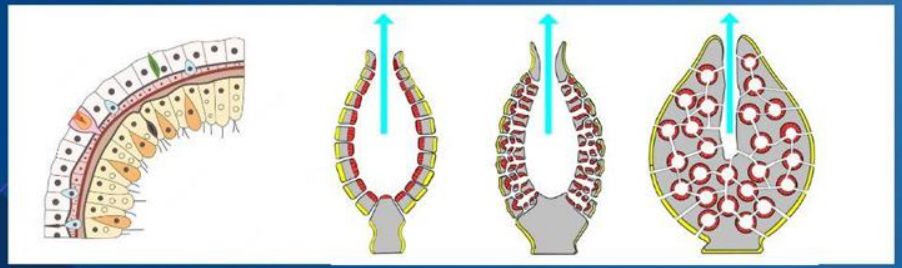
PHYLUM : COELENTERATA, CTENOPHORA, PLATYHELMENTHES, ASCHELMENTHES

ANIMAL KINGDOM - L2



MISSION MBBS 11th | ZOOLOGY

PUSHPENDU SIR

MISSION MBBS

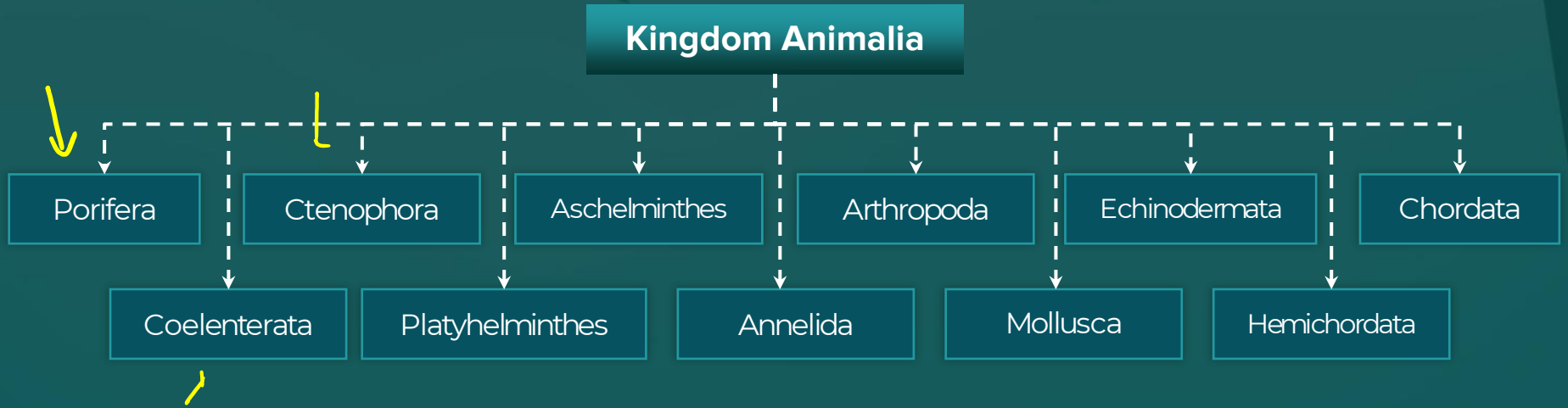
MONDAY TO FRIDAY
4 PM - 8 PM

PUSHPENDU SIR	SACHIN SIR	VIVEK SIR	PANKHURI MA'AM	ANUSHRI MA'AM
ZOOLOGY	ZOOLOGY	CHEMISTRY	BOTANY	PHYSICS

Aakash App for JEE & NEET

BYJU'S

Recall! Kingdom Animalia



Today's Topics

1. Phylum Coelenterata
2. Phylum Ctenophora

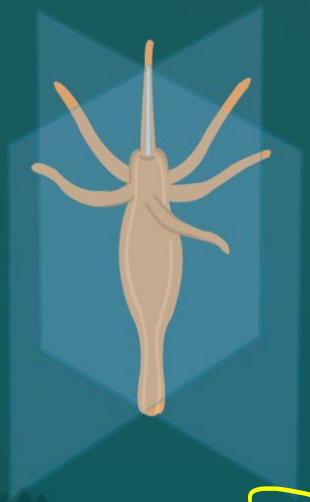

Phylum
Coelenterata

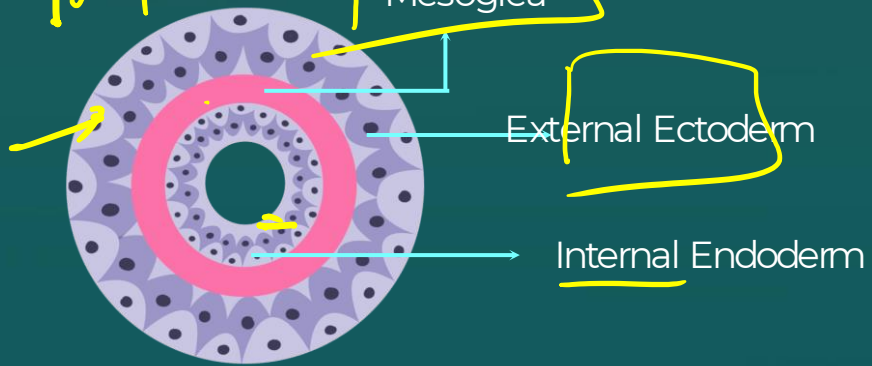
Phylum Coelenterata

Phylum Coelenterata	
Habitat	Aquatic habitat (mostly marine)
Level of organization	Tissue
Body symmetry	Radial
Germ layer	Two germ layers
Coelom	Acoelomate
Segmentation	Unsegmented

Phylum Coelenterata

- Also known as **Cnidaria**: presence of stinging cells called **cnidoblasts**
- Includes more than 9000 species
- Found in aquatic habitat; mostly marine and few fresh water (*Hydra*)





Radial symmetry (*Hydra*)

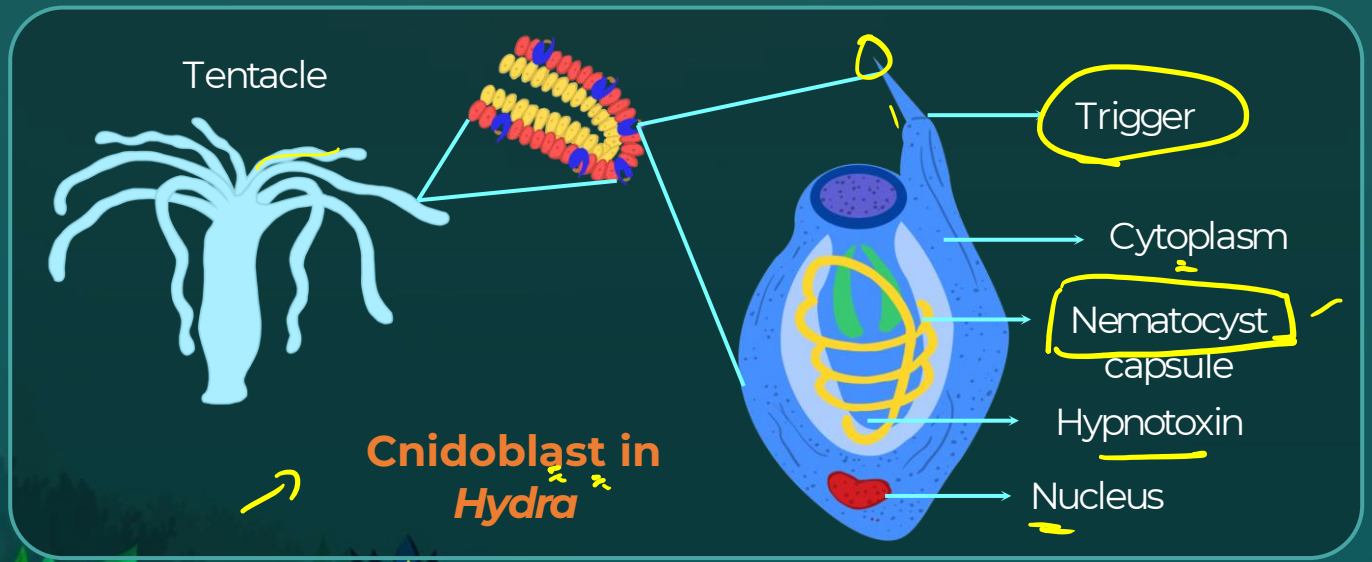
Diploblastic

Phylum Coelenterata

In Cnidaria the tentacles are:

- Armed with **cnidoblasts** which contain **hypnotoxin**
- Functions- **a) Defence** **b) Capture prey**

Shaft capsule. Thread like tube



Cnidoblast in *Hydra*

Phylum Coelenterata

- Some cnidarians are **sessile (*Adamsia*)** and some are **free swimming (*Physalia*, *Aurelia*)**

Adamsia

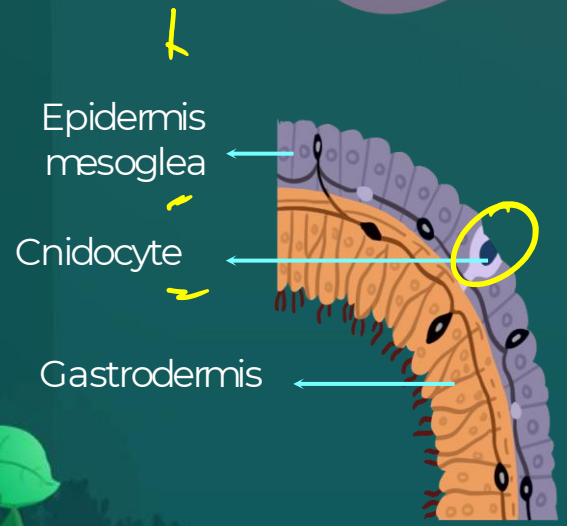
Aurelia

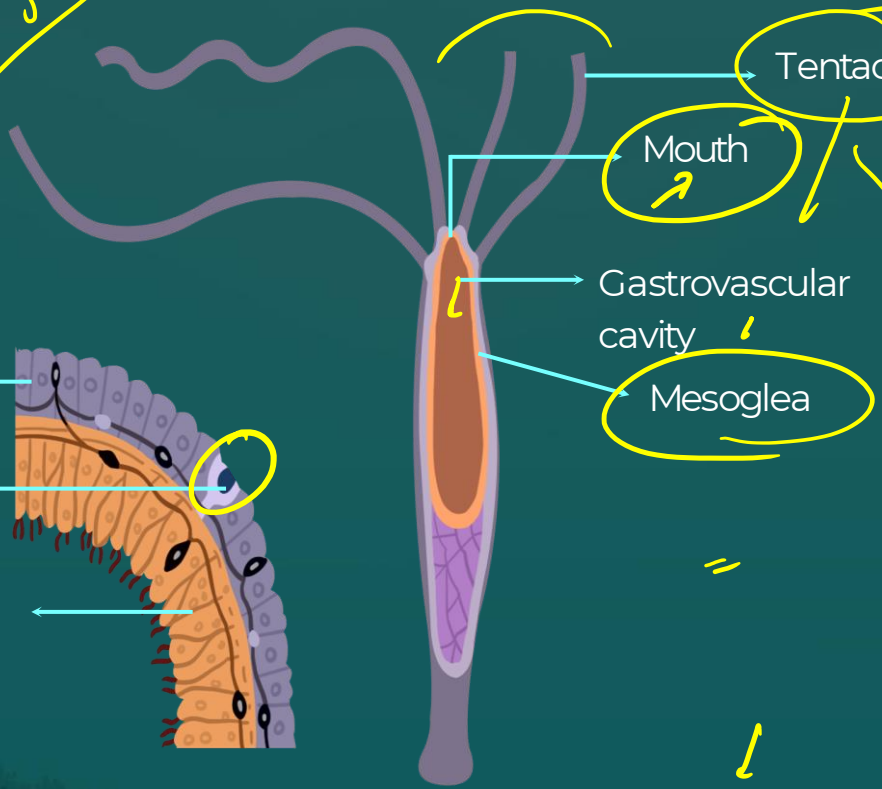
Phylum Coelenterata

Hard exoskeleton. Calcium carbonate

Australian Great Barrier Reef

Phylum Coelenterata





Have a central gastrovascular cavity with a single opening, mouth or **hypostome.**

Cross Section of *Hydra*

Phylum Coelenterata

Imp

Basic body forms

Asexually.

sexually

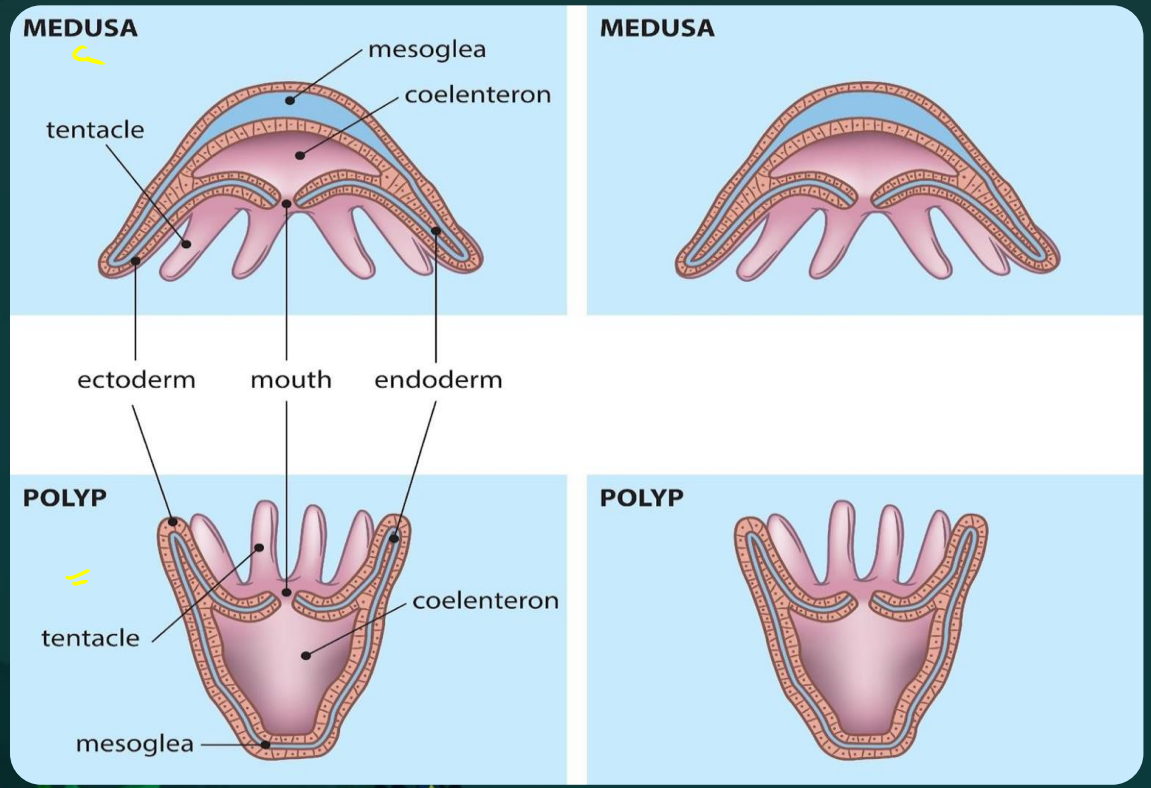
Polyp

- Sessile, cylindrical forms
- Produced sexually by medusa
- Eg- *Hydra*, *Adamsia*, Corals

Medusa

- Umbrella shaped and free swimming
- Produced asexually by polyps
- Eg- *Aurelia*

Phylum Coelenterata

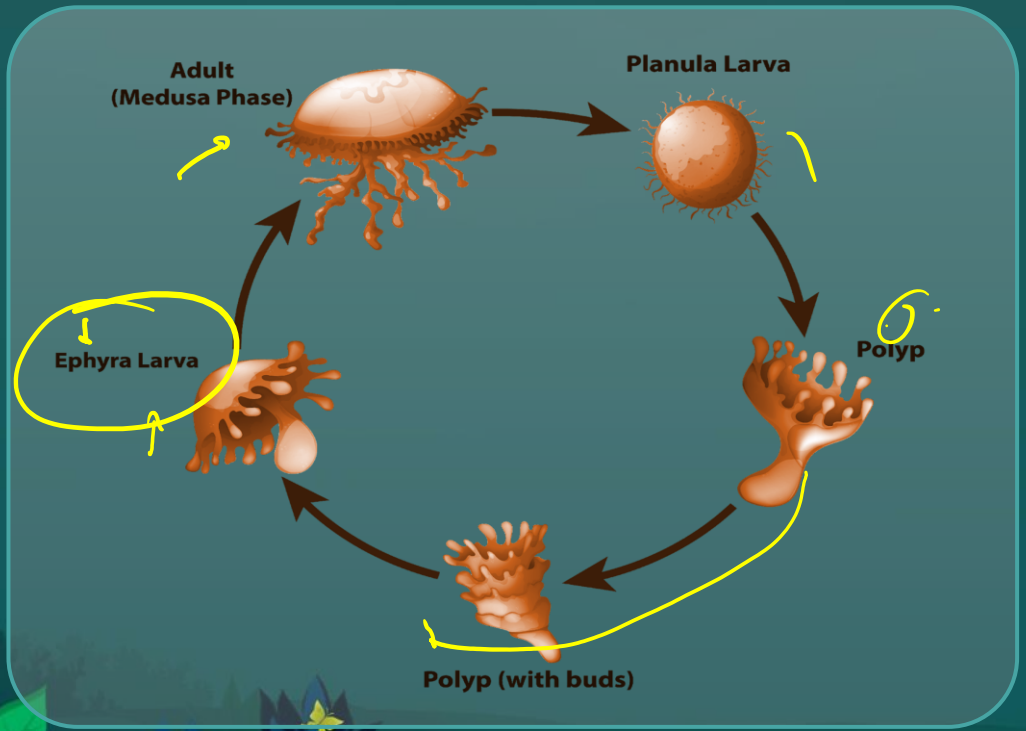


Phylum Coelenterata

- **Metagenesis**: **Alternation of generation** in Cnidaria
- Reproduction:
  - **Asexual - budding** or **fission**
  - **Sexual** - **gamete formation**
- Fertilisation: **External or internal**
- Development is **indirect** through a free swimming planula larva

Phylum Coelenterata

- **In metagenesis**, polyps reproduce asexually to form medusae and medusae reproduce sexually to form the polyps (*Obelia*)



Phylum Coelenterata

Examples :

Pennatula
(Sea-pen)

Meandrina
(Brain coral)

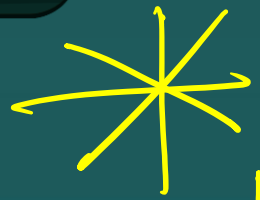
Gorgonia
(Sea-fan)

Adamsia
(Sea anemone)


Phylum
Ctenophora

Phylum Ctenophora

Phylum Ctenophora	
Habitat	Exclusively marine
Level of organization	Tissue
Body symmetry	Radial
Germ layer	Two germ layers
Coelom	Acoelomate
Segmentation	Unsegmented

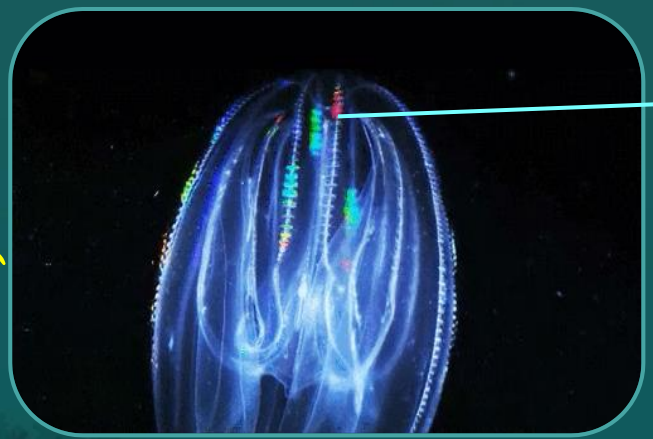


Diploblastic

Phylum Ctenophora

Characteristic features

- Exclusively marine
- **Bioluminescence :** Property of a living organism to emit light



Ctenophore exhibiting bioluminescence

Phylum Ctenophora

Characteristic features

- Radially symmetrical
- Diploblastic

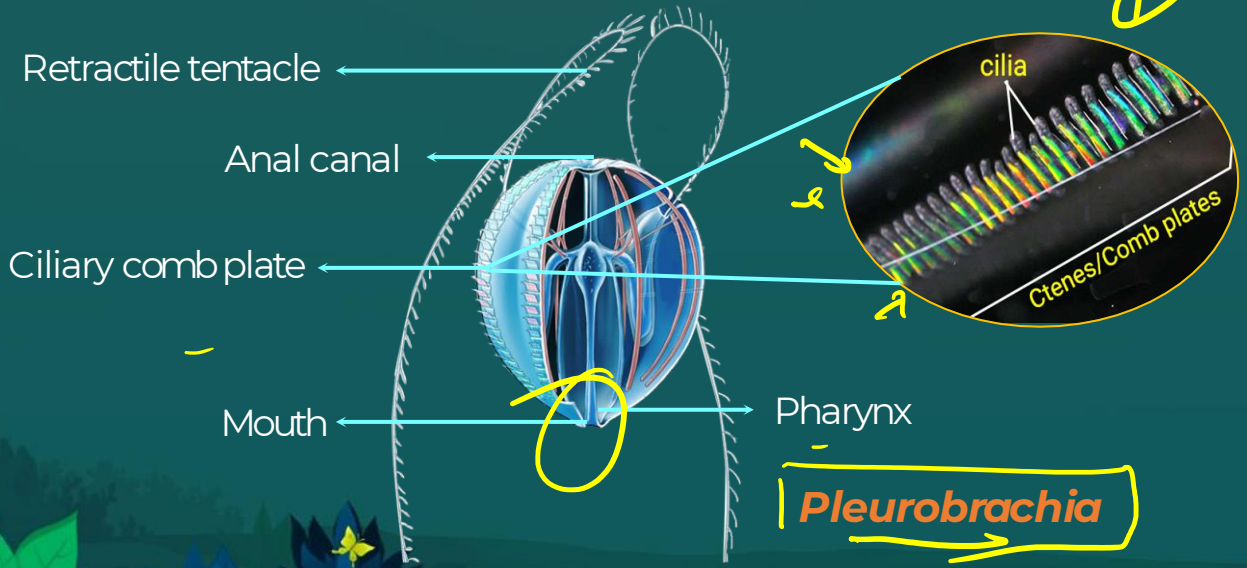
Phylum Ctenophora

Characteristic features

- Sexes not separate: **Hermaphrodite**
- Reproduction: **Only sexual**
- Fertilisation: **External**
- The development is **Indirect**

Phylum Ctenophora

- 8 external rows of ciliated comb plates
- **Ciliated comb plates** used for locomotion
  - Hence, they are also called comb jellies

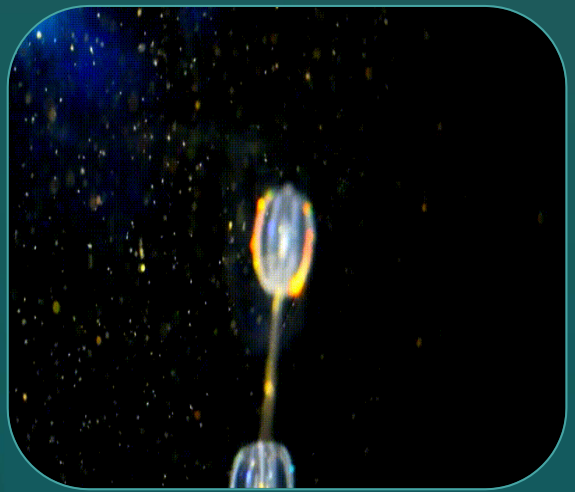


Pleurobrachia

Phylum Ctenophora

Mon & Wed
6 PM

- Examples: ***Pleurobrachia*** **(sea gooseberry),** ***Ctenoplana*****,** ***Hormiphora*** **(sea walnut),** ***Cestum*** **(Venus girdle)**

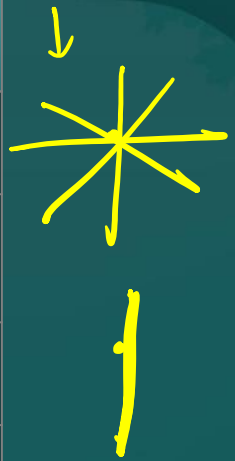


Pleurobrachia

Ctenoplana

Summary

	Phylum Coelenterata	Phylum Ctenophora
Habitat	Aquatic habitat (mostly marine)	Exclusively marine
Level of organization	Tissue	Tissue
Body symmetry	Radial	Radial
Germ layer	Two germ layers	Two germ layers
Coelom	Acoelomate	Acoelomate
Segmentation	Unsegmented	Unsegmented
Reproduction	Asexual - budding or fission Sexual - gamete formation	Sexual
Fertilisation	External or internal	External
Development	Indirect	Indirect



Past Year Question

Which one of the following living organisms completely lacks a cell wall? (NEET 2014)

A. Cyanobacteria

B. Sea-fan (*Gorgonia*)

C. *Saccharomyces*

D. Blue-green algae

Which one of the following living organisms completely lacks a cell wall? (NEET 2014)

A. Cyanobacteria

B. Sea-fan (*Gorgonia*)

C. *Saccharomyces*

D. Blue-green algae

Discussion

Gorgonia (sea-fan)	Belongs to the kingdom Animalia and phylum Cnidaria. Animal cells **lack a cell wall**
Cyanobacteria/blue-green algae	Cell wall is composed of **peptidoglycan**
Saccharomyces (yeast)	Cell wall is composed of **chitin**


Keep
Learning!