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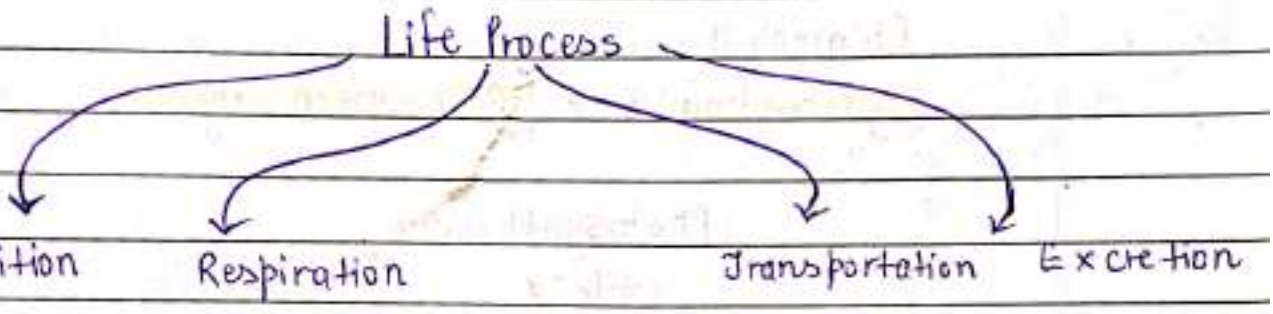
Biology * Life Process *

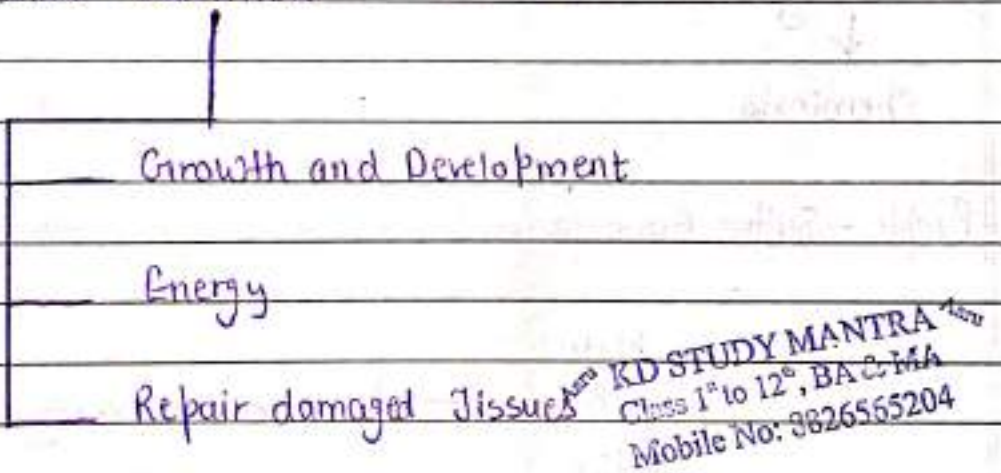
→ What are Life Process?

The various basic functions performed by living organisms to maintain their life on this earth are called ~~life~~ life process.

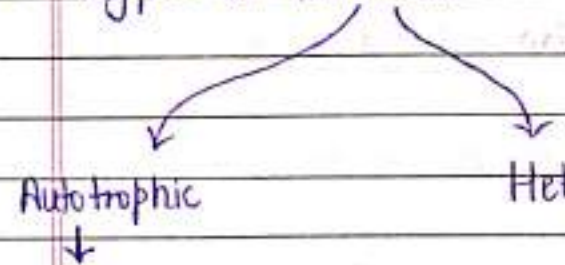


→ Nutrition:-

The process by which a living organism obtain and utilise food is called Nutrition.



→ Types of Nutrition



Organisms prepare their own food.

Organisms are dependent on other organisms for their food.

→ Autotrophic Nutrition

i) Photosynthetic Autotrophic Nutrition :-

Ex - Green Plants

↓

Chlorophyll

Cynobacteria → Blue-green algae

Photosynthesis

↓

Food

↓

Glucose

ii) Chemosynthetic Autotrophic Nutrition :-

↓

Chemicals

Purple - Sulfur Bacteria

NH_4
NO_2 → Chemical energy → Food
NO_3

- Basic Needs for Autotrophic Nutrition :-

i) Carbon dioxide (Air)
ii) Water (Soil)
iii) Light (Sunlight)
iv) Chlorophyll (Chloroplast)

- **Photosynthesis reaction :-**

$$6CO_2 + 12H_2O \xrightarrow{\text{Sunlight}} C_6H_{12}O_6 + 6H_2O + 6O_2$$

{Carbon dioxide} {water} (Glucose) (water) (oxygen)

* Plants store glucose in form of starch.
* Human store glucose in form of glycogen.

Photosynthesis Reaction

i) Absorption of light energy by chlorophyll.

ii) Conversion of light energy to chemical energy and splitting of water molecule into hydrogen and oxygen.

iii) Reduction of Carbon dioxide to Carbohydrates.

- **Stomatal Pore :-**

Stomata are tiny pore like structures present on surface of leaves

* **Functions :-**

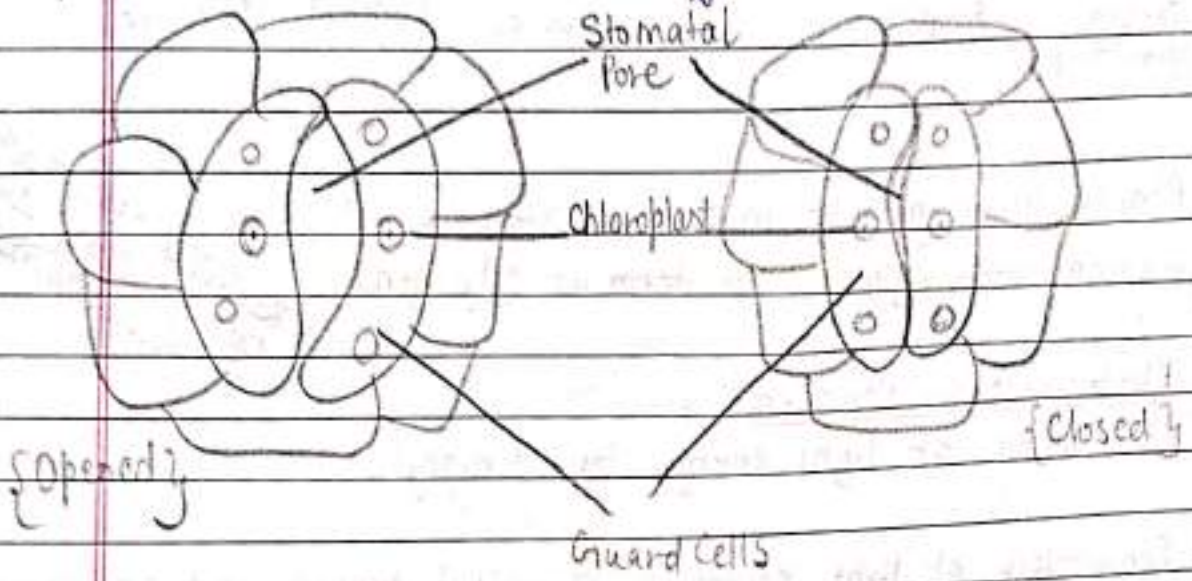
i) Transpiration :- Removal of excessive water in the form of water vapour.

ii) Exchange of gases during photosynthesis and respiration.

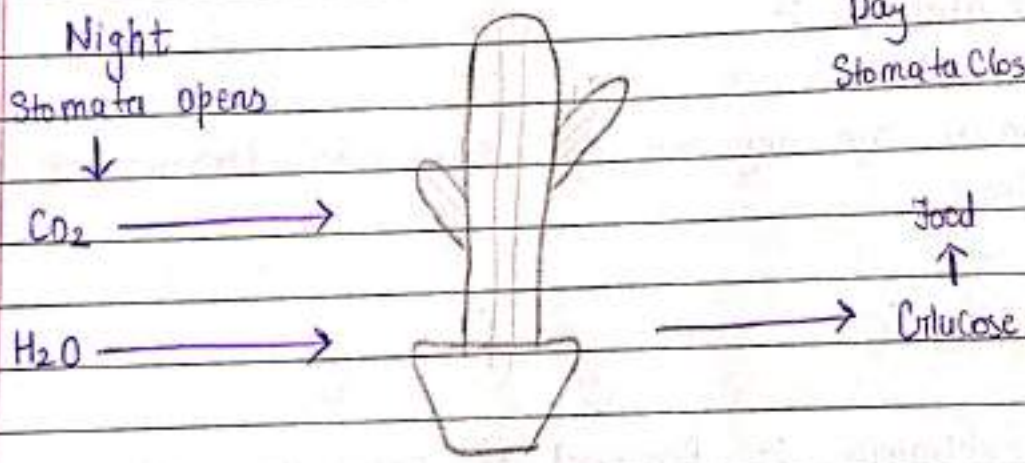
- **Opening and Closing of Stomata :-**

i) Stomata opens on swelling (H_2O enters) of guard cells.

ii) Stomata closes on shrinking (H_2O moves out) of guard cells



- Photosynthesis in Desert Plants :-



→ Heterotrophic Nutrition :-

i) Holozoic :
ii) Saprophytic :
iii) Parasitic :

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i.) Holozoic Nutrition:-

The organism feed by ingesting solid organic matter which is then digested and then absorebed into the body.

Classification:-

* Herbivores
* Carnivores
* Omnivores

ii.) Saprophytic Nutrition:-

Feed on dead and decaying matter. Include bacteria and fungi which digest the food externally before the nutrients are absorbed.

e.g.- Yeast, Bread mould, Mushroom etc.

iii.) Parasitic Nutrition:-

Obtains nutrients from living organisms. The parasite obtains nutrients by living on (External parasite) or in (internal parasite) the body of the host.

e.g. - Leech, Tapeworms, Lice etc.

Note:- "Cuscutta" is a Parasitic plant because it lacks of chlorophyll.

- What happens to the food we eat ?

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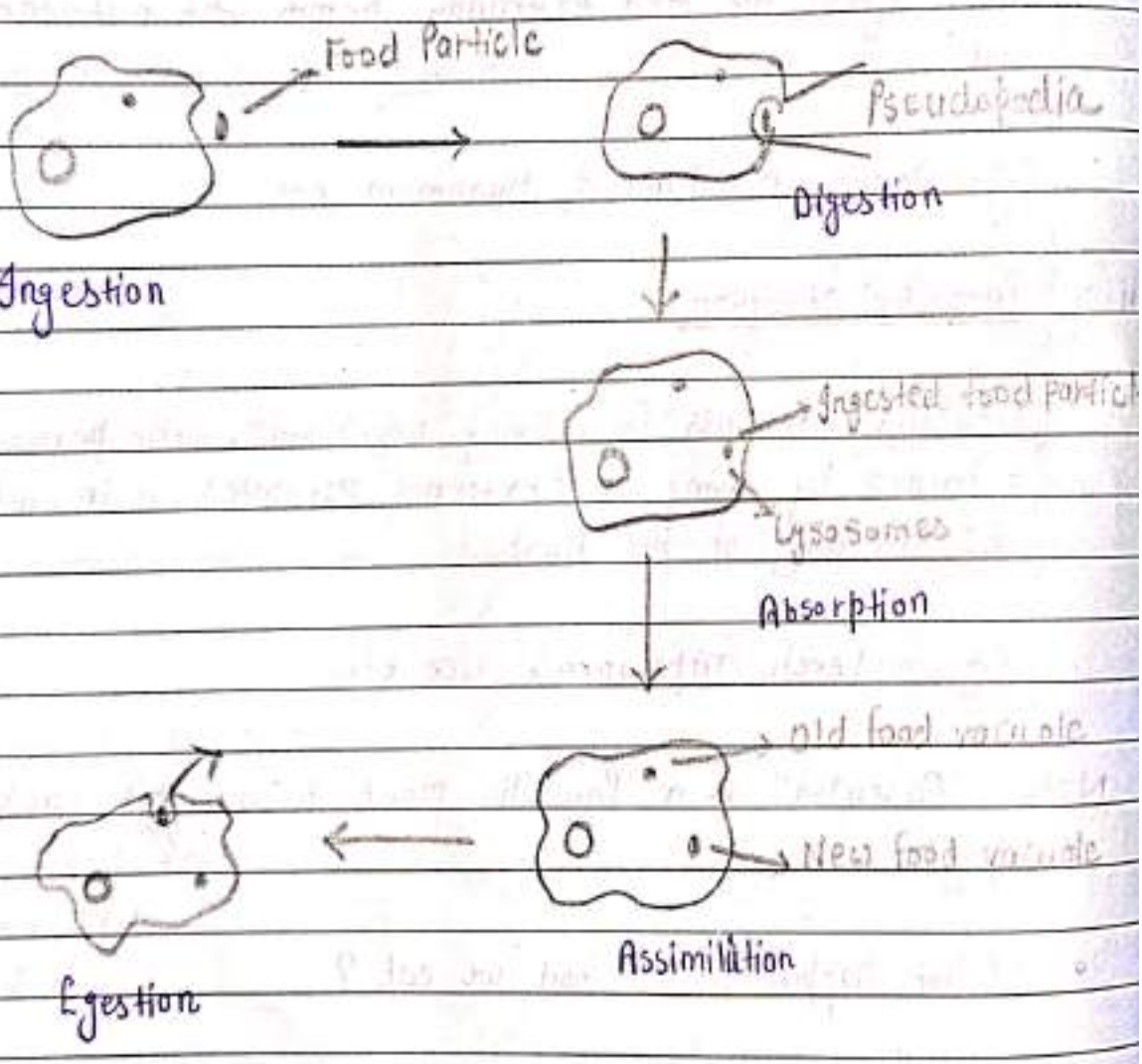
* Ingestion:- The process of taking in the food.
* Digestion :- Breakdown of food into smaller components that ca be absorbed into the Bloodstream.
* Absorption:- The process of absorption of digested food.
* Assimilation:- Utilization of digested food for energy and forgr and repair.
* Egestion :- Removing undigested ~~fo~~ food from the body.

• Nutrition in Ameoba:-



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- **Nutrition in Humans :-**

Digestive System

Alimentary Canal — Associated Organs

i) Alimentary Canal :- A long hollow tube which contains organs through which the food actually passes (Oesophagus, Stomach, Small intestine, large intestine etc.).

ii) Associated organs :- Organs that helps in digestion but no food passes through them (liver, pancreas, Salivary glands etc.).

* **Mouth (Buccal Cavity)**

Food is ingested

↓

Crushed and Chewed with the help of teeth.

↓

Food is wetted with saliva to make its passage Smooth.

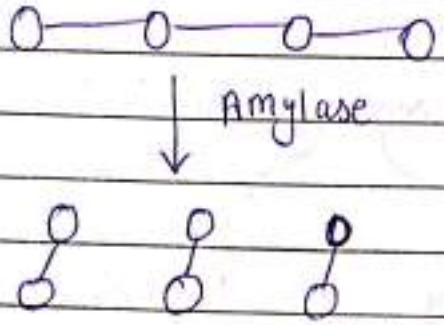
↓

Food is mixed with saliva with the help of tongue.

Mouth - Salivary gland

Saliva - watery fluid

Complex ← Starch
Sugar



Maltose → Simple Sugar

* Oesophagus (Food Pipe)
↓
Food is pushed downwards due to rythmic contraction and relaxation of muscles and is known as peristaltic (involuntary) movements.

* Stomach :-
↓
J-shaped Organ
↓
Widest part of alimentary canal

Components and functions:

→ HCl (Hydrochloric acid)
↓
Conversion of pepsinogen to pepsine
↓
kills bacteria.

→ Pepsin → Protein de digestion

→ Mucus → Protective coating, Protects from HCl and Pepsin

part of gastric mucosa

Imbalance btw HCl and Mucus :- Acidity, gastric

* Liver
↓
It Consists bile juice in gall bladder.

→ Bile Juice makes food alkaline.

helps in ~~emus~~ emulsification
of fats { break down of big fat globules into small }

→ Pancreas
→ Trypsin :- digestion of Protein.
→ Lipase :- Breaking down of emulsified fats.
→ Pancreatic amylase :- Digestion of Carbohydrates.

* Small Intestine :-
↓
5-7 m long
↓
Site of final digestion of food
↓
Secretes intestinal Juices

→ Absorption of food in Small Intestine :-

Villi are finger like projections

↓

Increases surface area for absorption

↓

Richly supplied with blood vessels which take the absorbed food to each and every cell of the body.

↓

Food is utilised for obtaining energy building up new tissues and repair of old tissue.

* Large intestine (Colon) :-

↓

Absorption of Water

↓

The remaining waste material is then excreted by Anus.

Removal of undigested and unabsorbed food.

→ Respiration :-

The process by which a living organism obtain energy (ATP) by breakdown of food in cells.

$$C_6H_{12}O_6 + 6O_2 \longrightarrow 6CO_2 + 6H_2O + ATP$$

{Glucose} {oxygen} {Carbon dioxide} {Water} {Energy}

Note:- ATP (Adenosine triphosphate) is the energy currency of the Cell.

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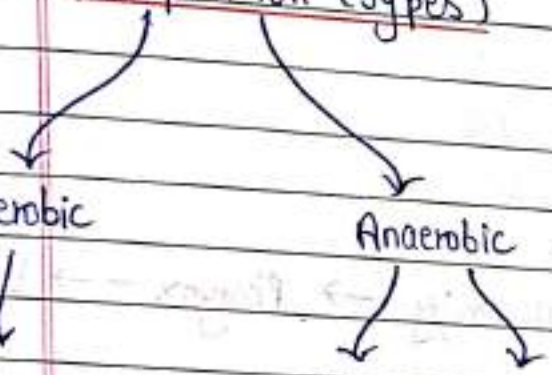
	Breathing	Respiration
i)	Breathing is a continuous process that involves both Inhalation and exhalation.	i) The process in which food is broken down in the cells to release energy is known as Respiration.
ii)	It is a physical process.	ii) It is a biochemical process
iii)	Breathing is a part of Respiration.	iii) It involves the release of energy.

- **Respiration (Types)**



	Aerobic Respiration	Anaerobic Respiration
i)	Takes place in presence of O_2.	i) Takes place in absence of O_2.
ii)	Occurs in the cytoplasm and mitochondria.	ii) Occurs only in cytoplasm.
iii)	glucose break down into CO_2 & H_2O.	iii) Glucose break down into Ethanol.
iv)	occurs in mammals including humans.	iv) Occurs in yeast, some bacterias and some plants.

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* Important { Break down of Glucose }

Glucose (6-Carbon molecule) —In Cytoplasm→ Pyruvate (3-Carbon molecule)

Pyruvate → Absence of O2 (yeast) → Ethanol + C + Energy

Pyruvate → Lack of O2 (In human muscle cells) → Lactic acid + Energy

Pyruvate → Presence of O2 (In mitochondria) → CO2 + Water + Energy

• Respiration in Humans :-

↓

Passage of air through the respiratory system.

Oxygen in environment → Nasal Cavity → Pharynx → Larynx

↓

Trachea → Bronchi → Bronchioles → Alveoli of Lungs → Exchange of O_2 and CO_2 in the alveoli

↓

CO_2 enters into the bronchioles → Bronchi → Trachea → Nasal Cavity → CO_2 is exhale into the environment

* RBCs (Red Blood Cell)

↓

Hemoglobin (Iron Containing protein)

→ Co_2 is transported in dissolved form

↘ Binds with O_2 and helps in O_2 transport.

* Alveoli → Balloon-like or sac like structure.
  - Walls of Alveoli are only one celled thick and provide a surface where the exchange of gases can take place.
  - Contain an extensive network of blood vessels which helps in exchange of gases.

* Respiration in fishes → Gills are the respiratory organs for fishes. They take in oxygen dissolved in water through gills.
  ↓
  Since, availability of oxygen is less in aquatic environment So the breathing rate of aquatic organisms is faster.

Insects → Respiration → Spiracles and Tracheae.

→ Transportation :-
  ↓
  It is a life process where substances synthesized or absorbed in one part of the body are carried to other parts of the body.

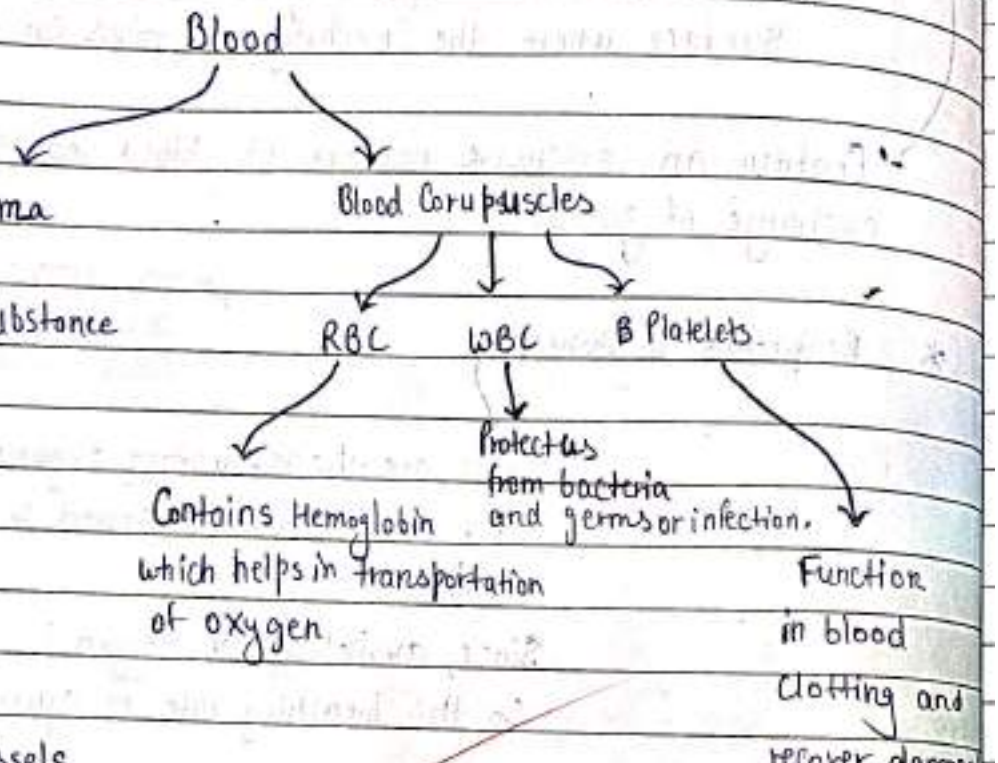
Blood → Food, CO_2, O_2, Metabolic Waste, Hormones

• Circulatory System → Blood - Fluid Connective Tissue
  - Blood vessels → Tubes
  - Heart - Pumping Organ

* **Blood :-**

↓

It is a liquid connective tissue which circulates throughout the body by pumping action of heart.



- **Blood vessels**

Arteries — veins — Capillianies

- **Valves in veins :-**

↓

Prevent backflow of the blood.

↓

Blood is under low pressure in veins.

→ **Arteries** ⟶ Away from the heart.
- ⟶ Oxygenated blood
- ⟶ Pressure high

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→ Veins → Towards the heart
→ deoxygenated blood
→ Pressure low

→ Capillaries → Exchange of Substances.

- Largest Artery → Aorta.
- Only Artery carries deoxygenated blood :- Pulmonary Artery
- Largest vein → ~~for~~ Vena Canva
- Only vein carries oxygenated blood :- Pulmonary ~~Artery~~ vein

-:- How heart pumps :-

Lungs (oxygenated blood) → Pulmonary veins → Left artium → Left ventricle → Aorta → Body

Now, when the body ~~used~~ absorb the oxygen present in the blood it ~~gets~~ gets deoxygenated.

Deoxygenated blood → vena Cava → Right artium → Right ventricle → Pulmonary Artery → Lungs

- Lymph :- → Colourless Fluid

Lymphatic System :-

- Lymph Fluid
- Lymph vessel
- Lymph Nodes

Functions of Lymph :-

- Fluid Balance :- Drains excess fluid from extracellular space back into the Blood.
- Fat Transport :- lymph carries digested and absorbed fat from intestine and transport to bloodstream.
- Immune System: Transports foreign material (ex- pathogen) to lymph nodes for disposal.

Transportation in Plants :-

Xylem
↓
transport Water from roots to the Plant
↓
Composed of dead elements
↓
Transport Unidirectional

Phloem
↓
Transport food to the Plant
↓
Composed of ~~dead~~ living elements
↓
transport bidirectional

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* Transpiration :-

i) Transpiration helps in the absorption and upward movement of water and minerals dissolved in it from roots to the leaves.

ii) It also helps in temperature regulation.

iii) It helps to get rid of excess water.

* Translocation :-

Upward and downward movement to food via phloem

Utilises ATP

→ Excretion :-

It is the process by which organisms expel metabolic waste products and other toxic substances from the body.

- Metabolic Waste :-

CO_2 | Excess mineral salts | Excess water | Nitrogenous Waste – Nitrogen Containing

Ammonia | Urea | Uric Acid

- Excretory System :-

* Functions of kidney :-

i) Excretion of wastes and other foreign substances.

ii) Regulation of blood ionic composition.

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Chapter-5

Life Process

→ Question Bank - Oswaal

1.) The inner lining of Small Intestine has various finger like projection called villi which are richly supplied with blood vessel and increase the surface area for absorption.

2.) Goat have longer small intestine because they eat grass ~~eat~~ which consist cellulose which took time for digestion due to its complexity.

3.) Pancreas secrete Trypsin which helps in digestion of Protein, lipase which break down emulsified fats and pancreatic amylase which helps in Digestion of Carbohydrates.

4.) Amino Acids / Glucose.

5.) ~~Salavi~~ Saliva wets the food to make its passage smooth. It is secreted by Salivary gland present inside the mouth. Saliva breaks down starch into Simple Sugar or Maltose.

6.) Gall Bladder consists Bile Juice which helps in the emulsification of fats. In the absence of gall ~~ba~~ bladder the emulsification of fats will be neligible therefore the fat digestion will be slow. Hence there are such diet restrictions.

7.) When the food comes from Stomach it is acidic in nature but the Bile Jice makes the medium alkaline for the action of pancreatic enzymes. Bile Juice also helps in emulsification of fats which means it breaks down large fat globules in small fat

globule.

8.) $6CO_2 + 12H_2O \xrightarrow[\text{Chlorophyll}]{\text{Sunlight}} C_6H_{12}O_6 + 6H_2O + 6O_2\uparrow$

Events occuring during the process of photosynthesis are :-

i.) Absorption of light energy by Chlorophyll.

ii.) Conversion of light energy into chemical energy and splitting of water molecules into hydrogen and oxygen.

iii.) Reduction of CO_2 to form Carbohydrates

These steps need not take place one after the other immediately. For e.g. desert plants take up Carbon dioxide at night and prepare an intermediate which is acted upon by the energy absorbed by the chlorophyll during the day.

9.) Carbohydrates :- Glucose
Proteins :- Amino Acid
Fats :- Glycerol + Fatty acid

10.) If the leaves of a plant were covered with aluminium foil, it would affect the physiology of the plants by the following ways :-

i.) No photosynthesis will occur so no glucose will be made.

ii.) No Respiration takes place as no oxygen will be taken in.

iii.) No transpiration will occur therefore there would be no upward movement of minerals and water.

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iv.) Temperature regulation of leaf surface will be affected.

11.) a.) i.) Enzyme trypsin helps in the digestion of proteins into amino acids.

ii.) Enzyme lipase helps in digestion of fats into fatty acids and glycerol

Both trypsin and lipase are secreted by pancreas into the small intestine.

b.) Function of villi :-

i.) Villi increase the surface area for absorption of digested food.

ii.) Villi are richly supplied with blood vessels which transport the absorbed food to each and every cell in the body, where it is used up for growth, repairs and development of the body. It helps to supply energy from food to cells.

12.) A process in which plants take up Carbon dioxide and water to convert ~~in~~ ~~in~~ it into carbohydrates / food in the presence of Sunlight and Chlorophyll.

Mechanism :-

i.) Absorption of light energy by chlorophyll.

ii.) Conversion of light energy into chemical energy.

iii.) Splitting of water molecules into hydrogen and oxygen.

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iv.) Reduction of Carbon dioxide to Carbohydrate.

13.) i) Hydrochloric Acid

ii) It is neccessary for digestion as it kills germs and bacteria and makes the medium acidic for the action of Pepsin Enzyme

iii) Mucus ~~prot~~ protects the lining of stomach from Hydrochloric acid.

14.) a) The gas released during the process of photosynthesis is oxygen which comes from water. During photosynthesis, ~~plants~~ plants absorb Carbon dioxide and Sunlight to produce Carbohydrates. The Solar energy trapped by Chlomphyll breaks down water molecules into hydrogen and oxygen.

b) Stomata are tiny pores present on the surface of the leaves of plant.

The opening and closing of stomatal pore are controlled by turgidity of guard cells. When the water enters ~~into~~ through the guard cells the Stomata opens and when the water moves out through the guard cells the stomata closes.

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b.) The Absorption of digested food occurs mainly in the small Intestine due to the following reasons:-

i.) It contains finger like projections called villi which increase the surface area for absorption.

ii.) Villi are richly supplied with blood vessels which transport the digested food to each and every cell which is used for growth, development and repairing of tissues. It helps to supply energy from food to cells.

16.) Process:- Photosynthesis

Type of Nutrition:- Autotrophic

Raw Materials:- CO_2, H_2O and Sunlight

$$6CO_2 + 12H_2O \xrightarrow[\text{Chlorophyll}]{\text{Sunlight}} C_6H_{12}O_6 + 6H_2O + 6O_2$$

17.) The respiratory pigment in human beings are Haemoglobin. It is present in the RBCs of blood in humans.

18.) The aerobic respiration occur in ~~a cell~~ mitochondria of the cell.

19.) Adenosine Triphosphate (ATP). It produce during respiration in living organisms in mitochondria.

20.) When a sportsman run, he often gets muscle cramps due to the production of Lactic Acid in the Lack of Oxygen. Due to the lack of oxygen pyruvate (3-carbon molecule) converts into Lactic Acid.

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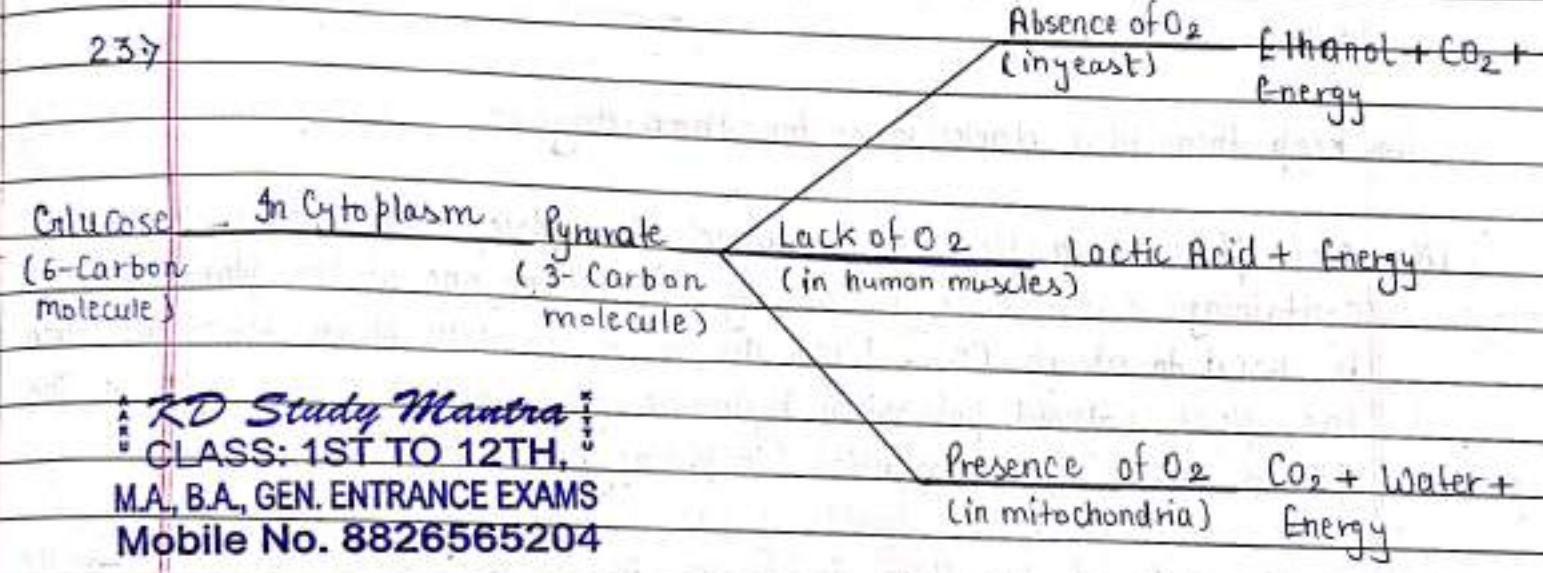
21.) The desert plants are scotoactive i.e. their stomata opens at night ~~Hence~~ Therefore they take up CO_2 at night and produce intermediate organic acid which breaks up to release CO_2. The CO_2 so produced internally is used in photosynthesis during day when stomata is closed.

22.) A terrestrial organism can obtain oxygen directly from the air and have slow breathing but aquatic organism have to obtain oxygen ~~from~~ for respiration which is dissolved in water. Since, the amount of oxygen dissolved in water is fairly low as compared to the amount of oxygen in air, the rate of breathing in aquatic organisms is much faster.

23.)



24.) A physical process by which oxygen is ~~tan~~ taken in and Carbon dioxide is given out is called breathing.

Breathing in humans involve three steps:-

i.) Inspiration :- When we breathe in, ribs moves up and flatten the diaphragm due to which chest cavity becomes larger.

ii.) Gaseous Exchange- The inhaled gas reached at ~~alevoli~~ aleveoli which are balloon like structure. ~~which these are richly supplied~~

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~~with~~ It is a large network of blood vessels where the gaseous exchange is performed as Haemoglobin binds with oxygen and carries it along the blood in the body. As blood passes through the tissues of the body, oxygen from the blood diffuses into the cell, whereas CO_2 which is produced during respiration diffuses into the blood and is carried to the lungs for expiration.

iii) ~~If~~ Expiration:- When we breathe out Ribs move down and diaphragm becomes dome-shaped decreasing the chest cavity.

25) i) Take two healthy ~~potted~~ potted plants which are nearly the same size.

ii) keep them in a dark room for three days.

iii) Now place each plant on separate glass plates. Place a watch glass containing Potassium hydroxide by the side of one of the plants. KOH is used to absorb CO_2. When the leaves of both plants tested for starch the plant without potassium hydroxide gave positive test of Starch. This shows that CO_2 is essential for photosynthesis.

26) a) The rate of breathing is faster in aquatic organisms because the amount of dissolved oxygen in water is lower as compared to the oxygen present in the air.

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27.) a.) Glucose (6-Carbon molecule) —In Cytoplasm→ Pyruvate (3-Carbon molecule) —Absence of O_2 (in yeast)→ Ethanol + CO_2 + Energy

b.) Since the aquatic organisms take oxygen which are dissolved in water, fish take in water through their mouths and force it past the gills where the dissolved oxygen is taken up by blood.

c.) Alveoli

→ Functions

i.) It has large network of blood vessels which helps in the gaseous exchange during respiration.

ii.) It increases the surface area for the absorption of gases.

d.) Haemoglobin is the respiratory pigment present inside the Red Blood Corupscles. The main role of Haemoglobin is to transport the oxygen in the body through blood.

28.) Veins have thin walls because the blood is no longer under pressure and they have valves to ensure blood flow in one direction.

29.) i.) Plasma.

ii.) Haemoglobin present inside RBCs.

30.) Transpiration.

31.) i.) Xylem

ii.) Phloem

32.) Water and minerals are transported through xylem cells from soil to

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the leaves. It transport water and minerals unidirectionally. The xylem cells of root, stem and leaves are interconnected to form a conducting channel that reaches all parts of the plant. The root cells take ions from the soil. This creates a concentration difference between ions of roots and soil. Therefore, there is a steady movement of water into xylem. As osmotic pressure is created and water and minerals are transported from one cell to the other cell due to osmosis.

33.) In birds and mammals, the left and right side of the heart are separated ~~because~~ to ensure that the oxygenated and deoxygenated blood will not mix which allow them a highly efficient supply of oxygen to the body. This is useful in animals that have high energy needs (birds and mammals) which constantly use energy to maintain their body temperature.

34.) a.) Vein
b.) P to Q

35.) Lymph carries digested and absorbed fat from the intestine and it also drains excess fluid from extracellular space back into the blood.

Blockage of lymphatic system will lead to water retention and poor fat absorption in the body.

36.) a.) First Circulation, The oxygenated blood comes into the heart through Pulm. ~~onary~~ vein and pass through Left ~~ven~~ artium and Left ventricle and then transported to the whole body through Aorta.

Second Circulation, After absorption of oxygen in the body through oxygenated blood, the deoxygenated blood enters into the Right chamber of heart through Vena Cava and pass through Right artium and Right ventricle and then transported to Lugs to be again Oxygenated through

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Pulmonary Artery.

b.) i.) Pulmonary Vein
ii.) Pulmonary Artery

37.) Transpiration :- Loss of water in vapour form through the surface of leaf / stomata of leaf / aerial parts of the plant.

→ Experimental Setup :-

i.) Take a potted plant and water it.
ii.) Cover the plant / branch with a transparent plastic sheet.
iii.) Place it in bright sunlight for ~~an~~ half an hour.
iv.) Moisture in the form of droplets is observed inside the plastic sheet.

38.) i.) Blood Circulatory System
ii.) Lymphatic System / lymph or tissue fluid

→ Functions of blood circulatory system :-

a.) Transport of oxygen.
b.) Transport of digested food.
c.) Transport of CO_2.
d.) Transport of nitrogenous waste.
e.) Transport of salts.

39.) a.) The transport of soluble products of photosynthesis (food or glucose from one part to other parts of the plant. To provide food to all parts of the plant.

b.) Root, fruits, seeds and other growing organs / part of the plant.

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40.) a.) Pulmonary vein (1) → Left Atrium (2) (Collects blood on relaxation)

↓

Contraction of Left Atrium (3)

↓

Relaxation of left ventricle (4)

↓

Contraction of left ventricle (5)

↓

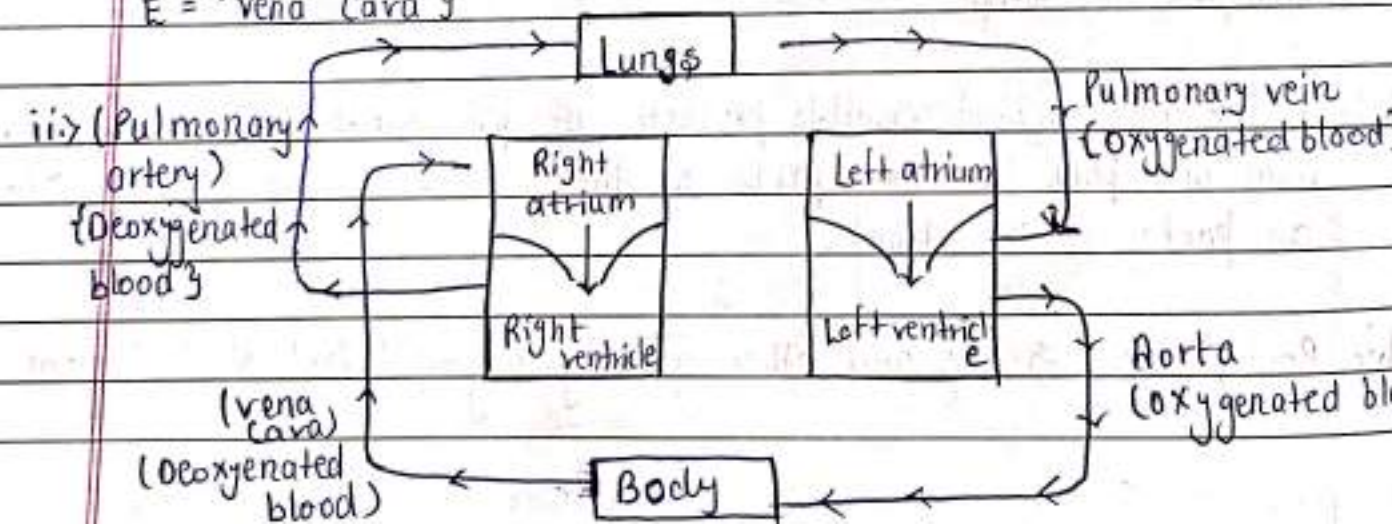
Aorta (6) → various organs of human body (7)

b.) Leakage results in loss of blood pressure which would reduce the efficiency of the pumping system.

41.) i.) Oxygenated :- B/D/F ; { B = Left ventricle , F = Left Atrium and D = ~~Pulmonary vein~~ Aorta }

Deoxygenated :- C/A/E ; { C = Pulmonary artery , A = ~~E~~ Right ventricle and E = Vena Cava }

ii.)



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42.) a.) i.) Plasma
ii.) Haemoglobin

b.) Lungs → Pulmonary vein → Left atrium → Left ventricle
(oxygenated blood)

↓

Body ← Aorta

c.) Prevent back flow of blood.

d.) Artery has thick elastic wall and vein ~~is the iit~~ has thin walls, valves are present in the veins and not in arteries.

43.) The amount of urine produced regulated by the following ways:-

i.) Amount of excess water in Body.
ii.) Amount of Nitrogenous wastes need to be excreted out.

44.) Lungs - Haemoglobin.
Kidney - Nephron.

45.) It is the expulsion of urine from the body.

46.) Glucose, Amino acids, Salts and major amount of water are selectively re-absorbed as the urine flows along the tube.

The amount water reabsorbed depends on how much excess water there is in body and how much of dissolved waste there is to be excreted.

47.) The process of removal of Nitrogenous or other metabolic waste from body is called Excretion.
The Uni-Cellular organisms remove their wastes through simple diffusion.

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48.) Filtration: Nitrogenous waste such as urea or uric acid are removed from the blood (capillaries).

Reabsorption: Glucose, amino acids, salts and major amount of water are selectively reabsorbed.

49.) i.) Many plants store waste materials in the vacuole of mesophyll cells and epidermal cell. When old leaves fall, the waste materials are excreted along with the leaves.

ii.) Gaseous waste is removed through stomata in leaves.

iii.) Excess of water is also excreted from the plant body through the stomatal pores. The process of elimination of water is called transpiration.

50.) Nitrogenous waste present in urine ~~are~~ is urea or uric acid. Nephron is the basic filtration unit of kidney.

Amount of urine produced regulated by:-
i.) Amount of excess water present in the body.
ii.) Amount of nitrogenous waste that is to be excreted out from the body.

51.) Kidney ⟶ Ureter ⟶ Bladder ⟶ Urethra

Glucose, Amino acids, salts and major amount of water are re-absorbed from the initial ~~fit~~ filtrate in the tubular part of the nephron.

52.) a.) A pair of kidneys, A pair of ureters, a urinary bladder and a urethra.

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b) A Kidney has large number of filtration units called nephrons. Each nephron has cup shaped Bowman's capsule containing a bunch of capillaries called glomerulus. Blood gets filtered in glomerulus. Filtrate gets collected in Bowman's capsule, some useful substances such as glucose, amino acids, salts and major amount of ~~salts~~ water are selectively re-absorbed as urine flows through nephron tube. The urine formed in each kidney is eventually stored in the urinary bladder and excreted out through urethra.

53) a) i) O_2 and CO_2 produced during photosynthesis and respiration is given out of through stomata in the leaves.

ii) Excess water is given out by the process of transpiration.

b) Structure of Nephron:-

Nephron is the basic filtration unit in the kidney which is made up of fine tubules, one end of which ~~forms~~ a cup-shaped structure called Bowman's capsule, and other end opens into a collecting duct/tube.

Function of Nephron :-

Blood carrying nitrogenous wastes is ~~filtred~~ filtered through the glomerulus and is collected in the Bowman's capsule, some useful substances in the filtrate like glucose, amino acids, salts and water are selectively re-absorbed as the filtrate flows along the tube.

54) a) The process by which Nitrogenous or metabolic waste excreted out of body is called Excretion.

b) Nephron is the basic filtration unit present in the kidney.

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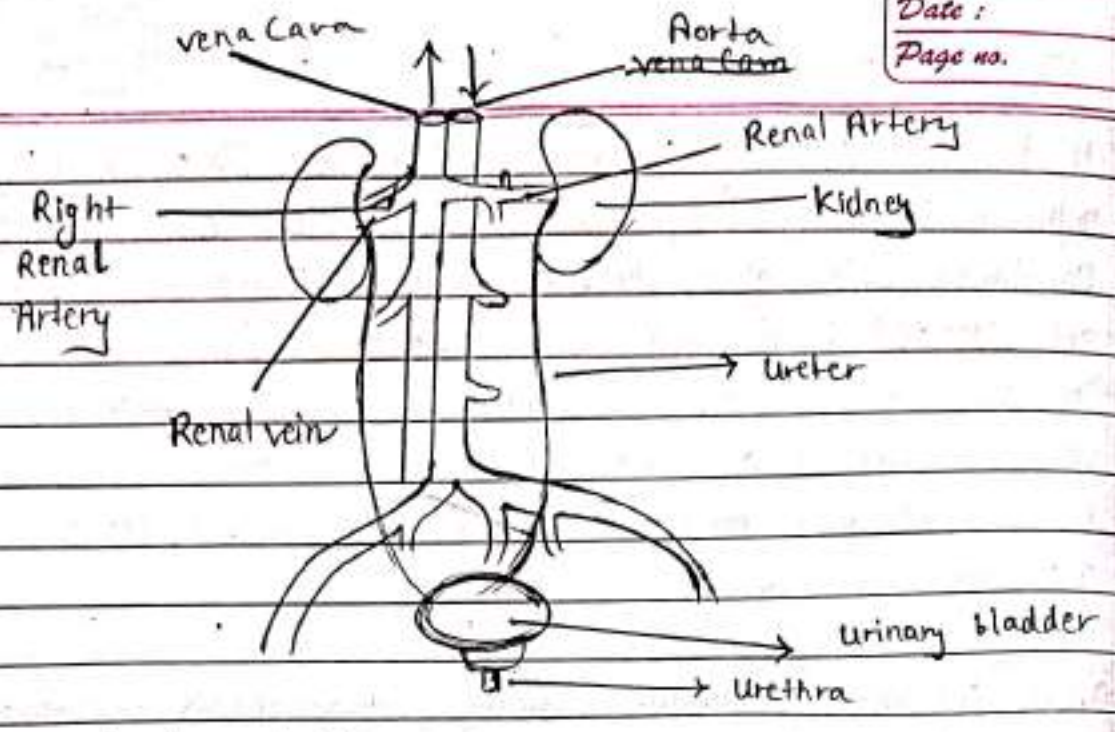

55.) b.) Vital functions of kidney :-

i) To regulate right amount of water in body

ii) Helps in filtering out nitrogenous waste like urea or uric acid from blood.