

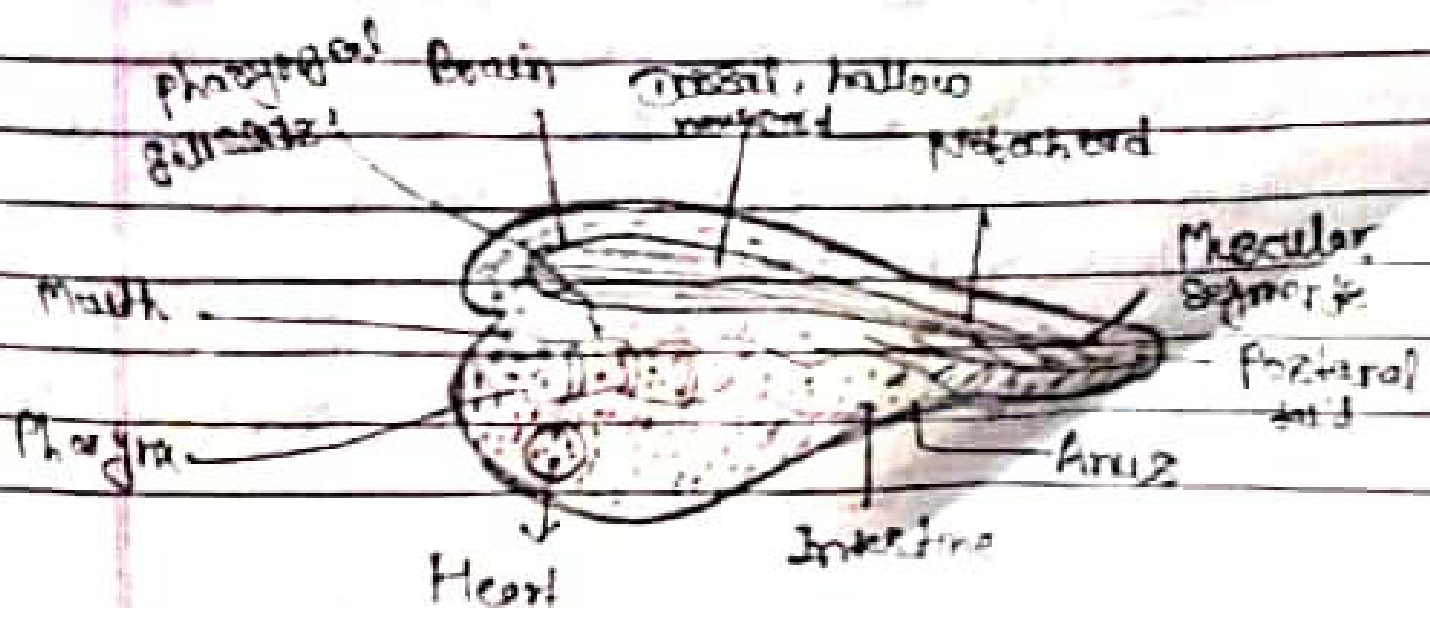
03-05-2020

Answer

Dr. Anand Verma, Assistant
Professor and Head, Jk College
Banda, U.P. B.Sc. Part 2, Paper (222A)

Ques: Cephalochordata का Classification के
लिखतय हूा चिह्न सहज Verman
Key.

Ans:- The sub-phyllum, Cephalochordata
Includes a single class - Leptocardia
which has single family: Branchiostomidae
like family contains only two genera
Branchiostoma and Asymmetron.



The Subphylum - Cephalochordata
includes Amphioxus or As Branchiostoma

↳ Palas described this animal first.
He named it as *Urocyclus lanceolatus*.
He included this in Mollusca.

↳ In 1834, Cuvier described the structure
of the organ.

↳ In 1830, Goode named it as *Amphioxus*.

Characteristics of Cephalochordata (Amphioxus):

i) presence of dorsal tubular nerve
cord.

ii) presence of long notochord from
anterior end to posterior end on the
dorsal side. Because it extends to
cephalic region. Hence it is called
Cephalochordata.

↳ Gill slits are present in the

- iv) presence of post anal tail.
- v) the presence of dorsal diverticulum.
- vi) The development of hepatic portal system
- vii) presence of Myomeres and which are useful for locomotion
- viii) In these characters Cephalochordates resembles Chordates.

→ The cephalochordate primitive characters:-

⇒ The excretory system containing protonephridia

In the chordate world, the presence of Solenocytes is not reported. But, In Amphioxus Solenocytes are associated with Nephridium.

- 1) Absence of heart and kidney.
- 2) Absence of paired limbs or paired fins
- 3) Absence of distinct head.

- 5) Absence of distinct paired gonopodia
- 6) Gonads without gonoducts.

Thus Cephalochordates will show many primitive characters.

→ Special characters of cephalochordata :-

- i) Because of its ciliary mode of feeding the pharynx is embedded with many gill slits.
- ii) oral hood is well developed for ciliary mode of feeding.
- iii) Because of its ciliary mode of feeding the atrium is very well developed.

Thus, Amphioxus show some special characters which are developed because of its ciliary mode feeding.

→ The Cephalochordata relationship with vertebrates:-

Cephalochordates show many close relationship with vertebrates.

In some points they differ.

Similarities:-

- i) presence of gill slits in pharynx.
- ii) presence of endostyle in pharynx.
- iii) presence of ciliary mode of feeding
- iv) presence of atrium.

Differences:-

- i) Absence of tail.
- ii) Absence of distinct heart
- iii) presence of notochord and nerve cord in the adults.

~~the~~ presence of myotomes in the adult.

In this way cephalochordates differ with vertebrates.

→ Cephalochordates show some invertebrate features.

i) Absence of paired nephridia like annelids.

ii) presence of flame cells like flatworms.

iii) presence of soft body and slug like appearance like molluscs.

By considering the above facts we come to a conclusion that:

Amphioxus is a chordate animal. Amphioxus is a degenerate jawless chordate animal. It mainly shows chordate characteristics. It differs from vertebrates in some respects. Hence, it is separated and kept in a separate sub-phylum called Cephalochordate.