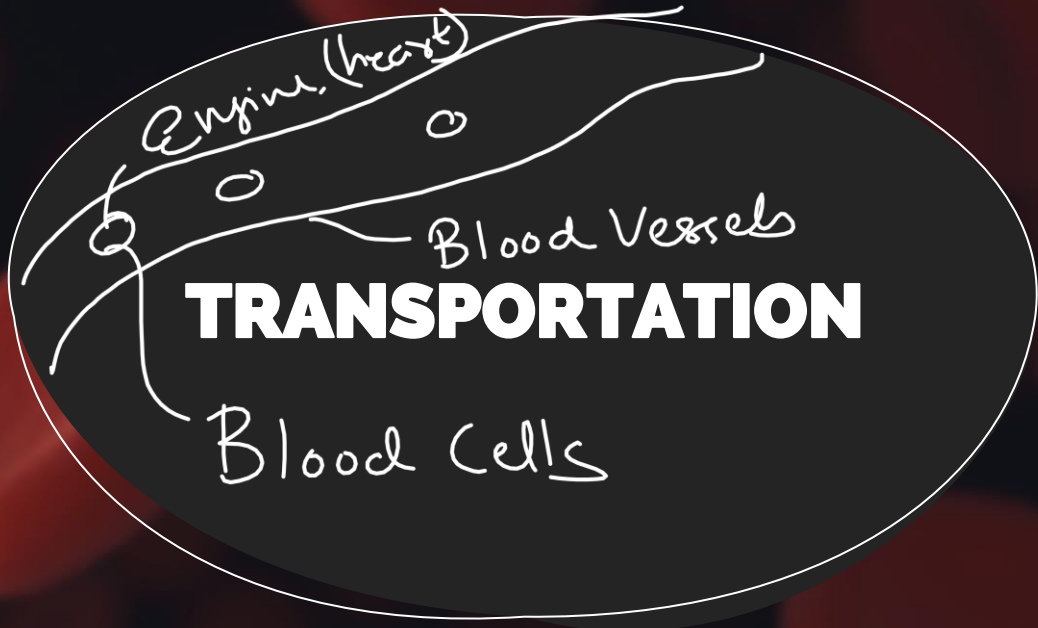
Time for PYQ Practice

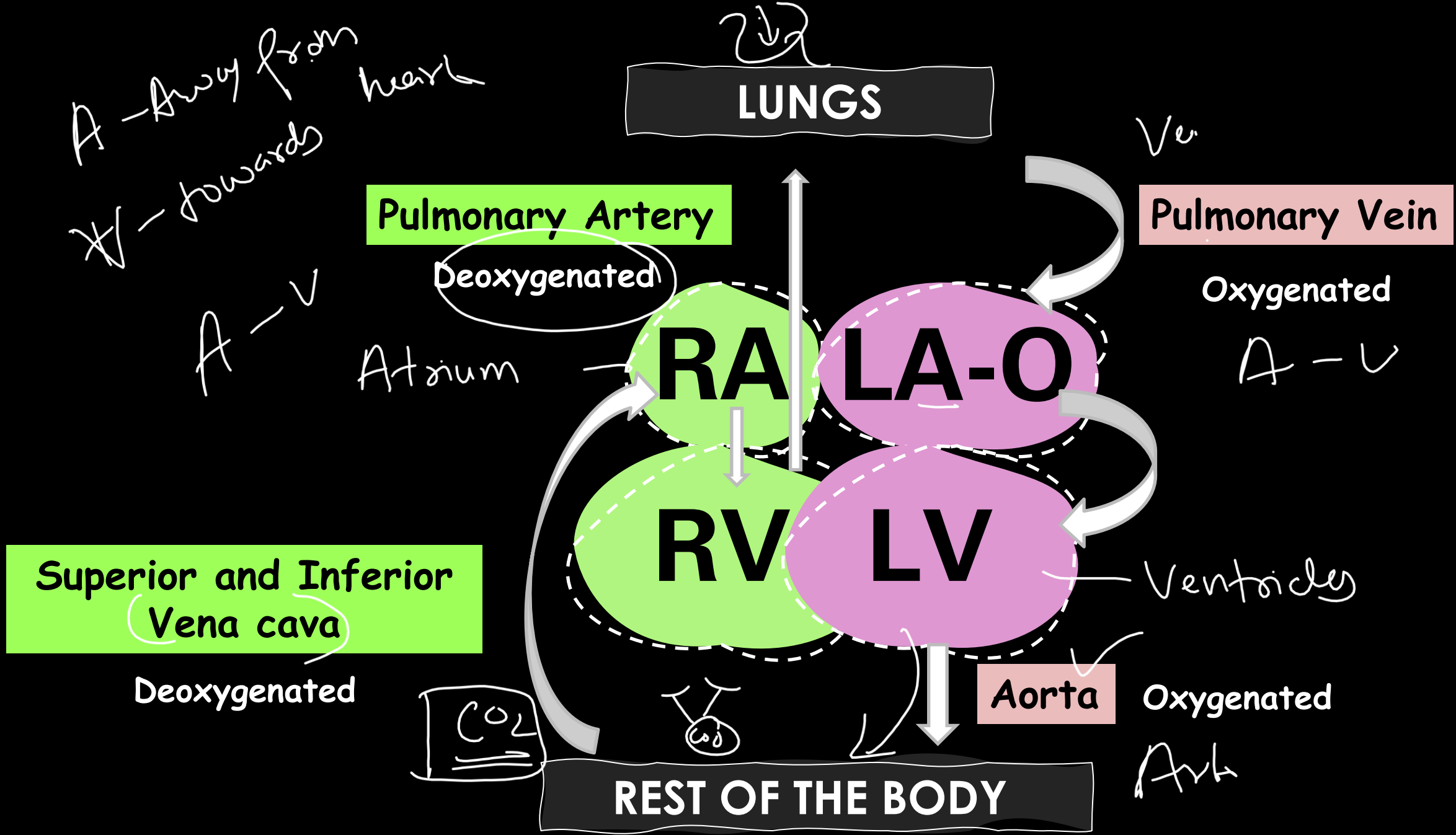
Diffusion is insufficient to meet the oxygen requirement of multicellular organisms like human. State reason. (Board Term 1, 2017)

Time for PYQ Practice

- (a) In the process of respiration, state the function of alveoli.
- (b) Rate of breathing in aquatic organisms is much faster than that in terrestrial organisms. Give reasons.
- (c) Complete the following pathway showing the breakdown of glucose.







LUNGS

Atrioventricular
Valves

Tricuspid Valve

Bicuspid Valve

(Mitral Valve)

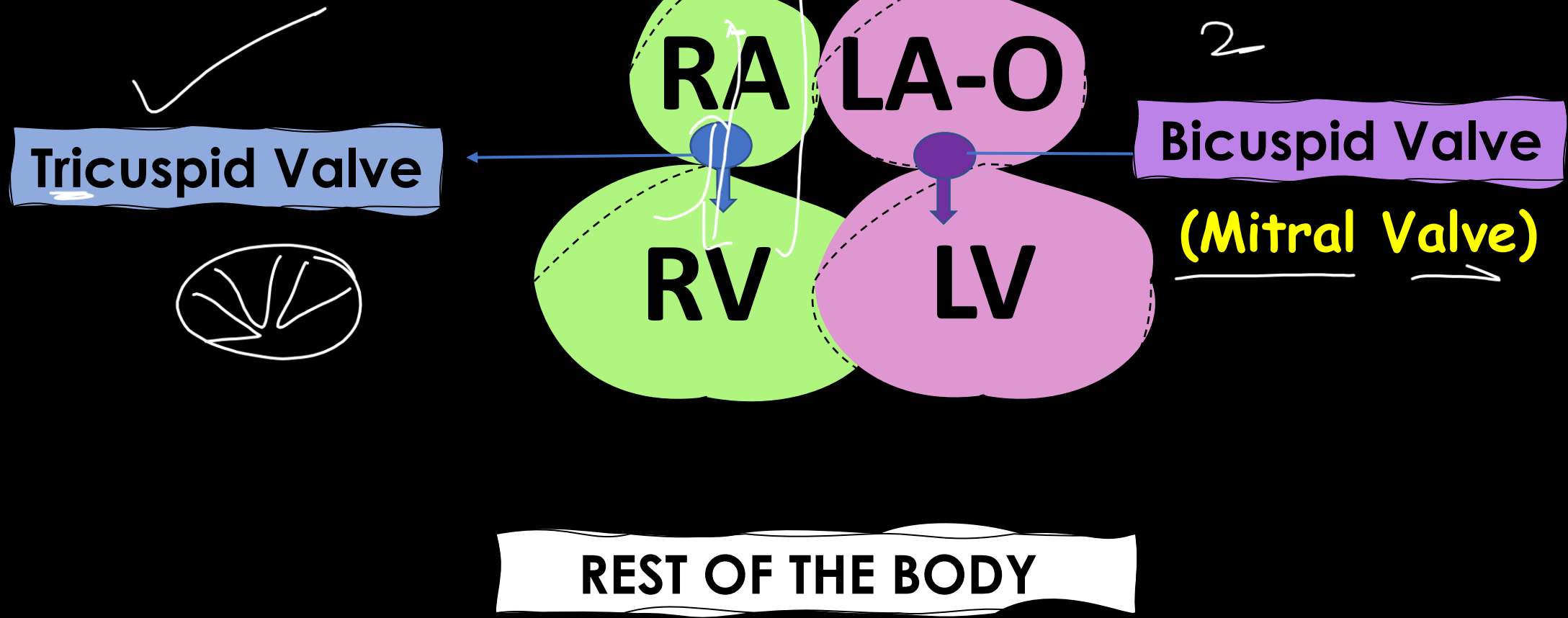
RA

LA-O

RV

LV

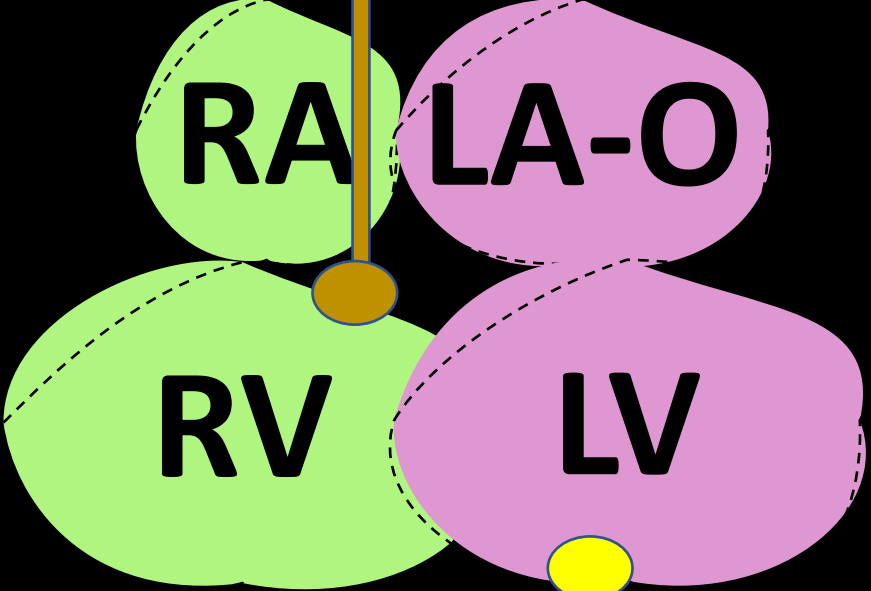
REST OF THE BODY



Semilunar Valves

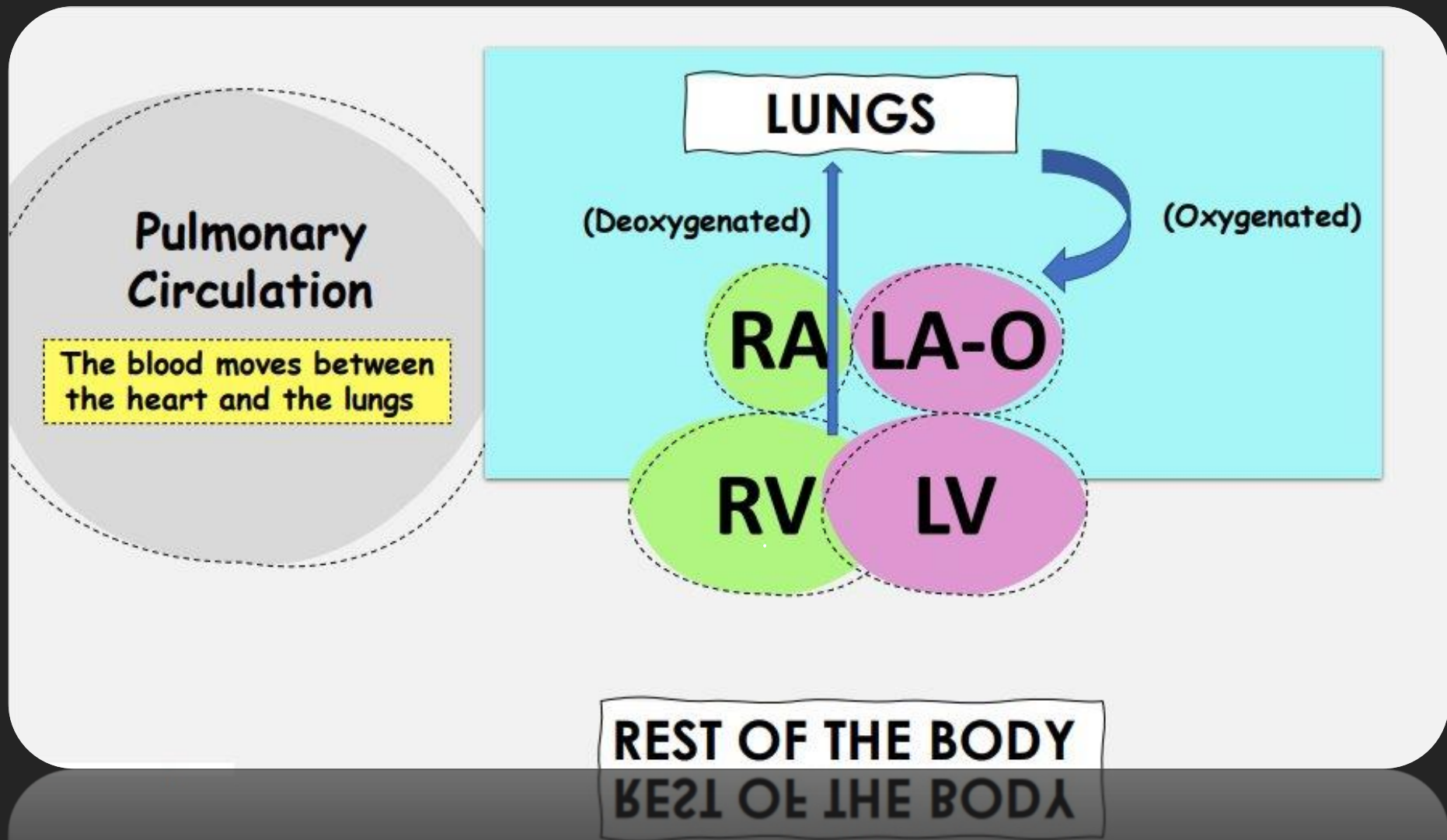
LUNGS

Pulmonary Valve



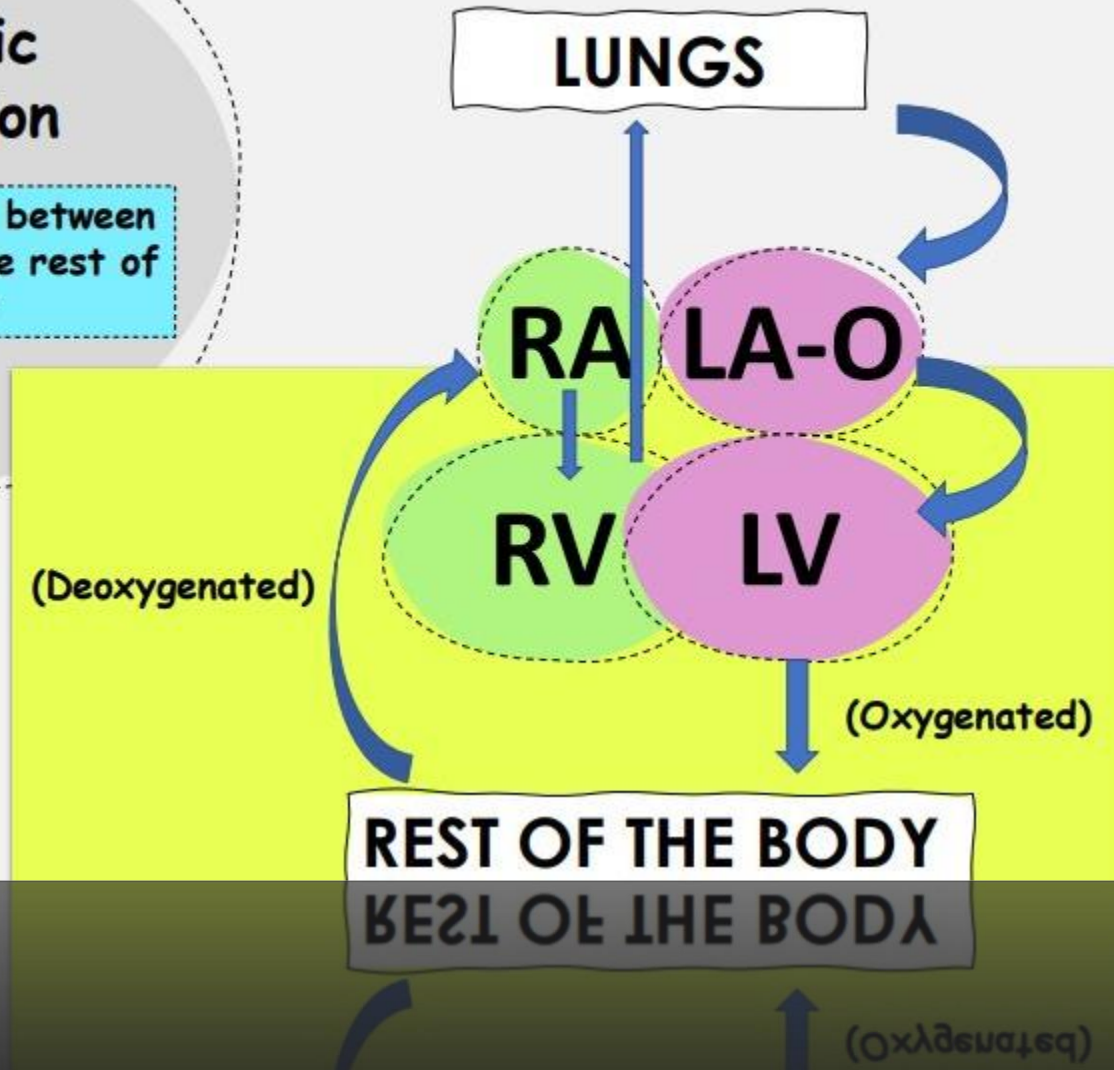
Aortic Valve

REST OF THE BODY

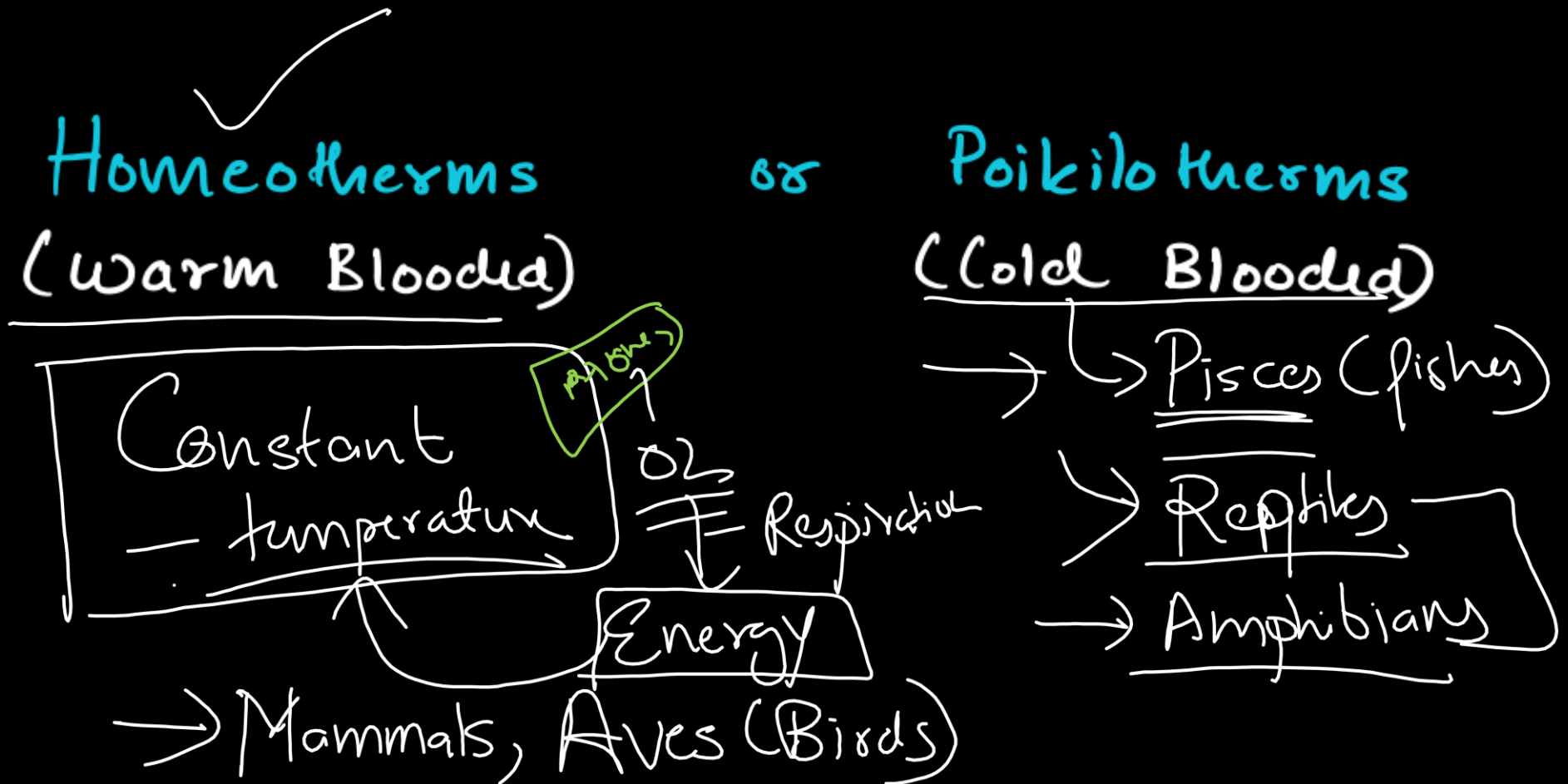


Systemic Circulation

The blood moves between the heart and the rest of the body



Who has the Super-Power of maintaining a constant temperature?



Double circulation

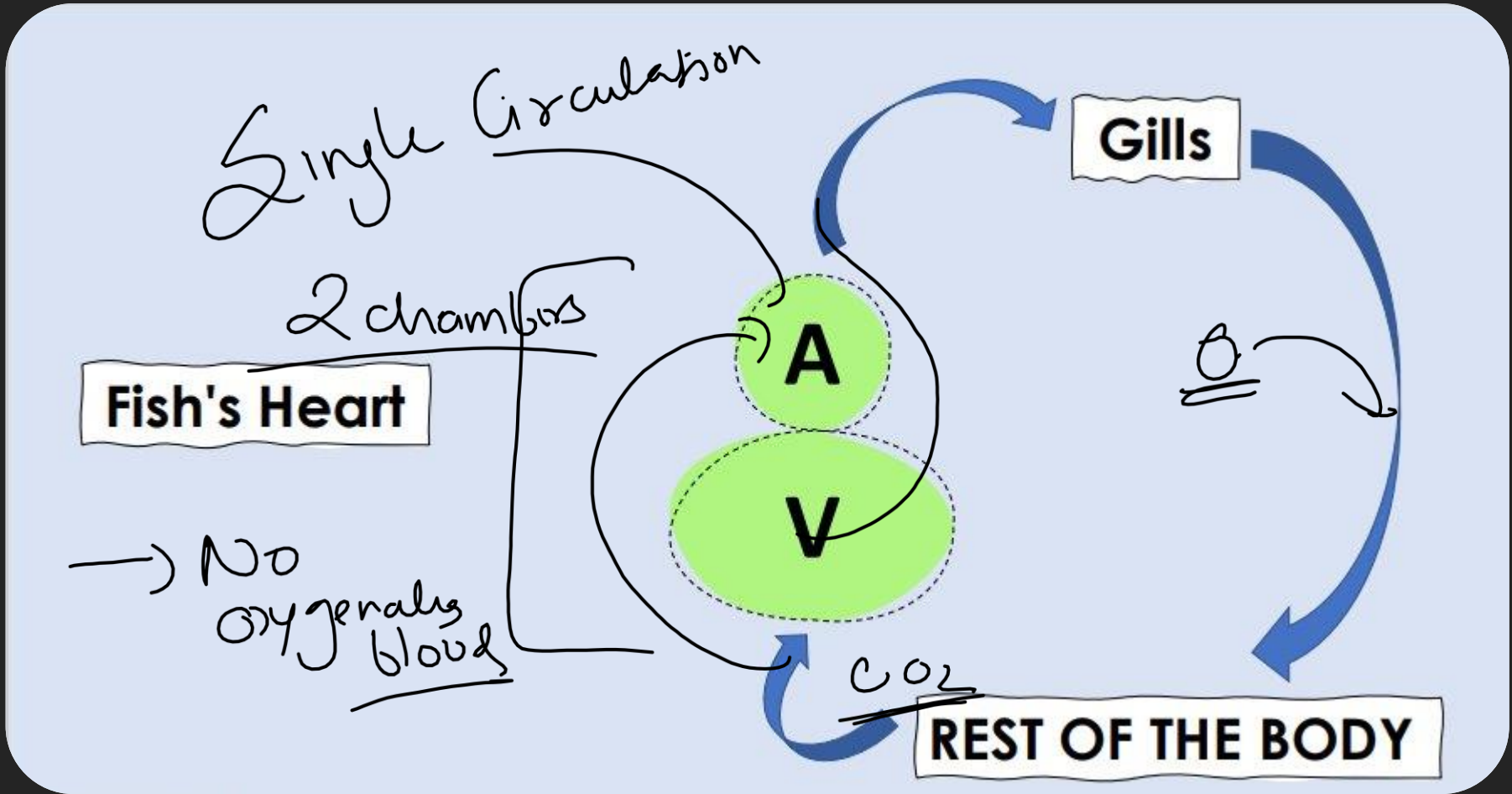
Pulmonary circulation

- This circuit involves the flow of blood between the heart and the lungs.
- Oxygenated blood from the lungs open into left atrium through pulmonary vein.
- Deoxygenated blood from the right ventricle is carried by pulmonary artery to lungs.

Systemic circulation

- This circuit involves the flow of oxygenated blood from the heart to the rest of the body and back.
- Oxygenated blood from the left ventricle goes to the body parts through aorta.
- Deoxygenated blood from the body part is carried by Vena cava (superior and inferior) to the right atrium.

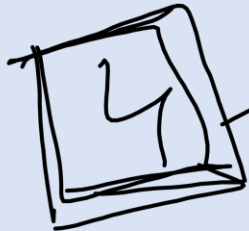
Note : Aves and mammals show complete double circulation, reptiles and amphibians show incomplete double circulation.



Mammals
Aves
Reptiles
Amphibians

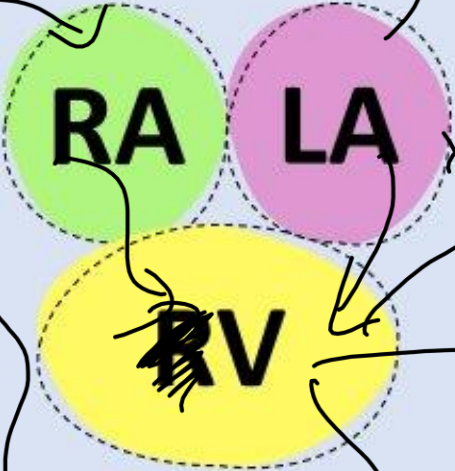
Heart of Reptiles and amphibians

I am a Reptile and I am different!



deoxygenated

Lungs



Oxygenated

Incomplete Double Circulation
Mixed blood

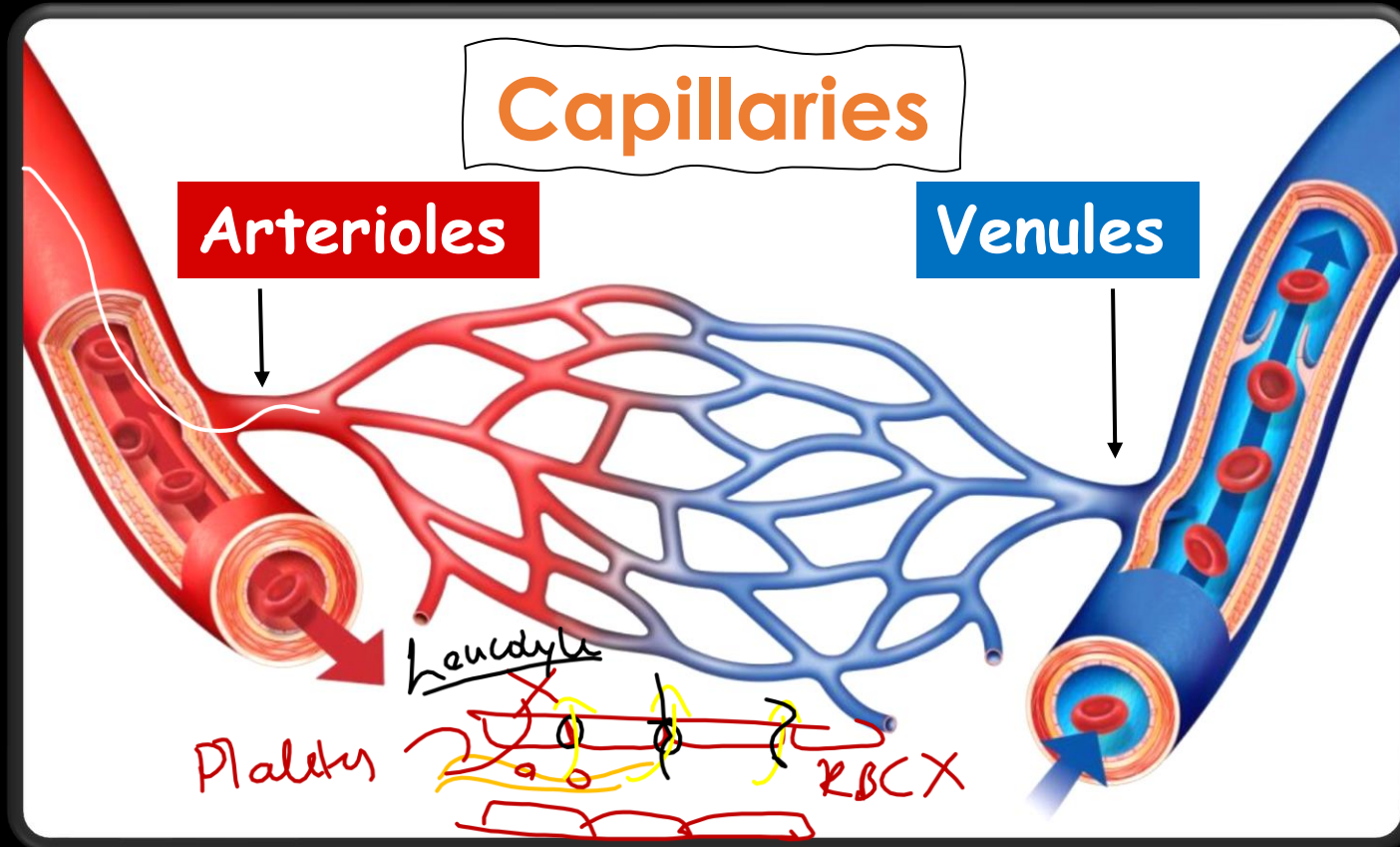
Rest of the body

Rest of the body



Why Mammals and Aves show double circulation ? (Imp for boards)

- Mammals and Aves are warm blooded animals(Homeotherms or endotherms) and thereby need to maintain a constant body temperature.
- Complete double circulation efficiently separates oxygenated and deoxygenated blood thereby avoiding the mixing of blood.
- This efficient separation helps in providing oxygen needed for production of ATP and for maintenance of a constant body temperature.
- Apart from thermoregulation, warm blooded animals also have higher metabolic rate which needs ample amount of energy.

Arteries



Veins

	Arteries	Veins	Capillaries
Function	Send blood from heart <i>Away</i>	Send blood to heart <i>Towards</i>	Material exchange with tissues — <i>Metabs</i>
<u>Pressure</u>	High ✓	Low —	Low —
Lumen Diameter	<u>Narrow</u> 	<u>Wide</u>	Extremely narrow (one cell wide)
Wall Thickness	Thick ✓	<u>Thin</u>	Extremely thin (single cell thick)
Wall Layers	Three • Tunica adventitia • Tunica media • Tunica intima]	Three • Tunica adventitia • Tunica media • Tunica intima	One • Tunica intima 
Muscle & Elastic Fibres	Large amounts	Small amounts	None
Valves	No	Yes	No



Blood Pressure (BP)

The force that blood exerts against the wall of a vessel is called blood pressure.

Systolic Pressure

The pressure of blood inside the artery during ventricular systole or during the contraction of ventricle is called systolic pressure

Diastolic Pressure

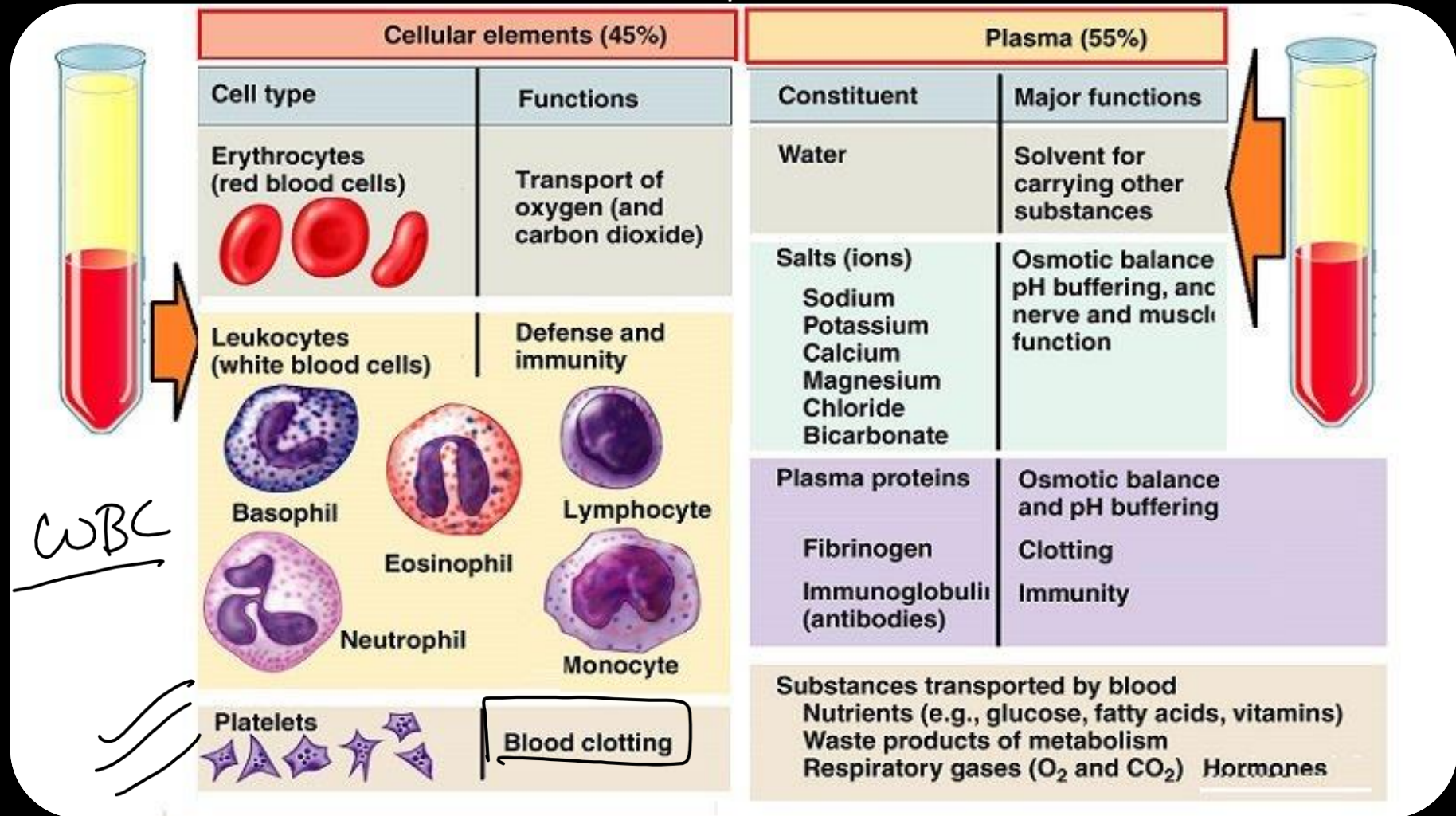
The pressure in the artery during ventricular diastole or during relaxation of ventricle is called diastolic pressure.

- The normal systolic pressure is about 120 mm of Hg and diastolic pressure is 80 mm of Hg.
- Blood pressure is measured with an instrument called Sphygmomanometer

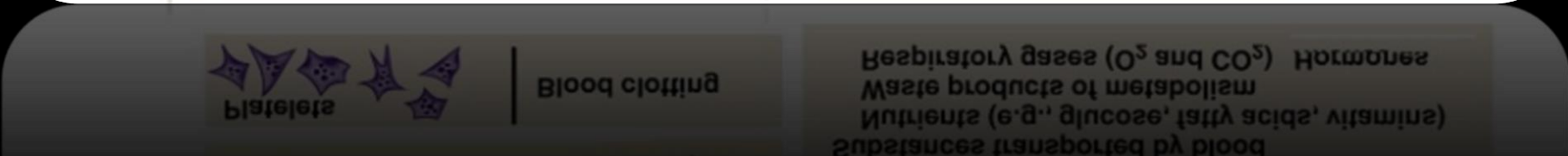


Erythrocyte: RBC Leukocyte: WBC
 Thrombocyte: Platelets

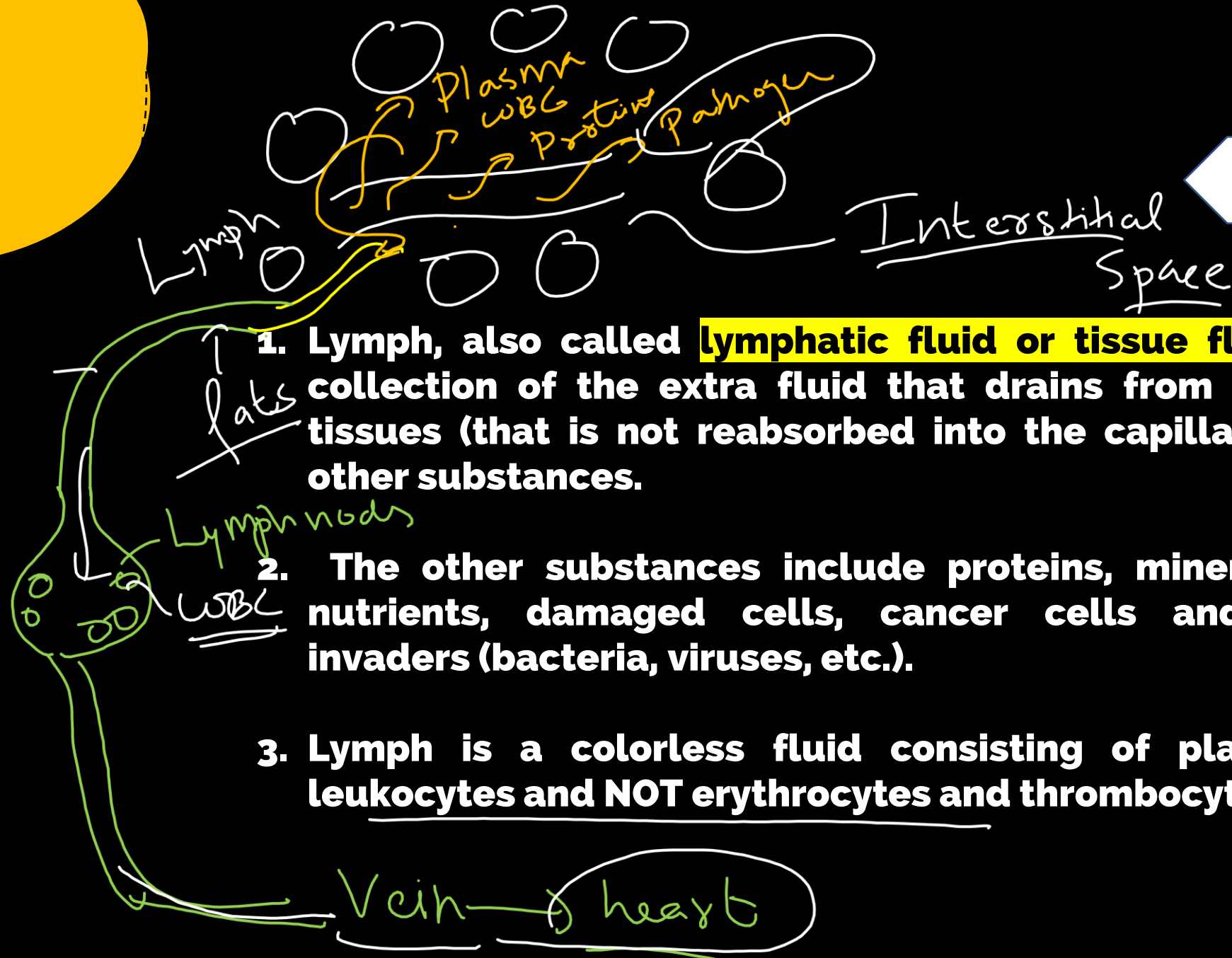
Types of Blood Cells



WBC



Lymph



1. Lymph, also called **lymphatic fluid or tissue fluid**, is a collection of the extra fluid that drains from cells and tissues (that is not reabsorbed into the capillaries) plus other substances.

2. The other substances include proteins, minerals, fats, nutrients, damaged cells, cancer cells and foreign invaders (bacteria, viruses, etc.).

3. Lymph is a colorless fluid consisting of plasma and leukocytes and NOT erythrocytes and thrombocytes.



Functions of Lymph

- **Maintains fluid levels** in the body.
- **Absorbs fats** from the digestive tract(INTESTINE)
- **Protects the body** against foreign invaders.
- **Transports and removes waste products** and abnormal cells from the lymph.

Difference Between Lymph & Blood

BLOOD	LYMPH
Its plasma has more proteins, calcium and phosphorus.	Its plasma has less proteins, calcium and phosphorus.
It consists of plasma, erythrocytes, thrombocytes and leucocytes.	It consists of plasma and leucocytes.
It is red in color due to the presence of hemoglobin in RBCs.	It is colorless as hemoglobin is absent.

The background of the image is a dense, repeating pattern of green fern fronds. The leaves are elongated and pointed, with a central vein and smaller leaflets branching off. The color is a deep, vibrant green, and the lighting creates subtle gradients and shadows across the foliage, giving it a textured, natural appearance.

Transportation in Plants

Root Pressure Theory

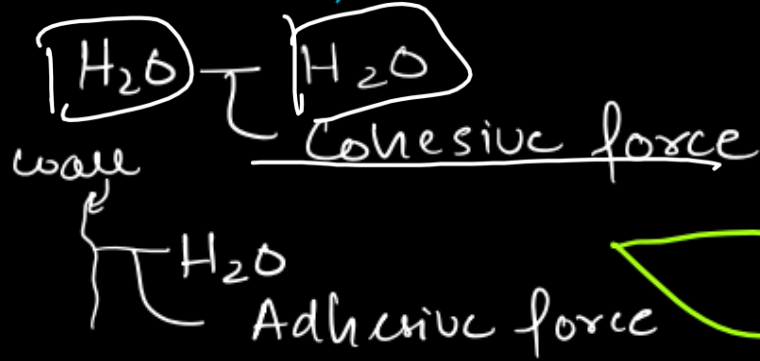
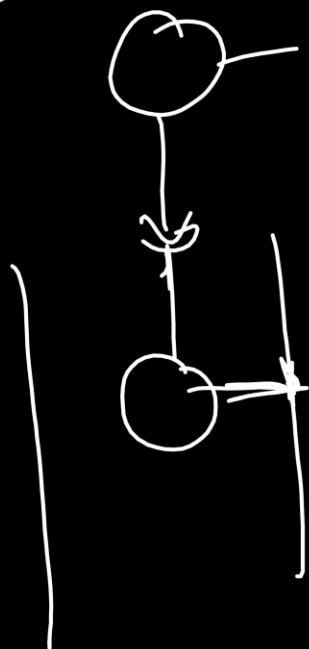



Transpiration Pull Theory

Water

Xylem

Unidirectional Transpirational Pull Theory (PULL)



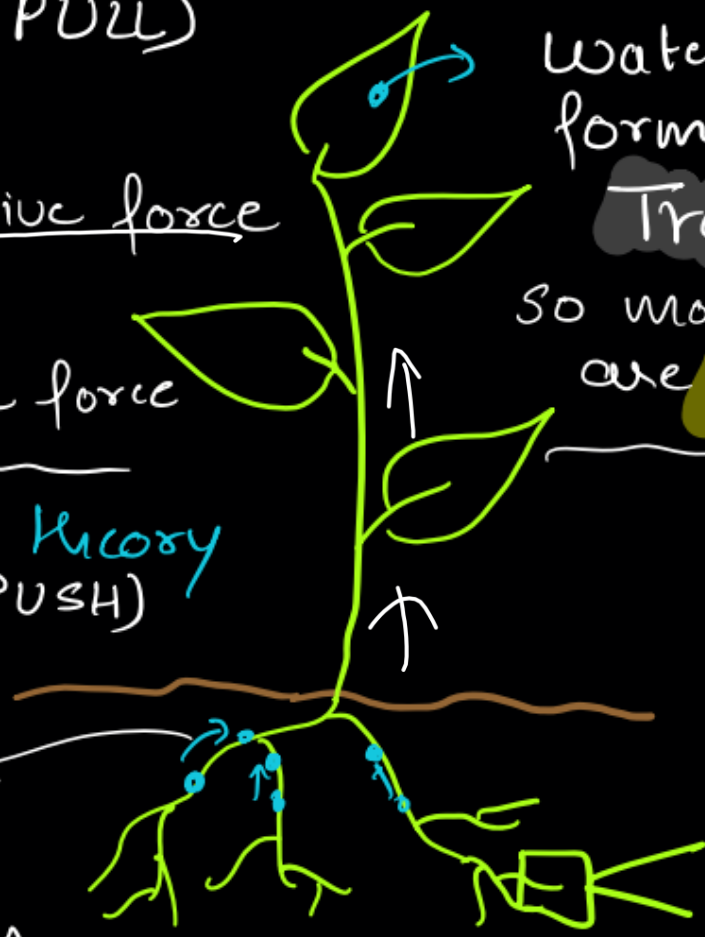
 Water is lost in the form of vapor through **Transpiration** so more water molecules are **pulled up**

Root Pressure Theory (PUSH)

③ Now water molecules **push** each other up as pressure increases

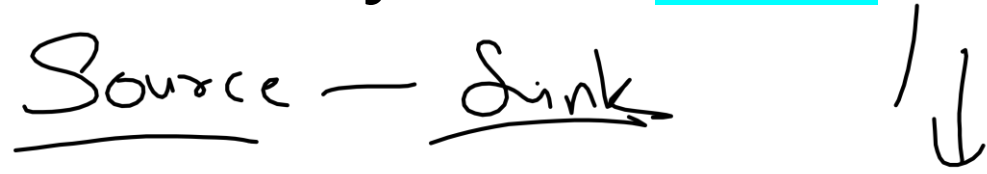
② Now move inside the roots as ions cause a conc. gradient

① Ions move from the soil into the roots via **Active transport**



Translocation in Plants - Phloem

- **Translocation** is the process by which assimilates from photosynthesis are moved around the plant, from where they are made (**Source**) to where they are needed (**Sink**).

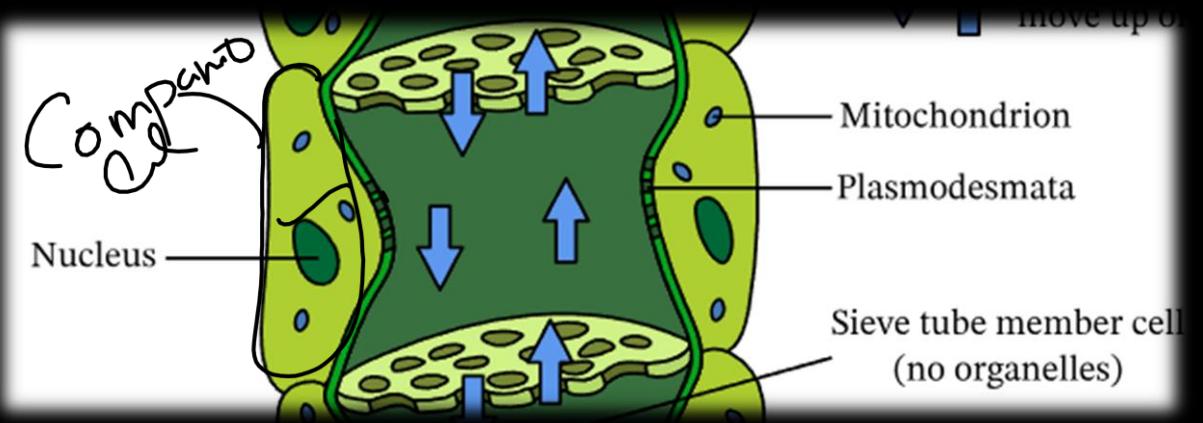


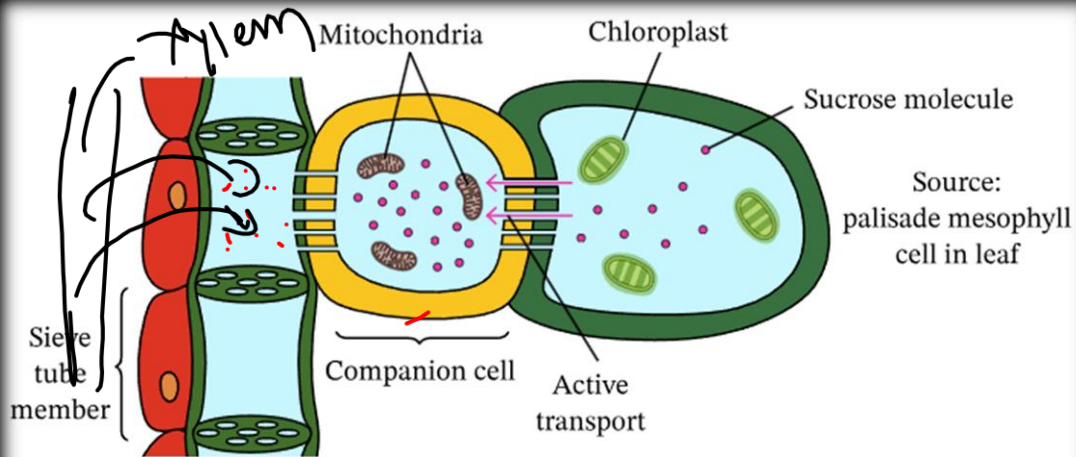
- This is **Bi-directional**

- Plants convert the sugars made during photosynthesis into **sucrose** by combining glucose with another sugar called fructose. Sucrose is translocated rather than glucose because sucrose is a **non-reducing sugar**.



- Phloem tissues consist of two main types of living cells : **sieve tube and companion cells.**
- Companion cells are linked to the sieve tube members by pores in their cell walls called the **plasmodesmata**, and companion cells has so many mitochondria which could later help in active transport by contributing ATP.



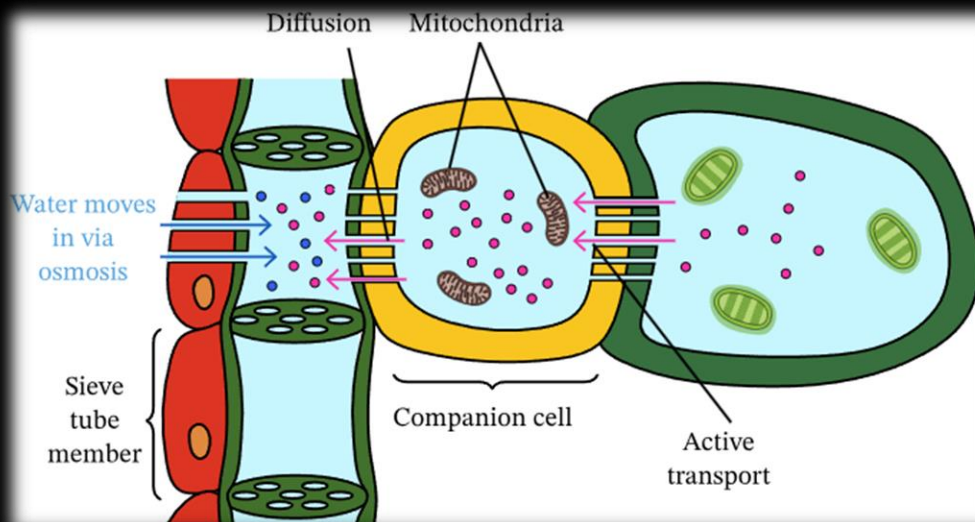


Steps involved :

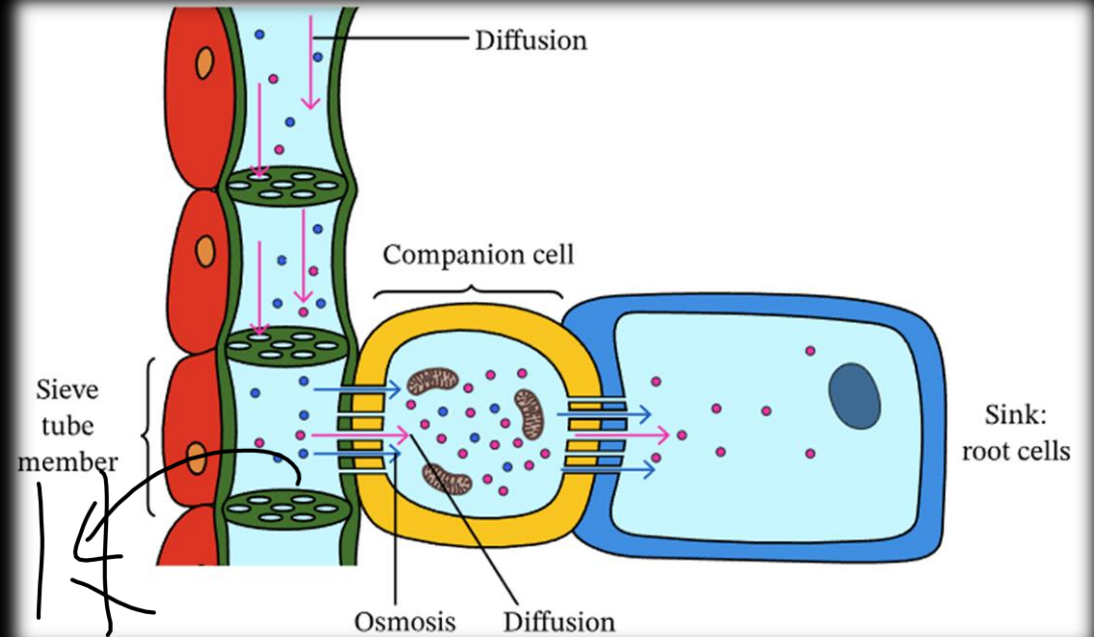
- In the source : Sucrose made in the source is **actively transported** into the companion cell. From the companion cells sucrose moves into the sieve tube cell through **diffusion**

- Water from the xylem tissue (High conc. of solvent) moves into the sieve tube element (Low conc. of solvent, High conc. of solute) through **osmosis**.

- This movement of water would lead to increase in pressure in the sieve tube cell and further would lead to the mass movement of the phloem sap to the area where the pressure is low (**Mass Flow**).



- **In the sink** : The sucrose then moves from the sieve tube element to the companion cells and the storage cell.
- Also the water moves back from the sieve tube cell (High conc. of solvent, low conc. of solute) to xylem tissue (Low conc. of solvent)



Time for PYQ Practice

What do the following transport?

(i) Xylem

(ii) Phloem

(iii) Pulmonary vein

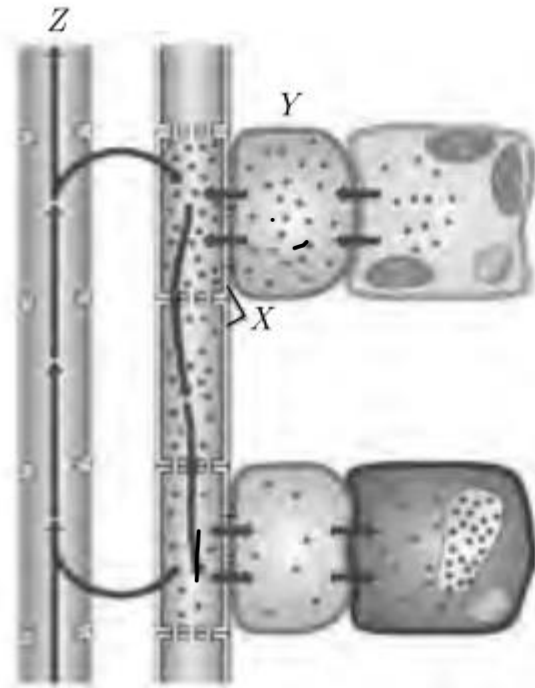
(iv) Vena cava

(v) Pulmonary artery

(vi) Aorta (Board Term I, 2014)

Time for PYQ Practice

The given figure represents the movement of water and minerals in xylem and movement of food in phloem.



Choose the correct combination of plots provided in the following table:

	X	Y	Z
<input checked="" type="checkbox"/> (a)	Major conducting cells in xylem	Denucleated	Flow is bidirectional
<input checked="" type="checkbox"/> (b)	Major conducting cells in phloem	Nucleated	Flow is unidirectional
<input checked="" type="checkbox"/> (c)	Major conducting cells in xylem and phloem	Denucleated	Flow is unidirectional
<input checked="" type="checkbox"/> (d)	Cells of xylem but function is not defined	Nucleated	Flow is bidirectional

Time for PYQ Practice

Explain the process of transport of oxygenated and deoxygenated blood in a human body. (5 Marks)

- flowchart
- Systemic & Pulmonary
- Importance

Time for PYQ Practice

Give reasons:

(a) Ventricles have thicker muscular walls than atria.

(b) Transport system in plants is slow.

(c) Circulation of blood in aquatic vertebrates differs from that in terrestrial vertebrates.

(d) During the daytime, water and minerals travel faster through xylem as compared to the night.

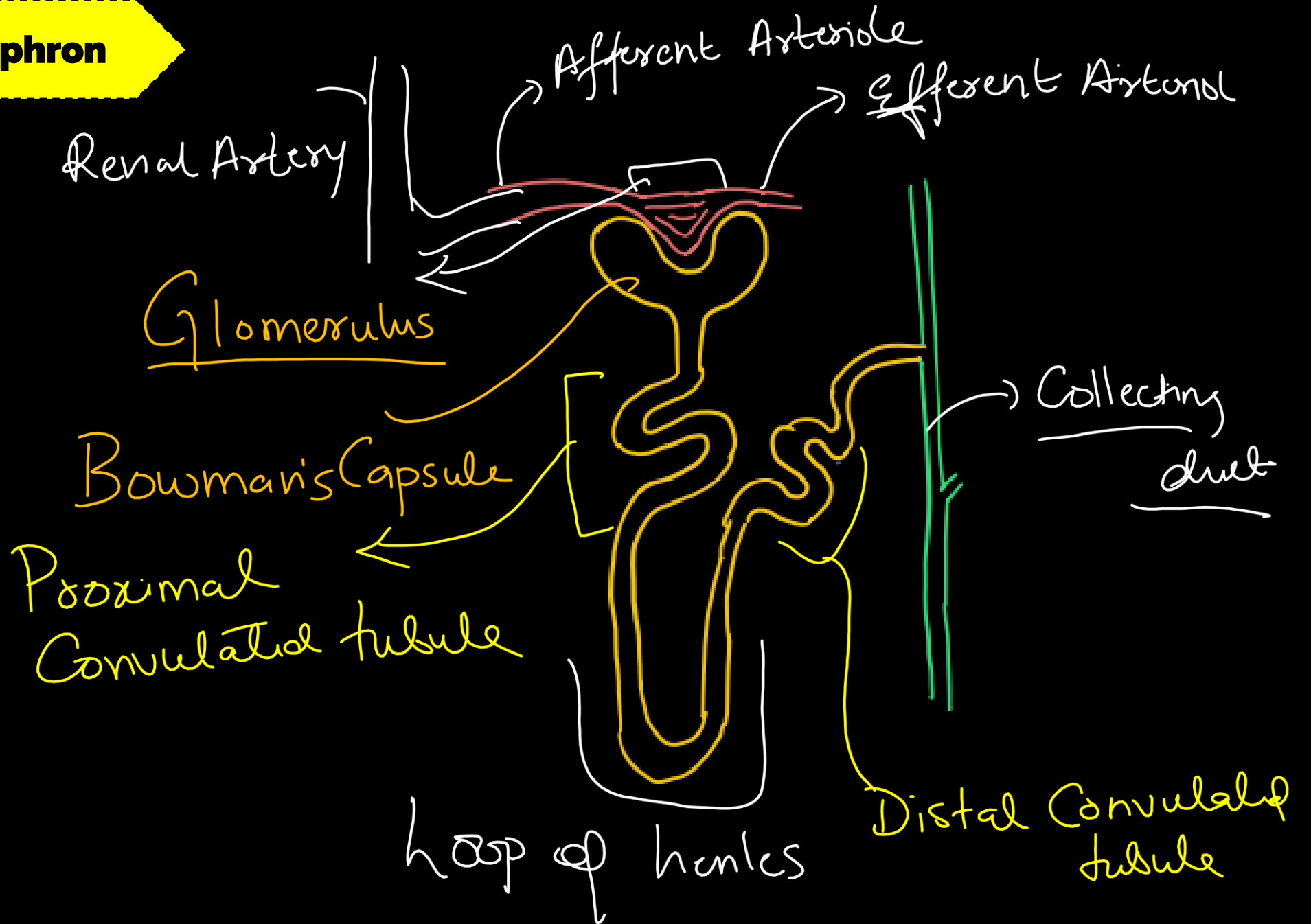
(e) Veins have valves whereas arteries do not. (2020)

backflow of blood
Transpiration - Day
Root Pressure - Night

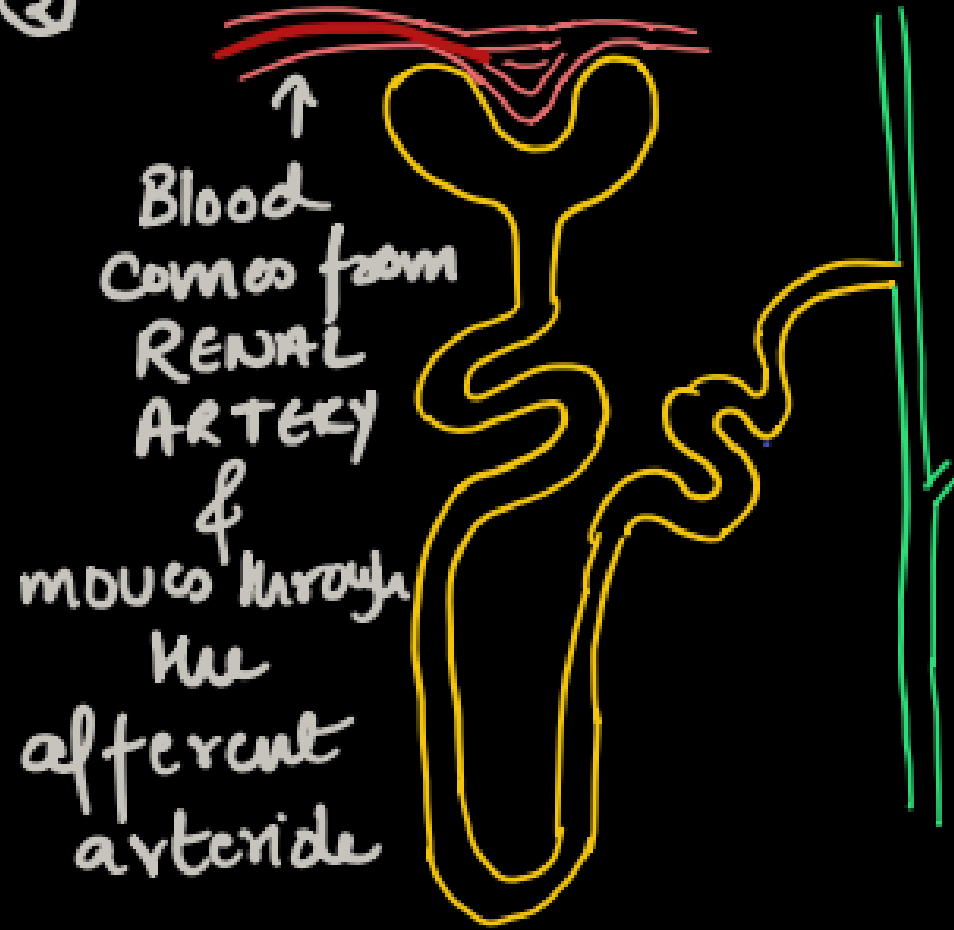


EXCRETION

Structure of a Nephron



②



③

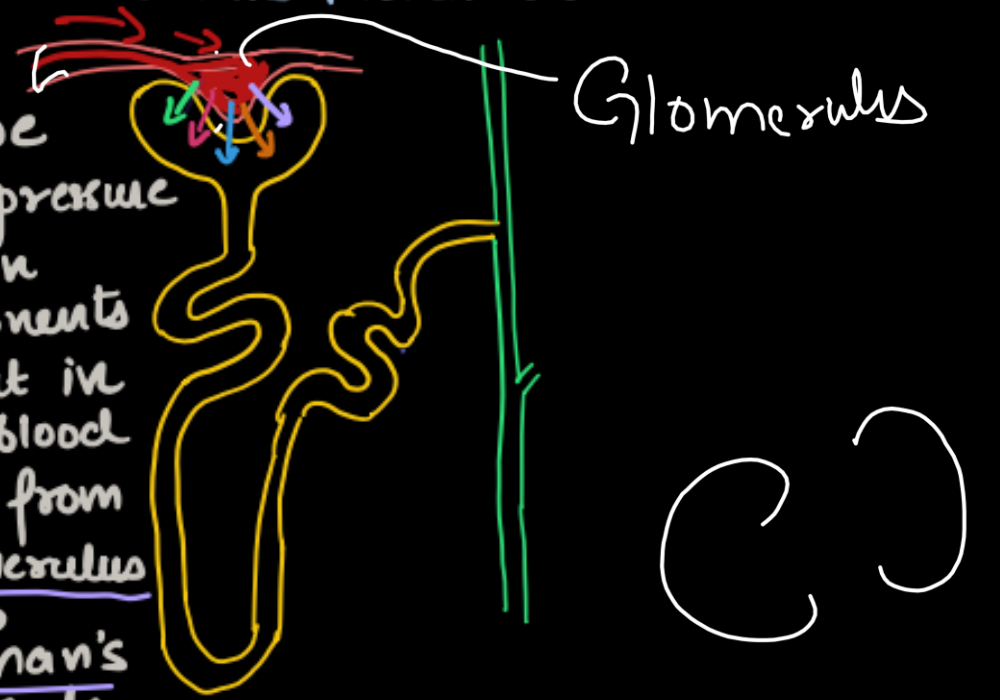
GLOMERULAR FILTRATION

Because of the pressure certain components present in the blood moves from glomerulus to Bowman's capsule

- Ions
- Urea
- Water
- Glucose
- Amino Acids

Altogether they are known as **FILTRATE**

[NOTE: Only small components could pass through]



4



Blood continues to flow from
Afferent Arteriole
↓
Glomerulus
↓
Efferent Arteriole
↓
CAPILLARIES

⑤ SELECTIVE REABSORPTION

Most of the components in the filtrate are selectively reabsorbed by the capillaries according to the need of the body

- Ions ✓
- Water ✓
- Glucose ✓
- Amino Acids ✓
- Urea ✗

PCT



[Note: Some amount of urea is also reabsorbed]



Blood flows through the capillaries that wraps around the nephron.

(And while all of this happens, there are so many other things happening in the background!)

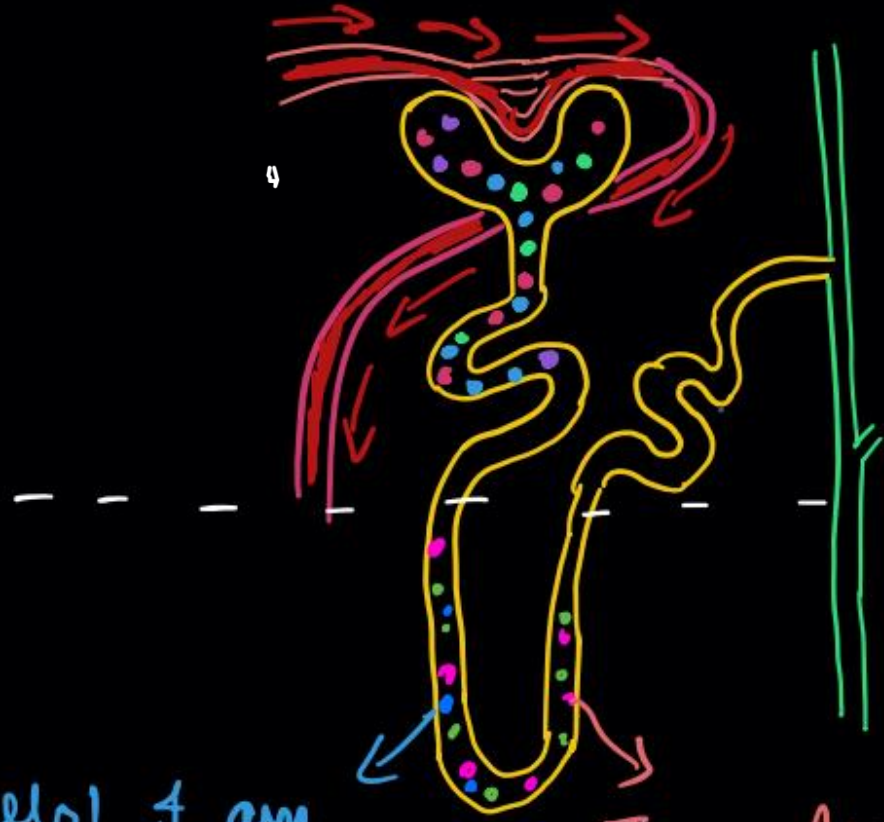
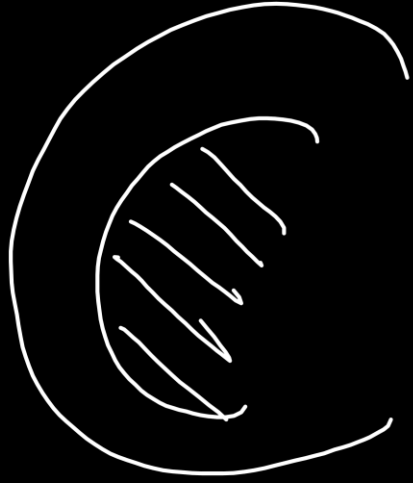


⑦ Tubular Secretion



→ From the Blood certain components which are in high amount in the body or is of no use moves back to the Nephron (DCT mainly)

- What and all moves back from from the blood to the nephron?
- Certain ions which could be increasing the pH of the blood.
 - Certain drugs (medicinal compounds)



Hello! I am
descending loop of
Henle! I am
permeable to
water but
not permeable
to solutes.

I am Ascending
loop of Henle,
I am not permeable
to water but
I am permeable to
solute! :-)



ions move out by Active transport.

hence in the medulla the solute conc is more now

180L

As solute concentration is more, hence water from the descending loop of henle will move outside the nephron.

what is the use?

To concentrate the urine & save from excess loss of water 😊



GFR - Glomerular filtration rate

All nephrons together: 180L of filtrate!

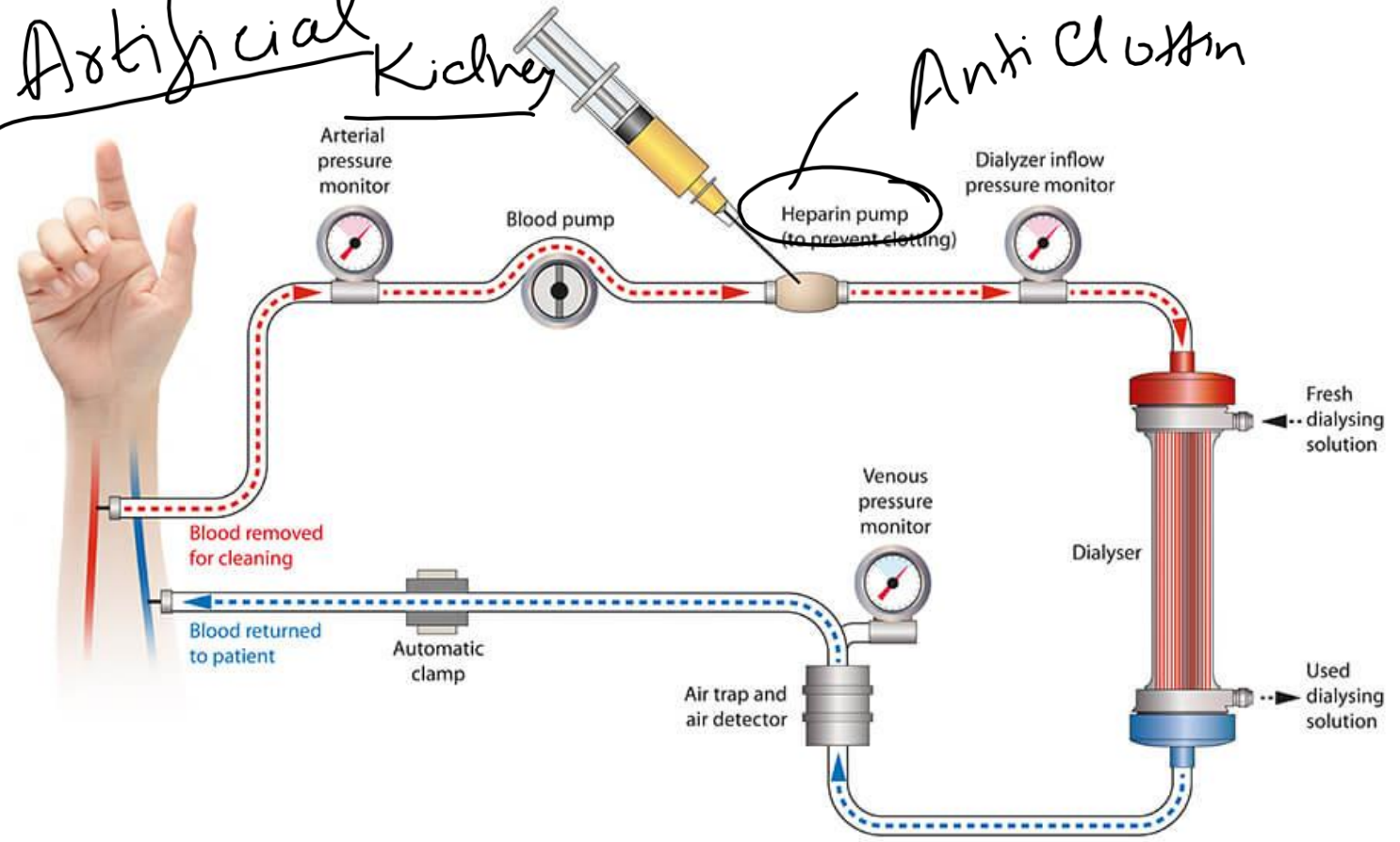
Out of this we urinate
just 1-2L daily!

↓
which means 98-99% of
water is reabsorbed by the
Kidney!

Hemodialysis

Artificial Kidney

Anti Clotting



Time for PYQ Practice

In our body which organ is responsible for conversion of ammonia into urea?

(a) Kidney

(b) (b) Lungs

(c) (c) Heart

(d) (d) Liver

Time for PYQ Practice

(a) Name four types of metabolic wastes produced by humans. *Urea, CO₂, Sweat, Salts*

(b) Name any two human excretory organs other than kidney. (Board Term I, 2013)

Nitrogenous

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 13th Sept 2024

Topic	PDF	Link
Real Numbers		
Life processes		

Download the class PDF now ! link in the description.

Homework For You

Q1. Which blood vessel contains blood with these characteristics

(a) Vena cava

(b) Pulmonary vein

(c) Aorta

(d) Pulmonary artery

Oxygen concentration	Carbon dioxide concentration	Pressure
High	Low	High

Homework For You

Q2

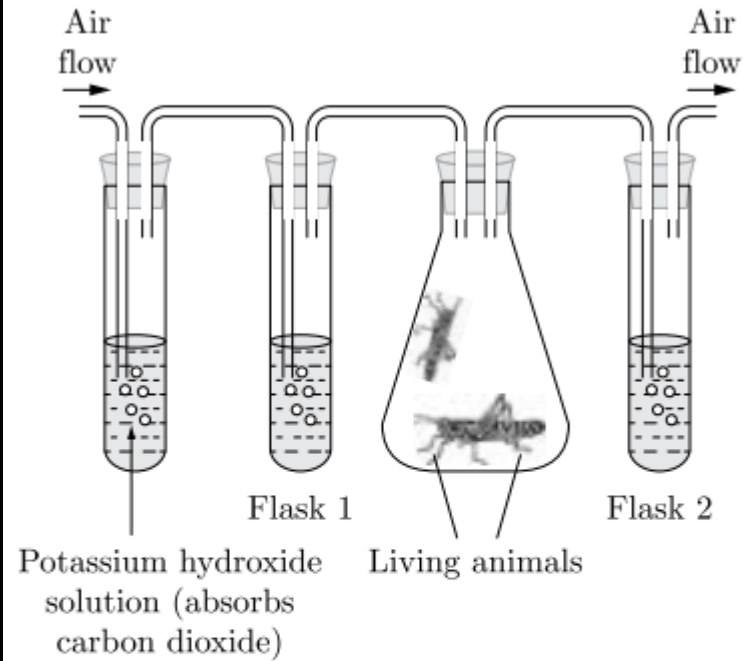
In photosynthesis, which substances are used up, which are produced and which are necessary, but remain unchanged after the reaction?

	Used up	Produced	Remain Unchanged
(a)	Water	Oxygen	Chlorophyll
(b)	Oxygen	Starch	Cellulose
(c)	Carbon dioxide	Water	Oxygen
(d)	Chlorophyll	Carbon dioxide	Water

Homework For You

Q3

An experiment is set up as shown. Flasks 1 and 2 contain lime water. Air is pumped through the flasks.



What is the appearance of lime water in flasks 1 and 2 after a period of ten minutes?

	Flask 1	Flask 2
(a)	Clear	Clear
(b)	Clear	White/Cloudy
(c)	White/Cloudy	Clear
(d)	White/Cloudy	White/Cloudy

Homework For You

Q4.(a) Write two water conducting tissues present in plants. How does water enter continuously into the root xylem?

(b) Explain why plants have low energy needs as compared to animals (2 marks)

Q5. Write three points of difference between respiration in plants and respiration in animals (3 marks)

Q6. Explain the functions of kidney and the formation of Urine. (5 marks)

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