Padasalai's Telegram Groups!

(தலைப்பிற்கு கீழே உள்ள லிங்கை கிளிக் செய்து குழுவில் இணையவும்!)

- Padasalai's NEWS - Group
https://t.me/joinchat/NIfCqVRBNj9hhV4wu6_NqA

- Padasalai's Channel - Group
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- Lesson Plan - Group
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- 12th Standard - Group
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- 9th Standard - Group
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PRESIDENCY HIGHER SECONDARY SCHOOL PUDUCHERRY

I. LIVING WORLD: 10 PHYLUM, 10 CLASS

1.Phylum - Porifera - Ex. Sponges.

- Marine, asymmetrical, cellular level of organization
- Have water canal system
- Ostia Spongocoel Osculum
- Choanocytes/ collar cells line in the spongocoel
- Digestion is intracellular
- Skeleton made up of spicules/ sponging fibres
- Hermaphrodite –male and female organs present on the same body.
- Reproduce asexually by fragmentation
- sexually by gametes
- Fragmentation is internal and development is indirect

  Eg. Sycon, spongilla.

2.Phylum Coelenterata (cnidaria) - Ex. Hydra

- Aquatic /marine
- Sessile(fixed) /free swimming
- Radially symmetrical
- Have cnidoblasts/ cnidocytes, stinging capsule on tentacles
- Used for defense, anchorage and to capture the prey
- Tissuelevel of organization diploblastic
- Mouth on hypostome
- Digestion extracellular and intracellular
- Corals have skeleton made of calcium carbonate.
- Exhibit 2 basic forms called polyp and medusa.
- Polyp is sessile cylindrical (hydra)
- Medusa is umbrella shaped free living (jelly fish)
- They show alternation ofgeneration (metagenesis) wherepolyp forms medusa asexually and
- medusa forms polyp sexually. Ex. Obelia

  Ex. - Hydra, Physalia, Sea anemone, Sea pen, Sea fan, Brain coral.

3.Phylum - Ctenophora (sea walnuts/comb jellies)

- Marine , radially symmetrical diploblastic
- Tissue level of organization
- Body bears 8 rows ciliated comb plates help in locomotion
- Digestion by intra and extra cellular
- Bioluminescence is well developed
- Sexes are not separate(monoecious)
- Reproduce by sexual reproduction
- Fertilizationis external and indirect development.

  Ex. - Pleurobrachia and ctenoplana

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4.Phylum – Platyhelminthes (flat worms)

- Dorso-ventrally flattened body
- Endoparasites, bilaterally symmetrical
- Organ level of organization
- Triploblastic - acoclomate
- Hooks and suckers are present
- Flame cells for excretions
- Sexes are not separate - fertilizationis internal and development is through many larval stages
- Have high regeneration capacity Ex.- Tape worm, Planaria, Liver fluke

• It is bilaterally symmetrical

5.Phylum - Aschelminthes (round worms)

- Free living, aquatic, terrestrial parasitic
- Organ system level of body organization
- Bilaterally symmetrical andtriploblastic
- Pseudocoelomate
- Digestive system is complete (mouth and anus)
- Sexes are separate (dioecious)
- Fertilization is internal and development is direct.

Ex. Ascaris, Wuchereria (filarial worm) and Ancylostoma (hookworm)

6.Phylum – Annelida (annulus little ring)

- Aquatic/terrestrial
- Freeliving/ parasites
- Organ system level of body organization
- Bilaterally symmetrical
- Triploblastic
- Metamerically segmented – coelomate
- Metameres/body is segmented
- Marine Nereis possess parapodia
- Possess longitudinal and circular muscles help in locomotion
- Closed circulatory system
- Nephridiahelp in osmoregulation and excretion
- Dioecious(sexes are separate)
- Earthworm and leeches are monoecious
- Reproductionis sexual

Eg. Nereis, Pheretima (earth worm) and Hirudinaria (blood sucking leech)

7.Phylum – Arthropoda – (jointed legs)

- Largest phylum 2/3 are insects
- Organ system level of body organization
- Bilaterally symmetrical
- Segmented andcoelomate
- Chitinous exoskeleton.
- Body has head thorax and abdomen.
- Have jointed appendages(organs for locomotion)respiratory organs are gills/book

- Open circulatory system.
- Sense organs are antennae, eye, statocysts (balance organs)
- Fertilization isinternal.
- Excretion by malpighian tubules.
- Sexes are separate (Dioecious)
- Oviparous
- Development may be direct/ indirect
- Economic importance-
  - Honey bees (*Apis*)
  - Silkworm worm (*Bombyx*)
  - Vectors. Mosquito, Housefly
  - Aquatic –crab, prawn, lobster

7.Phylum - Mollusca: (soft bodied and shelled)

- Second largest phylum
- Terrestrial and aquatic
- Organ system level of body organization
- Bilaterally symmetrical
- Triploblasticand Coelomate
- Calcareous shell and unsegmented body with head muscular foot and visceral hump
- Soft spongy layer of skin forms a mantle over the visceral hump
- Gillsfor respiration and excretion
- Head has sensorytentacles
- Mouth has file like rasping organ for feeding radula
- Sexes are separate (Dioecious)
- Oviparous
- Indirect development
  Eg. Oyster, snail, squid, devil fish

8.Phylum - Echinodermata: (spiny skinned)

- Spiny skin has exoskeleton which is calcarious ossicles
- Marine organ level of body organization
- Radially symmetrical
- Coelomate
- Triploblastic
- Mouth of the lower side and anus on the upper side.
- Have water vascular system, help in locomotion,to capture and transport of food andfor respiration
- Excretory system is absent
- Dioeciousand fertilization is external,development is indirectwith free swimming larva Ex. Starfish, sea urchin, sea lily, sea cucumber

9.Phylum – Hermichordata

- Under non chordate
- Worm like marine animals
- Organ system level oforganization
- Bilaterially symmetrical , triploblstic
- Coclomate – body has anterior proboscis , a collar and a long trunk
- Circulatory system is open type
- Respiration is through gills
- Excretory organ is proboscis gland

- Sexes are separate
- Fertilization is external
- Development is indirect

Ex. Balanoglossus

10.Phylum – Chordata (Ex: Amphioxus)

- Presence of notochord dorsal hollowspinal cord –nerve cord and paired pharyngeal gill slits
- Bilaterally symmetricalandtriploblastic
- Coelomate organ system level of organization
- Have post and tail
- Closed circulatory system

Chordates	Non chordates
1. Notochord present	1. Notochord is absent
2. Central nervous system is dorsal hollow and single	2. Central nervous system is ventral,solidand double
3. Gills are present	3. Gills are absent
4. Heart is ventral	4. Heart is dorsal
5. Tail is present	5. Tail is absent

Chordata -Urochordata,Cephalochordate and Vertebrata (protochordates)

Urochordata – notochord present in larval tail eg. Ascidia, salpa

Cephalochordate – notochord extends from head to tail eg. Amphioxus

1.Subphylum – Vertebrata:

- Possess notochord (replaced by vertebral column)
- All vertebrates are chordates but not all chordates are vertebrates(all vertebrates have vertebral column, but all chordates do not have vertebral chord).
- Ventral muscular heart
- Excretion by kidneys
- Fins / limbs for locomotion

a)Super class – Agnatha(without Jaw) Class – Cyclostomata

- Ectoparasites on some fishes.
- Elongated body with 6-15 pairsof gill slits
- Sucking circular mouthwithout jaw
- Body is devoid of scales – paired fins
- Cranium and vertebral column arecartilagi

- Circulation is closed –mariebut migrate to fresh waterfor spawning
- After spawning they die
- Larvas, metamorphosis and return to the ocean.

Ex. Lamprey,Hagfish

b)Super class - Gnathostomata(with jaw)

- Jaws are present
- Pairedlateral

Appendages There are six classes:

Class – Chondrichthyes:

- Cartilage fish, endoskeleton is cartilage
- Body is stream lined
- Pelvic fins in male with claspers
- 5-7 pairs of gills.
- No operculum
- Mouth in ventral with teeth.
- Jaws are powerful
- Air bladder is absent
- Heart is 2chambered (I auricle and one ventricle)
- Some possess electric /poison stings
- Poikilothermous(cold blooded)
- Body has placoid scales
- Unisexual
- Viviparous and fertilization is internal

Eg. Shark, sting rays.

Class – Osteichthyes - boney fish

- Endoskeletonis bone. Skin is covered by cycloid scales.
- Fourpairs of gill slits with operculum, mouth is terminal, air bladder is present and help in buoyancy.
- Heart is two chambered (I auricle and I ventricle)
- Poikilotherms (cold blooded)
- Sexes are separate ,fertilization is externalandoviparous

Ex. Angel fish, Clown fish, Rohu, Katla,Tilapia, Hippocampus.

Class – Amphibia - dual life

- Live on land and move to water for breeding
- Body has head and trunk
- Tail is in larval stage – two paires of limbs
- Digits without claws.
- Poikilotherms – eyes are with nictitating membranes
- Skin is smooth and moistwith mucous glands
- Tympanum is ear drum
- Heart is three chambered (two auricle and one ventricle)
- Respiration by gills in larva and by lungs and skin in adults.
- Digestive system

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- Urinary tract and reproductive tract open in to a common cloacal chambers and the
- Opening is called cloacal aperture.
- Sexes are separate
- Oviparous
- Fertilization is externaland development is indirect with tadpole larva

Ex. Toad, Frog

Class – Reptilia

- Skin is dry without glands.
- Covered by horny epidermal scales (scutes)
- Tympanum is small no external opening
- 12 pairs of cranial nerves
- Trunk bears two pairs of pentadactyl limbs with claws.
- Heart with three and half chambered (two auricle, one which is incompletely partitioned ventricle)
- OnlyCrocodiles have four chambered heart
- Respirationisby lungs.
- Fertilization is internal.
- Oviparous andeggiscovered by hard calcareoue shells

Ex. Snake, Tortoise, Turtle, Viper, Lizard

Class – Aves

- Streamlined body andcovered with feathers
- Jaws are modified in to beaks, teeth absent , various shapes and sizesofbeaks
- Digestive system has two structures – cropand gizzard(grinding the food)
- Forelimbs form wings.
- Hindlimbs modified for perching,swimming, running, etc.
- Voice box called syrinx is present
- Respirationisby lungs.
- Skin is dry with oil glands, at the base of tail.
- Bones are pneumatic bones (air cavities) helps to make the body light.
- Homeiothermous
- Heart is 4 chambered
- Oviparous and eggiswith calcareous shells.
- Fertilization is internal.

Ex. Pigeon, Crow, Sparrow, Ostrich.

Class- Mammalia

- Aquatic/aerial/terrestrial
- Body has head, neck, trunkand tail
- Have mammary glands in females
- External ear(pinna)is present
- Skin has sweat glands and sebaceous glands
- Heart is 4 chambered
- Respiration is by lungs.
- Body has hair
- Excretion is by kidneys (ureotelic – urea)

- Sexes are separate (or) Fertilization is Internal or external
- Viviparous(give birth young ones)
- Few are ovoviviiparous – egg laying.mammals (Platypus)
- Few are marsupials – pouched mammalswith brood pouches (Kangaroo)
- Ex. *Canis macaca, Camelus,Dolphin.*

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