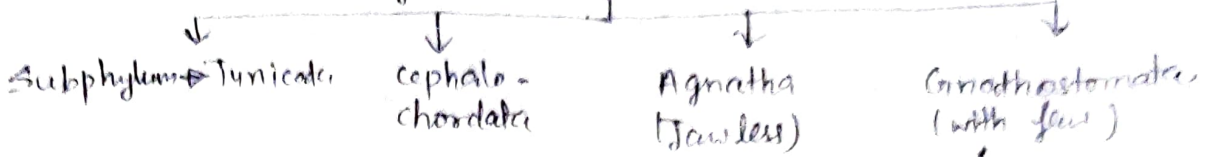


Fishes classification upto class:

Introduction:-

Systematically,

Phylum Chordata



Superclass →

Pisces

- Paired fin, gills
- Skin with scale

- Tetrapoda
- Paired limbs
 - Lungs
 - Cornified skin
 - Bony skeleton

Class →

Placodermi

- Ancient fishes
- Jaw primitive
- Complete gill slit before hyoid
- All extinct
- eg. Pterichthyodes.

Chondrichthyes

- Skin with placoid scale, skeleton in
- Skeleton of cartilage
- 5 to 7 pair of gill in separate clefts.
- eg. shark & ray.

Osteichthyes

- Bony fishes.
- Skin with cycloid or ctenoid scale.
- 4 pairs of gills in common cavity under opercula.
- eg. Labeo rohita.

Subclass →

Elasmobranchii Placodermi (Extinct)

- Primitive jawed fishes.
- eg. Jagorina

Holocephalii
eg. Hydrolagus (chimaera)

Acanthodii (Extinct)

Sarcopterygii
- Lung fishes (Order dipnoi) and Coelacanth (Latimeria living bone)

Actinopterygii

eg. Gambusia (Mosquito fish)
Sea horse (Hippocampus)

General organisation of Superclass Pisces:-

(1) Habit & habitat - Aquatic - either freshwater or marine.

(2) Herbivorous or Carnivorous.

(3) Cold blooded or poikilothermous.

(4) Oviparus or ovoviviparus vertebrates.

(5) Median and paired fins are usually present supported by fin rays.

(6) Skin covered with scales.

(7) Nares not connected to mouth cavity and primarily meant for olfaction.

(8) Heart two chambered, one auricle and one ventricle with sinus venosus and conus arteriosus.
Venous heart.

(9) Heart contains only deoxygenated blood. Their oxygenation takes place in gills from where these are supplied to all over the body.

(10) Many pairs of aortic arches are present. Single circulation is found. RBCs are nucleated.

(11) Respiration - By gills.
Renal, portal system is present.

- Gill slits = 5-7 pairs.

- Gill slits are either naked or covered by operculum.

(12) Muscles - Arranged in segments c/a myotomes with separate dorsal and ventral parts.

(13) Excretion -

- Mesonephros kidney.

- Ureotelic type of excretion.

(14) Nervous system -

- 10 pairs of cranial nerve.

- Brain with 5 parts.

(15) Reproduction -

- Sexes separate.

- Gonad paired.

- Gonoduct open in cloaca or independently.

- Internal or external fertilization.

- Eggs are megalecithal.

- Internal fertilization with help of claspers which is found only in chondrichthyes.

(16) Sense -

- Eyes without eyelid.

- Olfactory lobe & epithelium is well developed.

- General organisation of class chondrichthyes:-

(1) Skin - Tough, covered with minute placoid scales and mucous glands.

(2) Pelvic fin with claspers in males.

(3) Mouth is antero-ventral with enamel-capped teeth.

(4) Intestine with spiral valve.

(5) Skeleton - Cartilaginous, many vertebrae.
- Pectoral and pelvic girdle are present.

(6) Respiration -

- By 5-7 pair of gills.

- Gill cover absent.

- No air bladder.

(7) Reproduction -

- Dioecious

- Cloaca as genital opening.

- Internal fertilization

- Oviparous or ovoviparous.

- Megalecithal eggs.

- Direct development.

- General character of class Osteichthyes :-

(1) Skin with many mucous gland.

(2) Usually with scales (cycloid, stenoid or ganoid) - (surface scale) while some are scaleless.

(3) Mouth usually terminal and with teeth.

(4) Without eyelid.

(5) Skeleton - Bony mainly.

- Many distinct vertebrae.

- Tail usually homocercal i.e. caudal fin is divided into two equal halves.

(6) Respiration -

- Four pair of aortic arches, gills.

- Gills covered by operculum.

- Usually an air bladder (for swimming) is present. Air bladder becomes lung like in lung fishes.

(7) Circulation -

- Four pair of aortic arches.

- RBCs are nucleated and oval.

(8) Nervous system -

- 10 pairs of cranial nerves.

(9) Reproduction -

- Usually oviparous.

- External fertilization.

- Development direct.