

Topic: Morphology and Life history of Obelia

Class: B.Sc Part –I (Hons.)

Paper- I

Group – A

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Nutrition

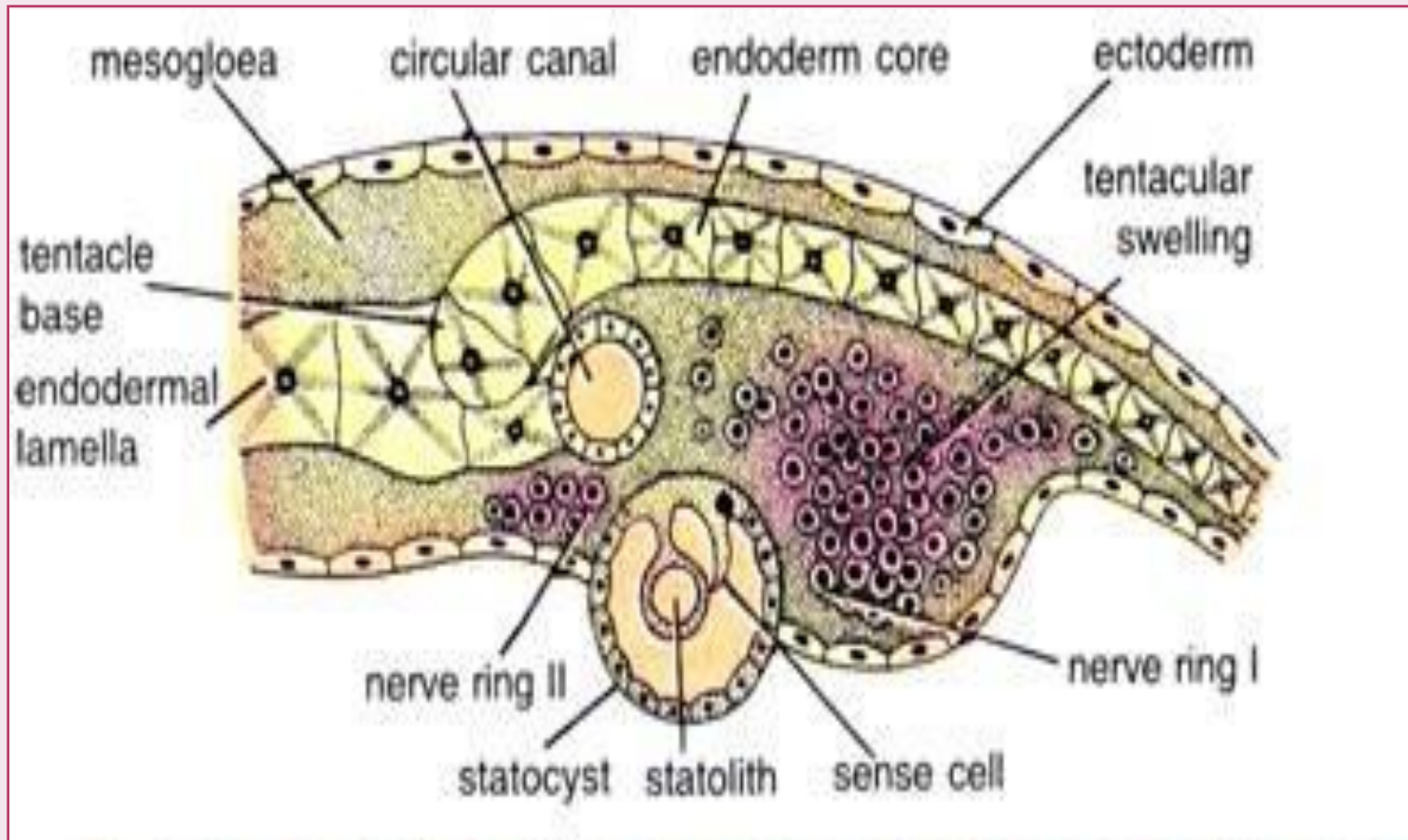
- Medusae are carnivorous and the processes of their nutrition are essentially the same as in the polyp.
- The food consists of living animals or bodies of animals.
- Digestion is both extracellular and intracellular.
- Extracellular digestion occurs in the main part of the gastro vascular cavity and is purely proteolytic.
- Hyman (1940) has shown that although food particles are distributed throughout the gastro vascular cavity, most intracellular digestion takes place in the manubrium, in the stomach and in tentacular bulbs.
- The digested food is distributed to the entire medusa through the system of radial and circular canals.

Muscular system:

- The muscular system of medusa is somewhat more specialised than in the polyp.
- The gastro dermal cells lack contractile extensions, and the muscular system is, thus, restricted to the epidermal layer.
- Furthermore, the muscular system is best developed around the bell margin and sub umbrella surface where the fibres form a radial and circular system.

- Some of the epitheliomuscular cells of the velum have their contractile extensions oriented to form a powerful circular band of fibres which are striated.
- The contractions of the muscular system, particularly of circular fibres produce pulsation of the bell.
- The swimming movement of the medusa is dependent base on these pulsations and is largely vertical in lamella direction.
- Horizontal movement is dependent upon water currents.

Obelia: L.S. of the base of an adradial tentacle of medusa



Nervous System

- The nervous system of medusa is more highly specialised than that of the polyp.
- In the margin of the bell, the epidermal nerve cells are usually organised and concentrated into two nerve rings, one above and one below the attachment of the velum.
- The nerve rings connect with fibres innervating the tentacles, the musculature, and the sense organs. Fibres also interconnect the two

- Fibres also interconnect the two rings.
- The lower ring is the centre of rhythmic pulsations, i.e., it contains the pacemakers. Pulsation will continue in the bell as long as any portion of the ring is intact.
- It is with the lower ring that the statocysts are connected.