

المحاضرة التاسعة \ شعبة شوكية الجلد \ المرحلة الثانية  
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## Lecture 9 \ Echinodermata Phylum

Star Fish or Sea Star نجم البحر

- 1 – Echino . = spines , Derma = skin \\ spine – bearing calcium rich plates .
- 2 - Radially symmetrical animals .
- 3 - Its larva bilateral symmetry and filter feeder .
- 4 – Sea stars are commonly found along the rocky coasts and sea depth \ no in fresh water , no terrestrial .
- 5 – Spiny skin , Spines project from the endoskeletal plates offer some protection , the skeleton is made of Calcium carbonate .
- 6 – Respiration occur by gills and by vascular system exchange gases .
- 7 - Mostly feed on bivalve animal ( Oysters ) cause crack in the shell and pull its soft tissues
- 8 - On the oral surface each arm has a groove lined by little tube feet

**9 – Radial Nervous system consists of central nerve ring , that gives off nerves in each arms .**

**10 - Eye \ Light sensitive eyespot at the tip of each arm .**

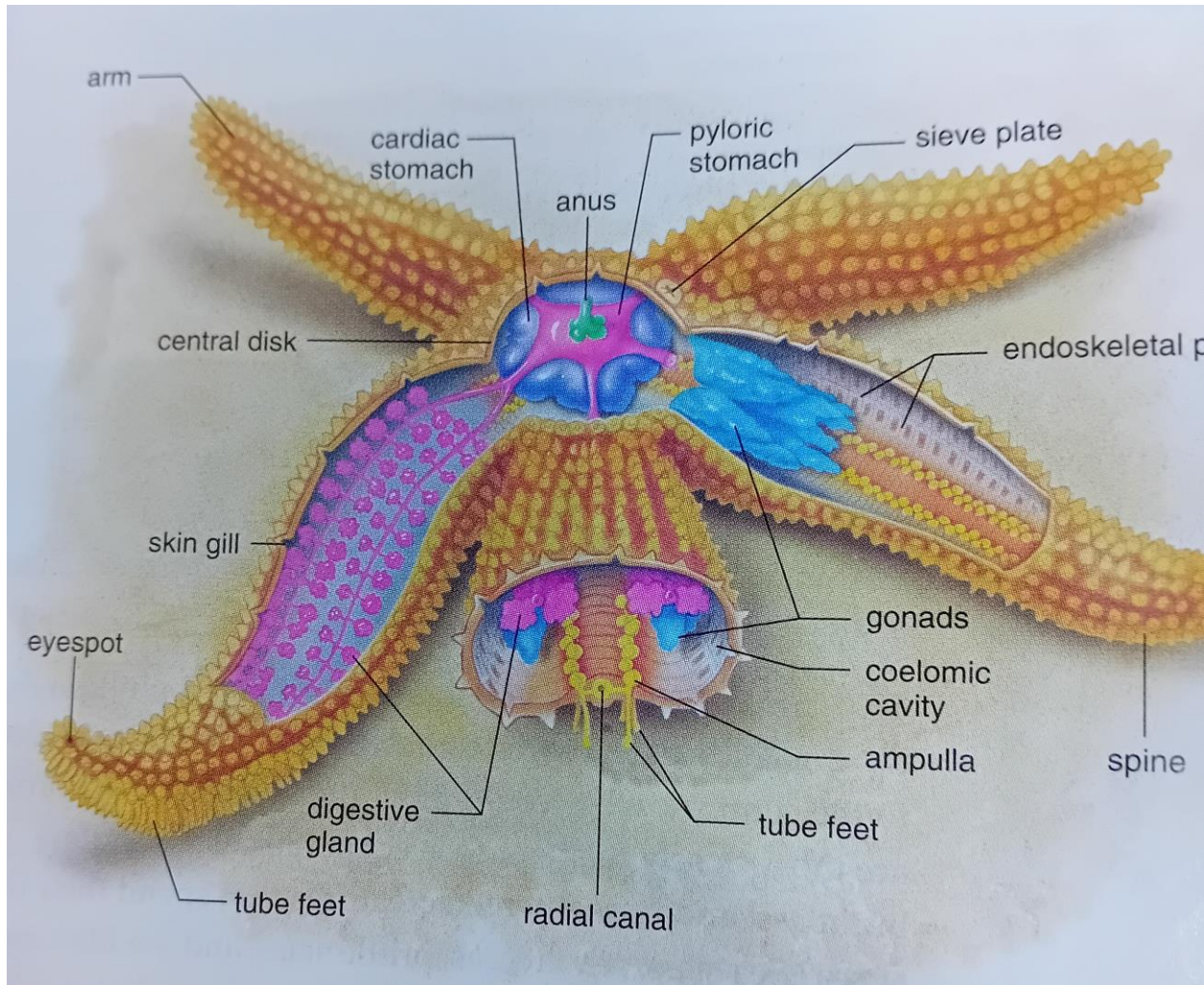
**11 – Mouth on ventral side while the anus on the dorsal side .**

**12 - Body have central disc with 5 arms ( some species have more than 5 ) No head .**

**13 - Bright coloured sea star ( red , orang , blue , grey , brown ) .**

**14 – Gonads ( testis and ovary ) either male or female open on the dorsal surface .**

**15 – Sea star reproduce sexually and asexually , sexually sea stars release sperm and eggs while asexually If the fragments , each fragment can regenerate whole animal .**



**16 – Stomach digest food in each arm by digestive glands and short intestine open in anus .**

**17 - Locomotion depend on the water vascular system which is enters through sieve plate to the radial canal in each arm .**

