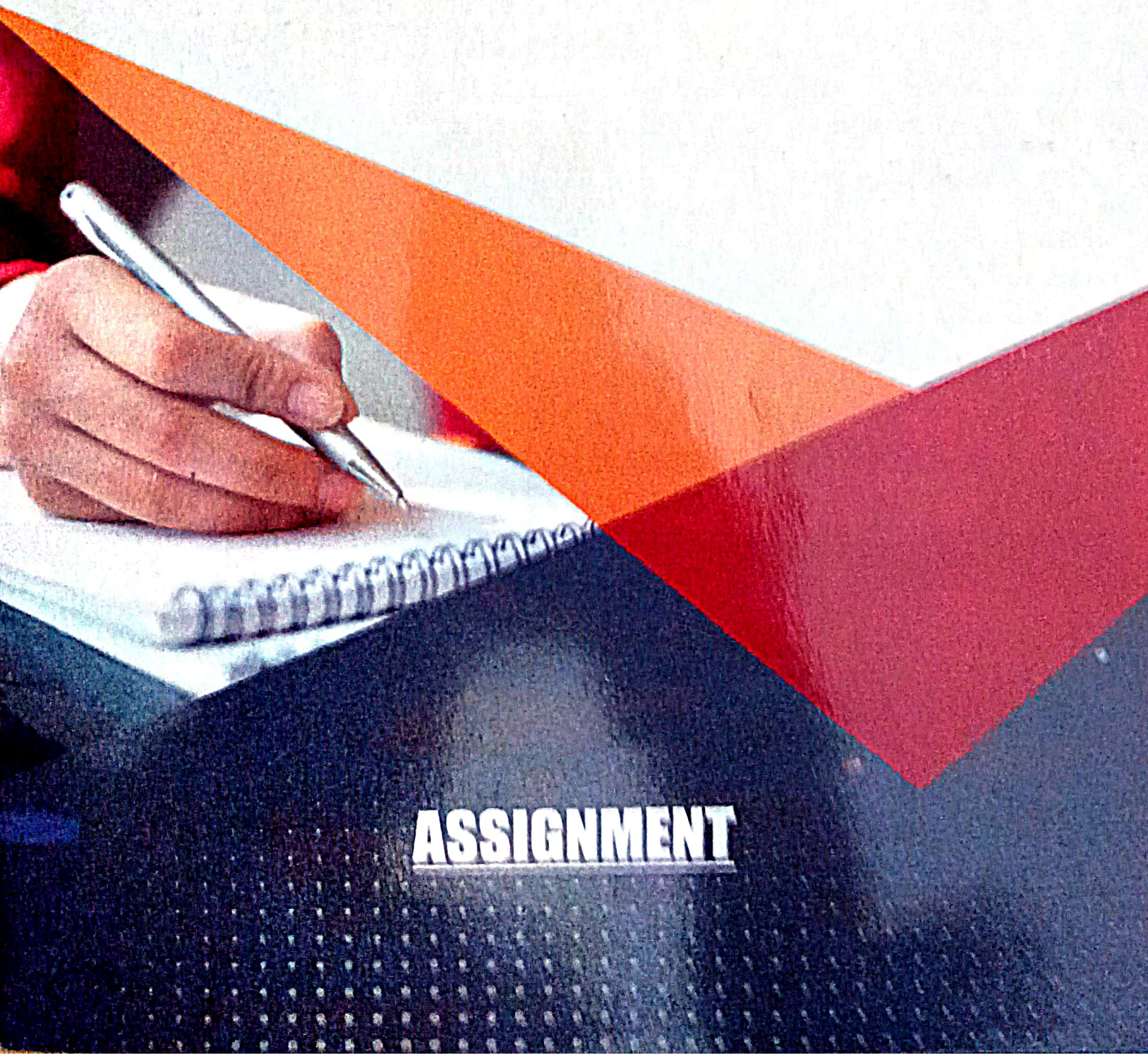
R.K.

GROUP OF COLLEGE

Behind Kalwar Police Station, Kalwar, Jaipur (Raj.)



ASSIGNMENT

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Q-1 Explain the locomotion and nutrition in Paramecium

Q-2 Describe the life cycle of Ascaris lumbi-coides

Q-3 Differntiate b/w Complete and in Clomplte Metamorphosis in insects.

Q-4 Elabarate on the taxanomy of Balanoglossu

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Ans-1 Movement in Paramecium:-

→ Paramecium is a suitable example for the study of Cilliary Movement. The entire body of Paramecium is covered with Cillia. The Cillia in Paramecium is 10-12 mm long.

→ There are about 10,000 - 14,000 Cillia on the body of Paramecium

2 Cilliary Movement:-

During Movement, the Cillia Perform a Pendulum-like oscillation.

→ The oscillation has two strokes

- Effective Stroke :- It is rapid and Powerful
- Recovery Stroke:- It is slow and Gentle

→ In the effective stroke, the Cillia strike forcefully against the water

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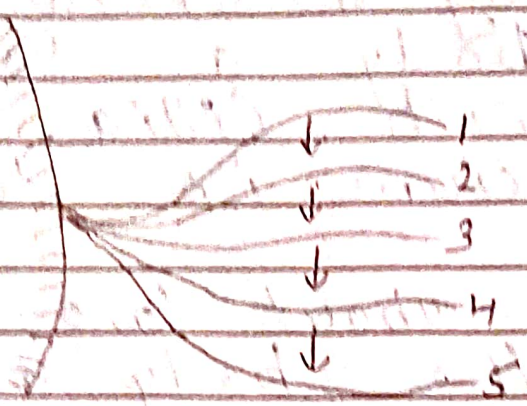
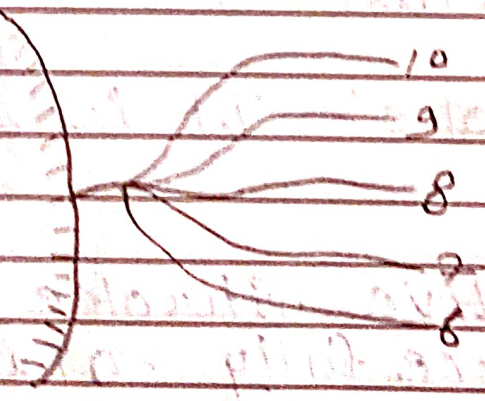
Acting like Oars, and Propel the Body Forward



Dig:- Effective stroke

Effective stroke:- This diagram depicts an effective stroke. The effective stroke is Characterized by its rapid speed. During this stroke, the Cilia Move Rapidly Causing a surge of water.



Dig:- Recovery stroke

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Recovery Stroke :- This diagram Illustrate a Recovery Stroke. The Recovery stroke is slower in Comparision to the effective Stroke The Cilia Move at a slower Pace Gradully Returning to their Original Position. This Movement offers less Resistance to the water.

Contraction / Metaballic Movement :- Paramecium's body is extermly flexible it can easily pass through narrow Passage even smaller than its body. During this it Contacts its body, Passes through the narrow Path and then Returns to its original states

Nutrition in Paramecium :- Nutrition in Paramecium occurs in three stages
(1) Ingestion
(2) Digestion
(3) Egestion

Paramecium is a holozoic organism it engulfs food Particles Due to the Movement of Cilia food Particles Come

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close to the Paramecium. Paramecium has cilia all over its surface, and the food particle moves towards the oral groove

(1) Digestion:- Each food particle in the food vacule is surrended by a layer of water. The food vacoule moves around the cell due to the movement of the endoplasm protein digestion occurs in Paramecium. The digested food is absorbed in to the cytoplasm

(2) Nutrition:- Paramecium is a hetra-tropic organism it main food source is bacteria found in water. Green algae provide additional Nutrition to Paramecium through a symbiotic Relationship.

(3) Food digestion and Egestion:- Ass the food is Digested the food vacouls become smaller. undigested food is expelled from the cell through a definite anal pore.

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Ans-2

General Characteristics of Ascaris

→ Ascaris worms are long and cylindrical, with females being longer than Males.

→ Can be up to 31 cm. long 4 cm in Diameter.

→ Ascaris worms are usually creamy white or Pinkish in Color.

→ Ascaris worms have tapered ends and the smooth and unsegmented

→ Ascaris worms have a noncellular highly Resistant cover Cassed a cuticle.

→ Ascaris worms have a nerve ring and Many longitudnal nerve cordle

→ Ascaris worms Reproduce exclusively sexually. Ascaris worms Can be live for about 1- 2 Years.

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Life Cycle of Ascaris :-

Introduction :- Ascaris is a Parasitic warm found in the human intestine. Its life cycle is completed in a single Host (human). The life cycle of Ascaris inside the host takes about 2-3 Months to Complete. Male and Female worms mate in the Host's intestine Fertilization occurs in the anterior Part of the uterus & Posterior Part of the Oviduct.

Egg :- The eggs are Passed out of the host's body with feces. A Female Ascaris can lay up to 200,000 eggs Per day. eggs develop in to the infective stage out side the body.

Cleavage :- After the start of cleavage the embryo becomes a larva in 14 days.

→ The larva Resembles the adult Ascarsis the embryo becomes a larva in 14 days.

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Infection:- The eggs of the worm are the carriers of Infection when contaminated water or food is consumed, the eggs Reach the human intestine. Children are more susceptible to infection.

→ When the eggs Reach the human intestine The shell of the egg dissolve due to the digestive Process and the larvae hatch At the time of the larvae is Approximately 0.25 mm to 0.30 mm in size. Using its wriggling Motion the larva enters the liver through the bile duct.

→ This larva travels extensively throughout the Host's body in two stages

(1) : Primary migration
(2) Secondary migration

(1) Primary migration :- The larva Pierces the intestinal wall and enters the bile duct, Reaching the liver in 3-4 days From the liver, it travels to the lungus through the heart.

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bowl → hepatic vascular System → heart ← hepatic vein ← Liver ←

↳ Pulmonary → lungus → Alveolus

Second migration :- This stage occurs approximately 21 days after the first stage The larva undergoes a second molt and then after approximately 21 days. It molts again entering the third stage In this stage the larva starts moving from the lungus of the host to the windPipe and eventually Reaches the Pharynx The larva in this stage spends approximately 8-10 days After 8-10 weeks the larva becom Capable of Reproduction.

Alveolus → air ducts → trachea → Pharynx

bowl ← stomach ← eosophagus ←

:- Diagram showing second migration

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Blood Parasite Journy :- The Female Anopheles Mosquito takes blood Meal From an Infected Person. Malaria Parasites are Infected Into the Humem blood Stream

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Ans - 3

Direct and indirect Development in insects:- The first stage in the journey of Development from zygote to adult is called the embryo in oviparous animals, the emergence of the embryo is called hatching. Development from hatching to adult can occur in two ways:-

(1) Direct Development
(2) Indirect Development

1. Direct Development:- Direct development is found in those organism where the eggs are rich in the food material and have specialized tissue for nutrition. In Reptides and Birds their eggs contain a significant amount of yolk. These eggs are called cleidoic eggs. The embryo utilize the energy from the food material for growth the transforms into a miniature adult form by time of hatching

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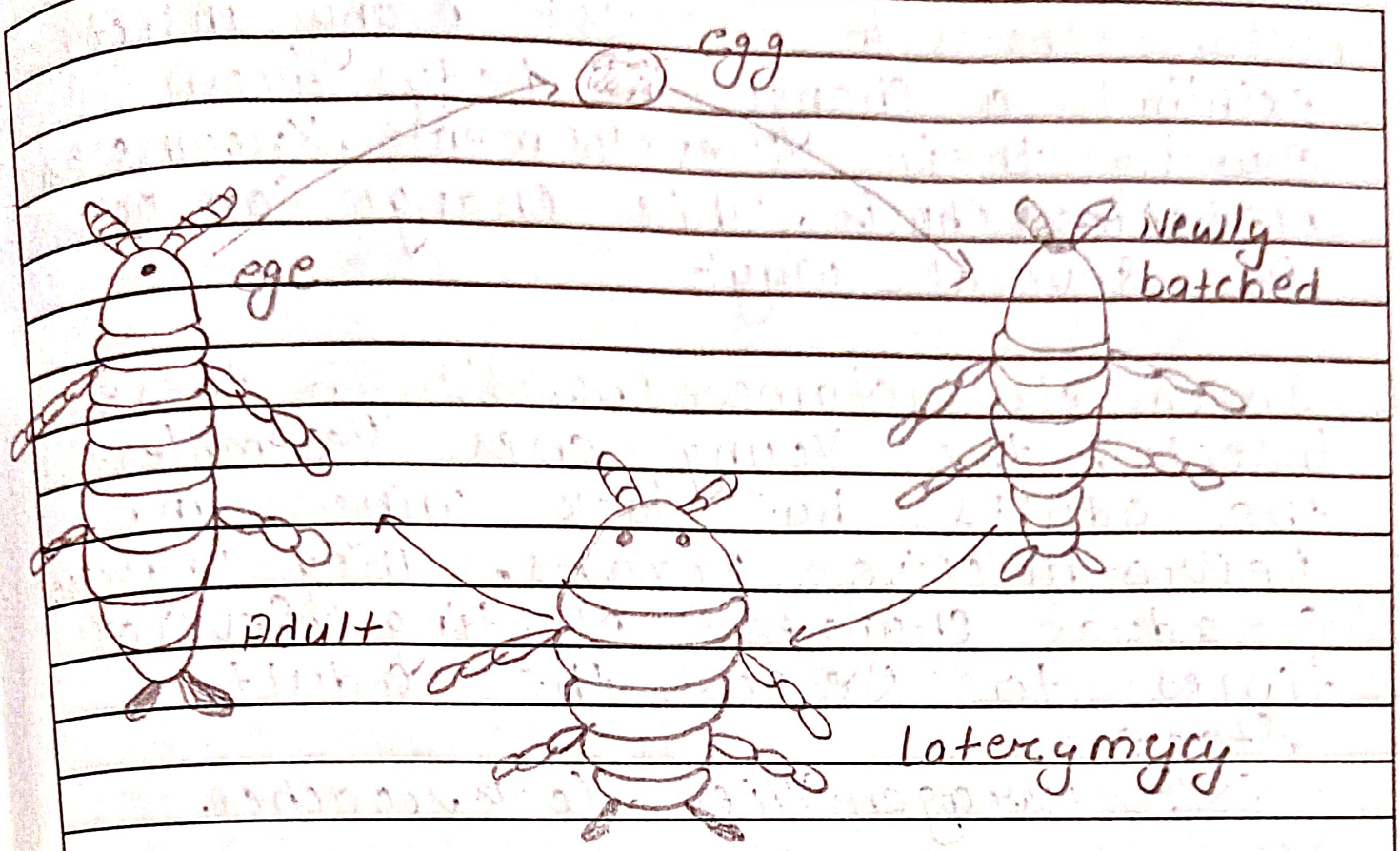

Dig:- Direct Development in Lepisma

2 Indirect Development:- In many animals a stage develops from the embryo that is different in form, nature etc. from the adult. This stage later changes into the adult stage. For example a larva develops from the eggs in many insects which is not similar to the adult. This form changes into adults.

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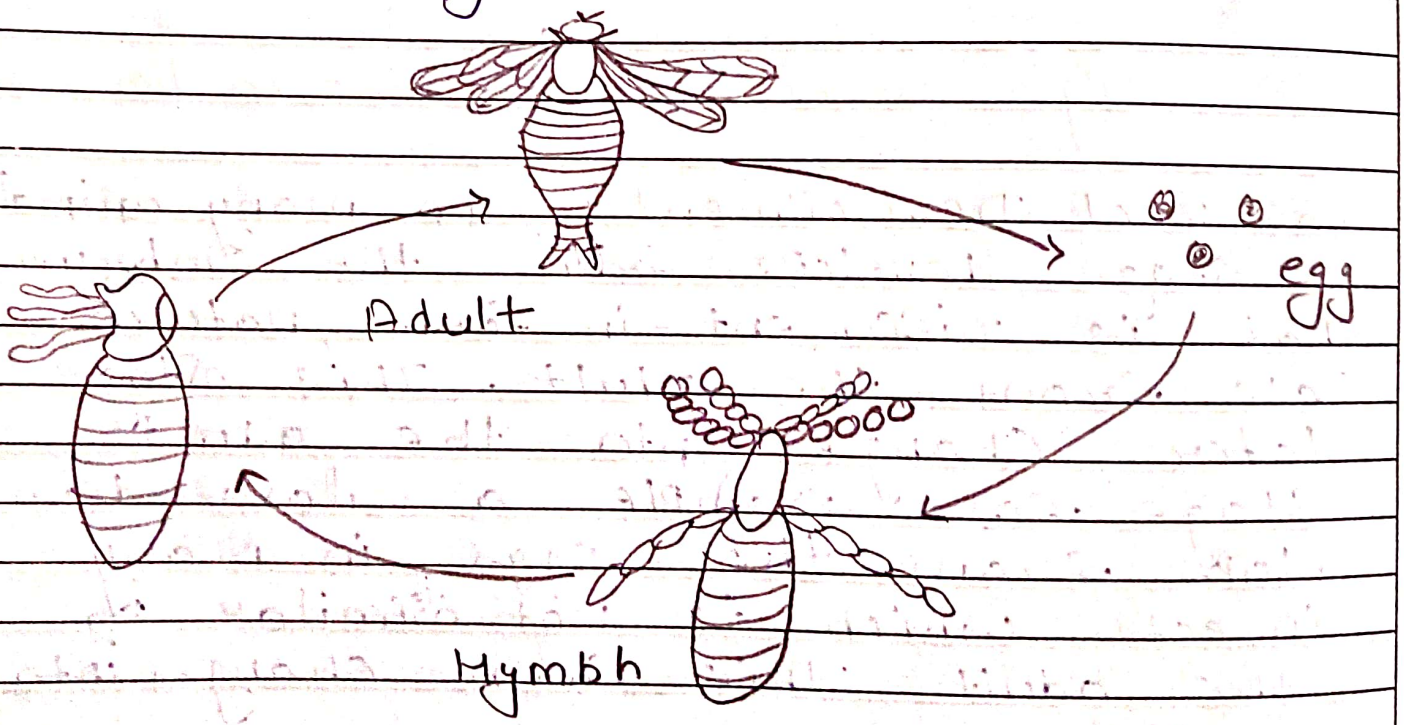
Metamorphosis in insects:- Many insects exihibit a change in body form During their Development, Knowns as Metamorphosis. This change can occur in several way:-

1 Incomplete Metamorphosis:- In these insects, the young ones Resembles the adults but lack wings and Reproductive organs. They undergoes Gradual changes Molting several times to Reach the adult stage

Ex:- Dragonflies, Cockroaches.



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Full Metamorphosis:- In insects belong to orders like Lepidoptera, Diptera etc. there are four stages in their development: egg have larva Pupa and adult etc.

Egg:- The egg is the intial stage of Development.

Larva:- This is the active Feeding stage where the larva actively feeds and Grows several times its size

Pupa:- In this stage Rapid transformati occurs. The larval stage body parts are broken down by enzymes and Few new adults structures are formed. This is the Final stage where the adult insects emerges from the Pupa it is capable of Reproduction and Feeling, depending on the species This is the active Feeding the stage where the larva actively Feeds and Grows several times its size.

It is capable of Reproduction and Feeding, depending on the species

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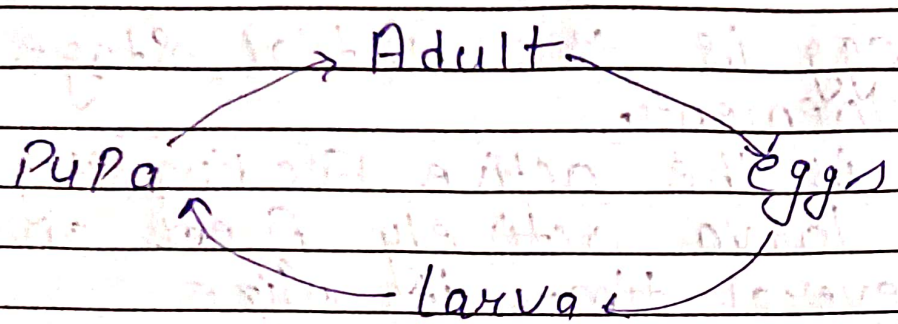
Different From larva complete Meta morPhosis occurs, this Meta-morPhosis type is called.



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Ans - 4

Balanoglossus :-

Classification :- Phylum - Hemichordata
Class - Entra Peusta
Genus - Balanoglossus

Characters :- Balanoglussus is a Marine worm like animal with Soft Cylindrical body that is Covered in Mucus and Cillia. It is also known as the tongue worm or acorn worm Balanoglossus Can Raonge in Length from 2 cm to 2.5 Centemeters
They are three types
(1) Probocis (2) Trunle (3) Collar

Probocis :- The Probocis is the anterior Part of a Balanoglossus, a Marine invertebrate also known as an acorn worm. These are divided into three types
(1) Front Part
(2) Middle Part
(3) back Part.

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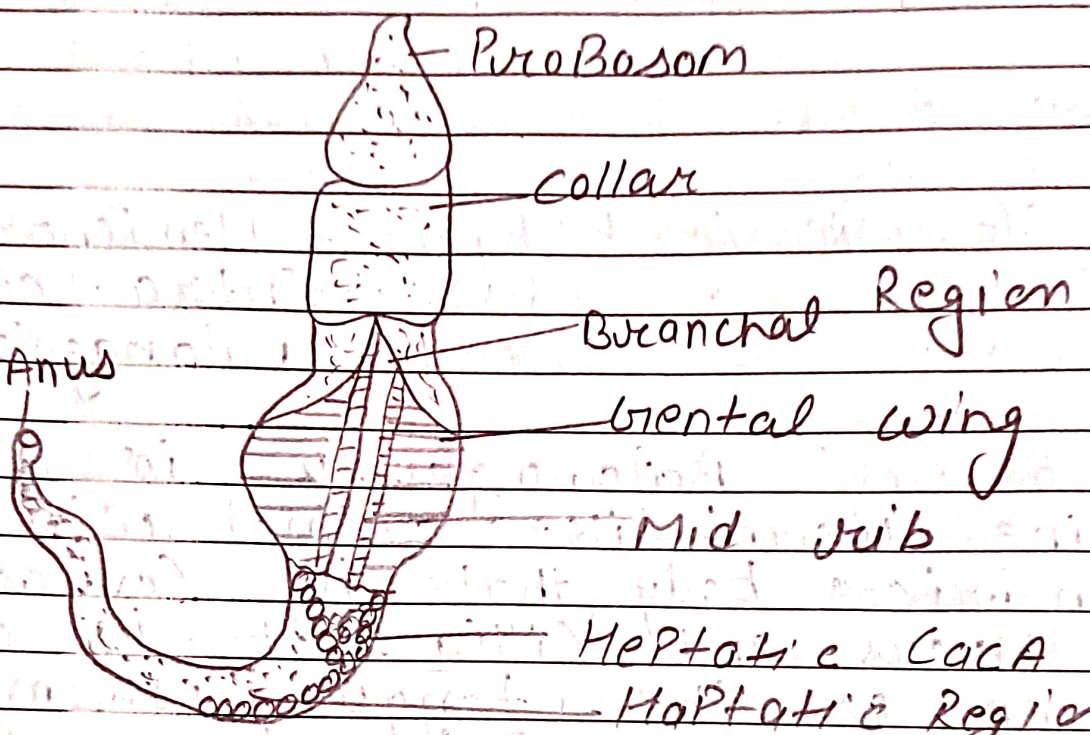

Dig :- Balanoglossus

Digestive System in Balanoglossus :- The Digestive System of Balanoglossus exhibits a long alimentary canal. This straight tube is provided along with associated glands where in the alimentary canal beings anteriorly with the mouth. The alimentary canal can be segregated into Four section - Oesophagus Buccal tube, Pharynx and the Intestine

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1 Mouth :- This Permanet Pore is Present Venterally between the Probocis and Collar found at the bottom of the Probocis stalk to be Precise

The mouth is enabled with 2 sets of muscle fibres whereein radial fibers causes its closing.

2 Buccal Cavity :- Mouth ends in the short buccal Cavity: the lining of this Cavity is with Glandular and Cilliated cells A stiff hollow buccal diverticulum Projects from the Ceiling of this Activity which extends as a stomo-chord into the Probasis Coelom

3 Pharynx :- Found in the branchio Genital section of the trunk the wall Com Prise a longitudnal Construction through each of the lateral sides which extend into the lumen as Parabranchial ridges. It Consists of tall Columnar Cells.

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4 Oesophagus :- The terminal Pair of Gill - Slits of the Pharynx leads to a tiny Part of the alimentary Canal the Oesophagus the ventral and Dorsal Division of the Pharynx of the extends some more into the oesophagus

5 Intestine :- Intestine is Found behind the Oesophagus as long straight tube extending along the trunk it can be distinguish in to the haptatic and the Post haptatic Cae Cae of the trunk.

6 Anus :- Intestine leads Poesteiarly into the Anus. The alimentary Canal ends with the anus at the end of the Trunk which typically Compriose the Sphincter Muscels.

Food, Feeding, Digestion :- The balano-glossus uses Cilia to create a water

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Food And brings food into the mouth the Food Passes through the ventral digestive Portion of the Pharynx and into the esophagus and intestine. enzymes Produced by the Proboscis, Pharynx Gland Cells and hepatic Region of the intestine break down the food.

The digestive system of balano-Glossus is a long straight tube is Called alimentary Canal that starts at the Mouth and ends at the anus. The alimentary Canal has Four section the esophagus, buccal Tube, Pharynx and intestine.

Respiration in balanoglossus :- Blano-Glossus has a Respiratory System that includes the brenchial Portion of the Pharynx and baranchial sacs that open the through Gill Pores.

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The lateral Cilia lining the Gill Slits Creat a current of water that Moves through the mout. Pharynx gill slits and branchial Sacs, and exits through the Gill Pores.

Branchial Chamber:- The branchial chamber in Balano glossus is Part of the Respiratory system and is Made up of the branchial Sacs and the branchial Portion of the Pharynx the branchial Sacs open through gill Pores.

→ Some Food Particles enters the Mouth with the water current that Moves Food and oxygen through the body

→ The Gill Pores are Small openings in the anterior half of the branchiogential Region

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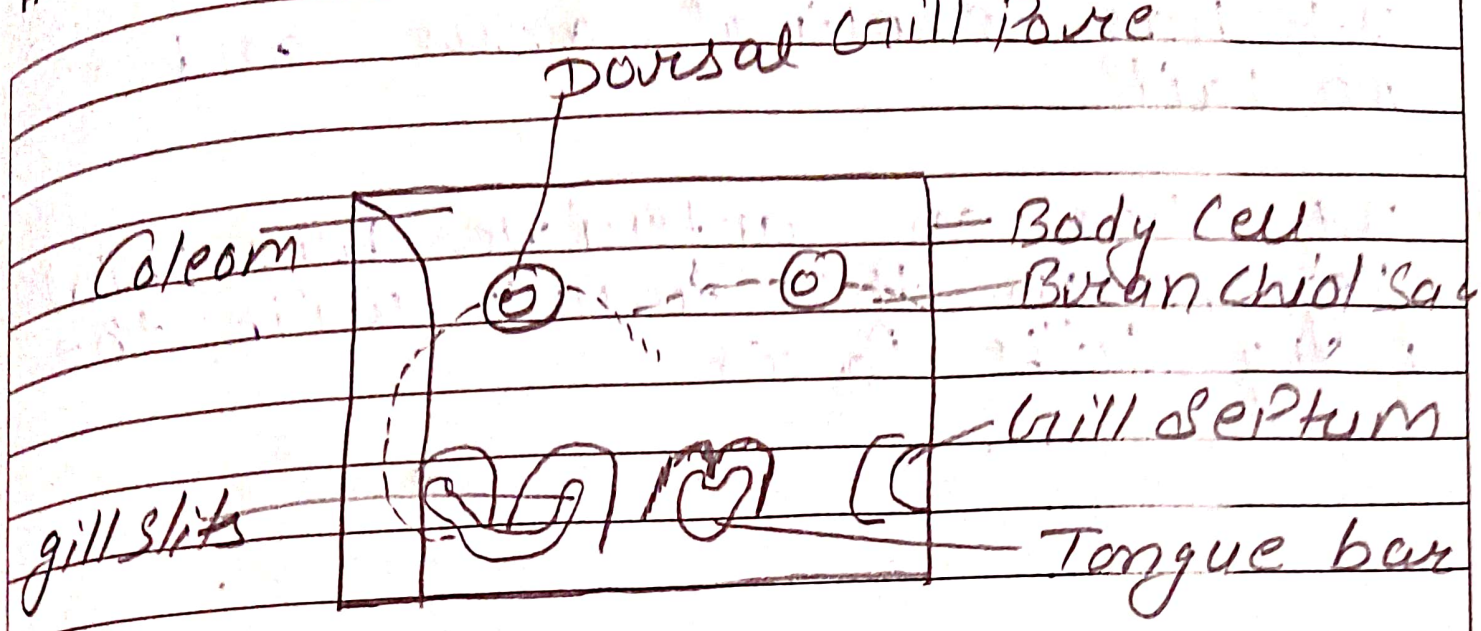

Circulatory System in balanoglossus:-
Blanoglossus is a marine worm that the connecting link blw chordates and non-chordates It has well-developed open Circulatory System

Some characterstics of balanoglossus

→ It has an elongated, worm-like body that is divided into three Regions the Proboscis Collar and trunk.

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→ It has terminal anus and NO tail

→ It has an anterior branchial Region in the furcink with the many Gills Pores

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