EVERWIN PUBLIC SCHOOL

STD: X **SCIENCE - BIOLOGY**

LIFE PROCESS

Nutrition:

The process of providing or obtaining the food necessary for health.

Autotrophic Nutrition:

The autotrophs like green plants take in substances from the outside and convert them into stored forms of energy by the process of photosynthesis.

$$6CO_2 + 6H_2O \xrightarrow[\text{Sunlight}]{Chlorop\ hyll} \underset{\text{Glucose}}{C_6H_{12}O_6} + 6O_2$$

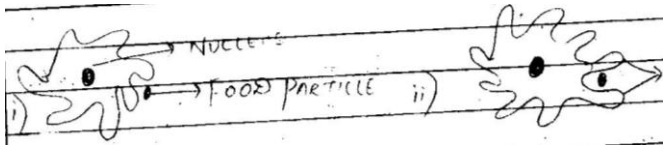
Heterotrophic Nutrition:

* Organisms which depend upon autotrophs or other organisms for their food is called heterotrophic nutrition.

Hetertrophic Nutrition

- Parasitic Nutrition
- Saprophytic Nutrition
- Holozoic Nutrition

Nutrition in Amoeba:



Pseudopa Dsa

Nutrition in Human Beings:

→ Digestion of food starts in the mouth.

→ Sotiva Contains an emzyme called salivary amylase that brinks down starch into sugar.

→ It is pushed into the stomach through the oesophagus by the peristaltic movements.

→ Gastric glands in the stomach releases hydrochloric acid creates an acidic medium which facilitates the action of the ezyme pepsin.

→ Mucus protects the inner lining of the stomach from the action of the acid.

→ Small intestine is the site of the complete digestion of carbohydrates, proteins and fats.

→ It receives the secretions of the liver K pancreas.

→ Bile juice from the liver acts on fats.

→ It break them down into smaller globules.

→ Pancreas secretes pancreatic juice which contains enzymes like try sin for digesting proteins.

→ Lipase for breaking down emulsified fats.

→ The inner tinning of the small intestine has numerous finger0like projections called Villi which increase the surface area for absorption.

→ The unabsorbed food is sent into the large intestine where more Villi absorb water from this material. The rent of the material is removed from the body Via the anus.

Repiration:

Aerobic anaerobic

Aerobic Respiration	Anaerobic Respiration
→ Respiration that takes place in the presence of oxygen. → It takes place in mitochondria → It produces 38 ATP molecules	Respiration that takes places in the absence of Oxygen. It takes place in yeast. It produces 247P molecules

Break down of glucose by, Various pathways:

Human Respiratory System:

Nostril ⇌ Nasal passage ⇌ Nasal Canty ⇌ Pharyse
Bronchi ⇌ Trachea ⇌ Larynx ⇌ Lungs ⇌ Bronchioles ⇌ Alvecolar sac ⇌ Blood capitaries

Mechanism of Breathing:

- Inhalation
- Exhalation

* During inhalation the thoracic cavity expands * Rile tift up. * Diaphragm become flat in shape * Volume of lungs increases & air enters the lungs.	Thoraxic Cavity Contracts. Ribs move downwards Diaphragm becomes dome shaped Volume of lungs decrease & air exists from the lungs.

Fransporation:

Fransportation in Human Beings:

The Circulatory system of humans consists of Heart, blood vessel, blood.

Double Circulation: Blood travels twice through the heart in one complete cycle of the body.

Pulmonary Circulation: Blood moves from the heart to the lungs.

Systemic Circulation: Blood mones from the lungs to the heart.

Lungs $\xrightarrow{Oxygented\ \ blood}$ Pulmonary Veins → Left atrium

To different ← Aorta $\xleftarrow[Aortic\ \ Value]{}$ Left verticles

parts of the body

* The normal systolic pressure is about 120mm hg and diastolic pressure is 80mm of Hg.

Blood Vessels → Arteries, Veins, Capillaries

Fransportation in Plants:

Transportation in plants can be done by the two types of tissues: xylem and Phleem.

Transport of water:

Xylem tissue helps in conducting water and minerals from roots to all parts the plant.

Transport food:

Phloem tissue helps in conducting food and soluble substances from levels to the other parts of the plants. This process is called translocation.

Excretion:

The biological process involved in the removal of the harmful metabolic wants from the body is called excretion.

Excretion in Human Beings:

The excretory system of human beings includes a pair of Kidneys a pair of ureters a urinary bladder and a urethra.

Artificial Kidney (Hemodialysis)

* Several factors like infections, injury or restricted brood flow to kidneys reduce the activity of Kidneys. In can of kidney failure, an artificial kidney can be used.

* Normally in a healty adult, the initial filtrate n the kidneys is about 180L daily.

* The volume actually excreted is only a litre or two a day.

Excretion in Plants:

Oxygen during photosynthesis

Carbon dioxide during Respiration

Water by transpiration

Fallen leaves

Resins, gums, some waste substances into the soll around then.