

Practical 3

Aim : To study a few selected animals on the basis of their external features.

Principle : Diversity among animal kingdom is enormous. A systematic study of such a huge number of animals would not have been possible without a proper classification. Zoologists have identified sufficiently large number of animals varying from microscopic Protozoans to the giant whale. These animals have been classified on the basis of their morphological similarities and dissimilarities as well as on their phylogenetic relationships. In the present study, emphasis has been put on morphological features. The classification given at the end indicates their systematic position.

Instruments : Representative animals (slides, museum specimens, models, photographs, charts), microscope.

Specimens : (Classify according to Whittaker classification)

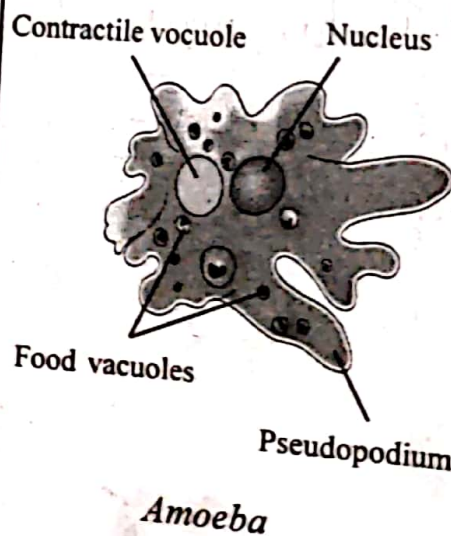
1. *Amoeba* :

Phylum : Protozoa

Class : Sarcodina

Characters :

- (i) whole body is made up of a single cell.
- (ii) Body shape is irregular with many blunt pseudopodia.
- (iii) A deeply stained nucleus of almost round shape is present.
- (iv) A contractile vacuule and several food vacuoles are present in the cytoplasm.



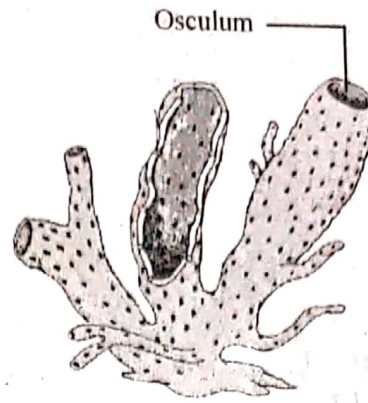
Sponges :

Phylum : Porifera

Class : Calcarea

Characters :

- (i) They are generally marine and mostly
- (ii) asymmetrical animals
- (iii) These are Primitive multicellular animals
- (iv) and have cellular level of organisation
- (v) They have water canal system.



Sponges

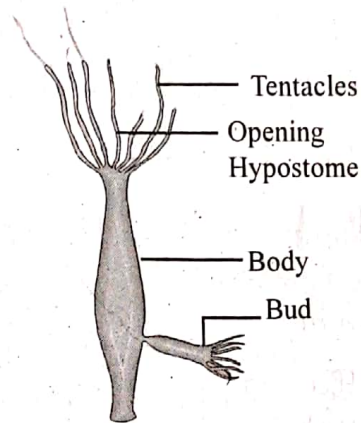
3. Hydra :

Phylum : Cnidaria

Class : Hydrozoa

Characters :

- (i) Body called Polyp is elongated and cylindrical
- (ii) long slender and contractile
- (iii) tentacles (6-10) are present that encircle hypostome with an opening at the tip.
- (iv) This end is called oral end.
- (v) some times, gonads may on body be seen as small buds



Hydra

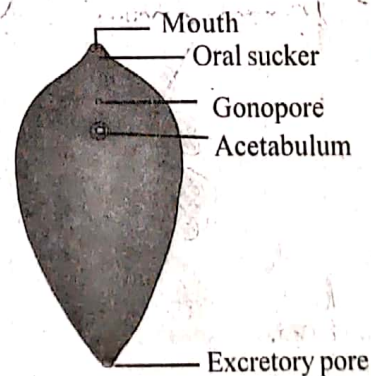
4. Fasciola - Liver fluke :

Phylum : Platyhelminthes

Class : Trematoda

Characters :

- (i) A leaf-like dorso-ventrally flattened body about
- (ii) 20-30 mm in length, and 4 to 12 mm in width
- (iii) in the middle, anterior part of the body is
- (iv) broader with a conical end. Mouth is
- (v) present at the tip of the cone. Liver fluke is bisexual



Liver fluke

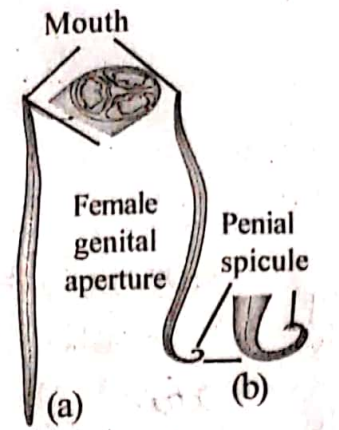
5. **Ascaris (Round worm) :**

Phylum : Aschelminthes

Class : Nematoda

Characters :

- (i) Body is 20 to 40 cm long.
- (ii) cylindrical (5 to 6 mm) diameter with no segmentation.
- (iii) sexes are separate.
- (iv) the females are longer than males. Both ends are pointed, posterior end of male is ventrally curved.
- (v) male is ventrally curved.



(a) Female

(b) Male

Ascaris

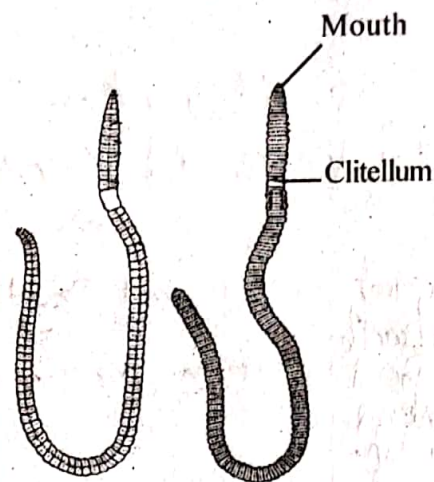
6. **Pheretima (Earthworm) :**

Phylum : Annelida

Class : Oligochaeta

Characters :

- (i) Body narrow and elongated about 150 mm in length and 3 to 5 mm in diameter.
- (ii) The anterior end of the body is pointed whereas the posterior end is slightly depressed or blunt.
- (iii) Mouth is situated ventrally in the first metamere called the Peristomium.
- (iv) The posterior end is slightly depressed or blunt.
- (v) Mouth is situated ventrally in the first metamere called the Peristomium.



(a) Dorsal view

(b) Ventral view

Earthworm

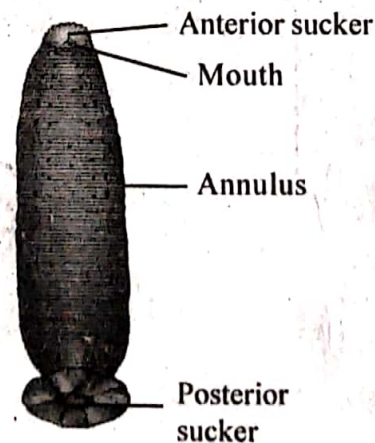
7. **Leech (Hirudinaria) :**

Phylum : Annelida

Class : Hirudinea

Characters :

- (i) The body is elongated with convex dorsal surface and flat ventral surface.
- (ii) The dorsal surface is dark green, and the ventral surface is yellowish brown.
- (iii) Size varies from 6 to 10 cm in length.
- (iv) Body surface always remains moist due to secretion of mucus from body wall.
- (v) Body surface always remains moist due to secretion of mucus from body wall.



Leech

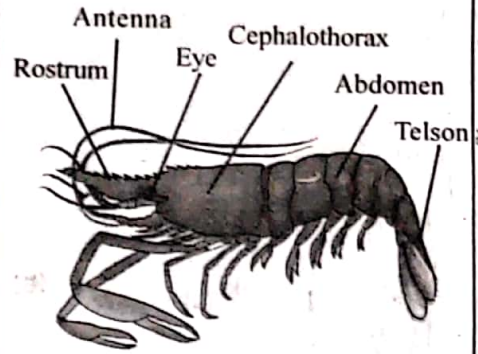
8. **Prawn (*Palaemon*) :**

Phylum : Arthropoda

Class : Crustacea

Characters :

- (i) Size of animal is variable. It measures between
- (ii) 20 and 30 cm in length usually orange-red in
- (iii) colour, however, the colour is variable.
- (iv) Body is apparently divided into anterior cephalothorax
- (v) and posterior abdomen.



Prawn

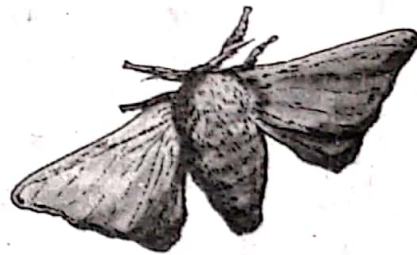
9. **Silk moth (*Bombyx mori*) :**

Phylum : Arthropoda

Class : Insecta

Characters :

- (i) Body colour is creamy white and.
- (ii) measures approximately 25 mm in length.
- (iii) Heavy and stout body is divisible into head,
- (iv) Thorax and abdomen. Head is comparatively
- (v) small. entire body and scales wings covered by microscopic



Silkmoth

10. **Honeybee (*Apis indica*) :**

Phylum : Arthropoda

Class : Insecta

Characters :

- (i) Body is divided into three distinct regions, head,
- (ii) thorax, and abdomen.

(a) Worker

- (iii) Smallest in size. Pollen-collecting baskets
- (iv) are present in thoracic legs.

(b) Queen

- (i) Largest in size (5-20 mm) in a colony of bees.
- (ii) Every colony has a single queen bee.



(a) Worker (b) Queen (c) Drone

Honeybee

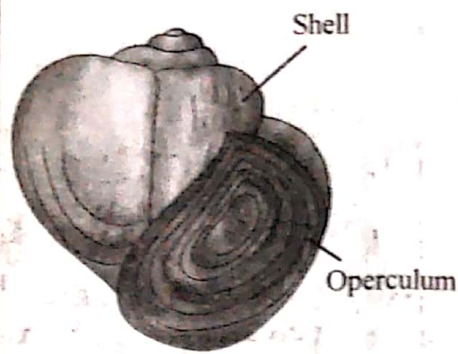
11. Apple Snail (*Pila globosa*) :

Phylum : Mollusca

Class : Gastropoda

Characters :

- (i) Body of the animal remains lodged with
- (ii) in a hard and dense piece spirally coiled
- (iii) calcareous shell.
- (iv) The body consist of four regions; head,
- (v) mantle foot, visceral mass,



Pila

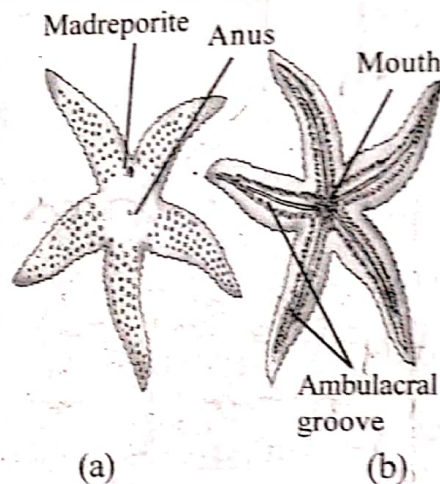
12. Starfish (*Asterias*) :

Phylum : Echinodermata

Class : Asteroidea

Characters :

- (i) It is an unique marine organism.
- (ii) It can be identified by its star-shaped Pentamerous structure.
- (iii) Body has a central disc from which five tapering arms radiate.
- (iv) The lower surface is called oral surface.



(a) Aboral view (b) Oral view
Star fish

13. Shark (*Scoliodon*) :

Phylum : Chordata

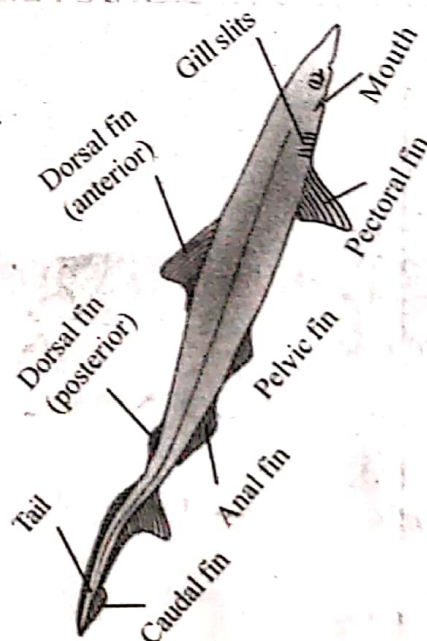
Sub Phylum : Vertebrata

Super Class : Pisces

Class : Chondrichthyes

Characters :

- (i) Body measures upto 60 cm in length.
- (ii) Body is divided into head, trunk and tail.
- (iii) Tail is elongated with heterocercal caudal fin.
- (iv) A median groove-like
- (v) cloacal aperture is situated ventrally between two pelvic fins.



Dog fish

14. Rohu (*Labeo rohita*):

Phylum: Chordata

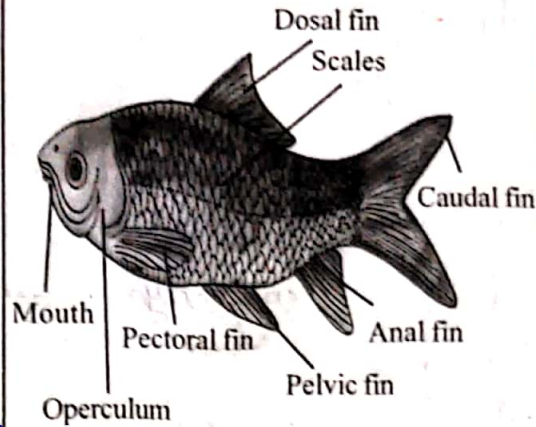
Sub Phylum: Vertebrata

Super Class: Pisces

Class: Osteichthyes

Characters:

- (i) Body is divisible into head, trunk and tail
- (ii) with homocercal caudal fin
- (iii) The margin of lower lip is fimbriated.
- (iv) The whole body is covered with overlapping cycloid dermal scales.
- (v)



Rohu fish

15. Frog (*Rana tigrina*):

Phylum: Chordata

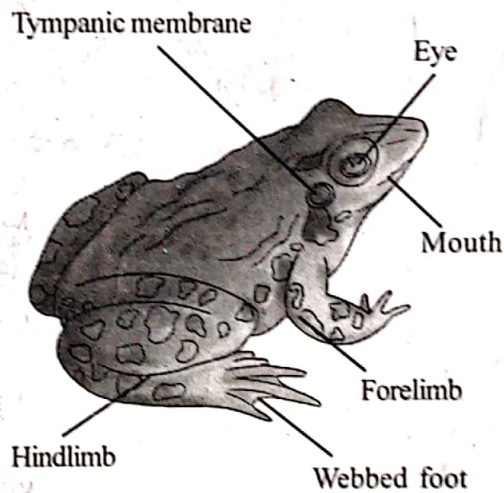
Sub Phylum: Vertebrata

Super Class: _____

Class: Amphibia

Characters:

- (i) The body consists of head and trunk, neck is absent. Skin is naked and slimy.
- (ii) Forelimbs are smaller than the hindlimbs.
- (iii) Forelimbs have 4 and hindlimbs have 5 digits.
- (iv)
- (v)



Frog

16. Garden Lizard (*Calotes*):

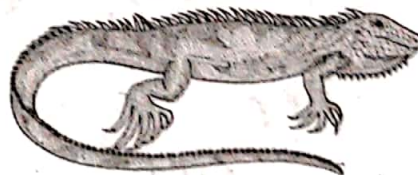
Phylum: Chordata

Sub Phylum: Vertebrata

Class: Reptilia

Characters:

- (i) Body is divided into head, neck, trunk and elongated tail.
- (ii) Body is covered with rough or chitinous scales. Two pairs of pentadactyl (five digits) limbs, the digits are clawed.
- (iii)
- (iv)
- (v)



Garden Lizard

17. Pigeon (*Columba livea*) :

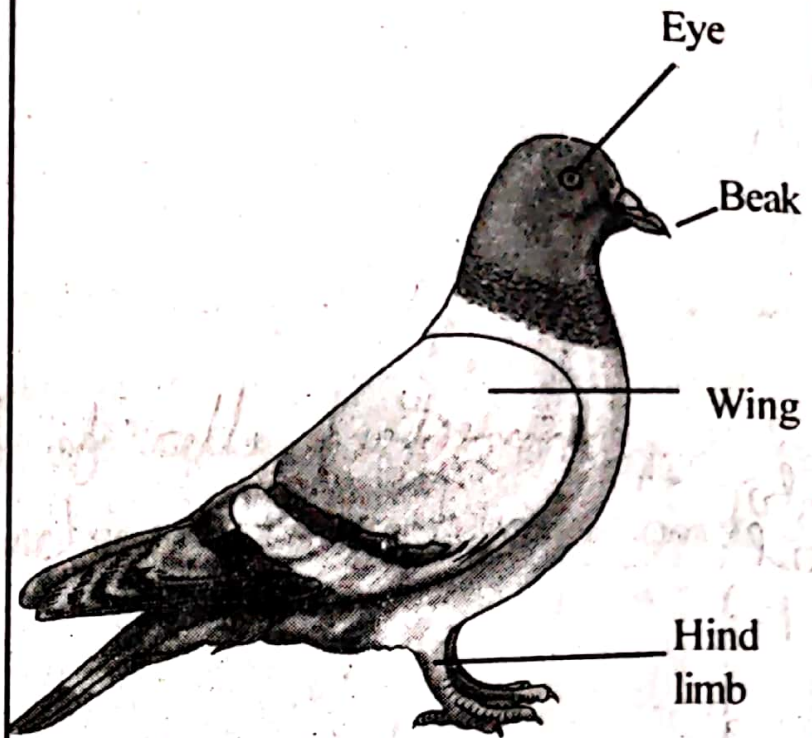
Phylum : Chordata

Sub Phylum : Vertebrata

Class : Aves

Characters : Rabbits.

- (i) Body covered with feathers.
- (ii) A small and round head, having beak
- (iii) without teeth. In addition the head
- (iv) bears a pair of nostrils, large eyes
- (v) and opening of the ears.



Pigeon

18. Rabbit

(*Oryctolagus lagomorpha*) :

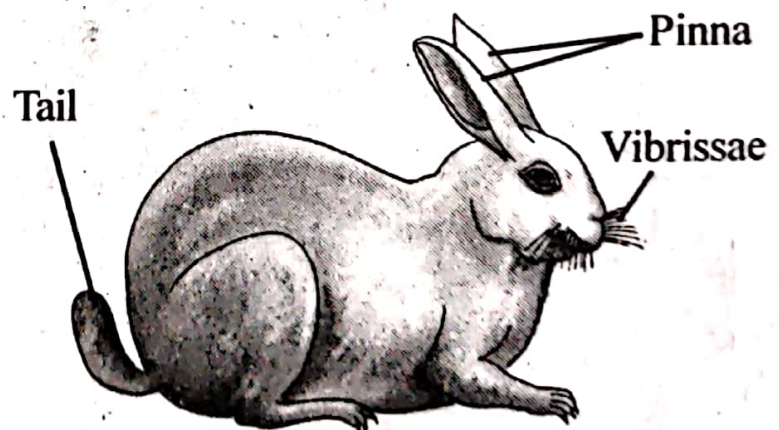
Phylum : Chordata

Sub Phylum : Vertebrata

Class : Mammalia

Characters :

- (i) A medium sized animal, about 40 cm in
- (ii) length when adult. Body is covered with
- (iii) hair, and is divisible into head, neck, trunk,
- (iv) and a small tail.
- (v) Tail is short, upwardly directed and furry.



Rabbit

Ans. : [(a) - (ii)], [(b) - (iv)], [(c) - (v)], [(d) - (i)]

Ques. 2 : What are the important differences of workers, queen and drones in honey

Ans. :

Honey bee		
Queen	Workers	Drones
<ul style="list-style-type: none"> • Largest in size • Eyes are small 	<ul style="list-style-type: none"> • Smallest in size • Eyes are large but smaller than Drones 	<ul style="list-style-type: none"> • Bigger than worker but smaller than Queen. • Eyes are very large even bigger than worker.

Ques. 3 : Mention two main differences between male and female Ascaris.

Ans. :

Male Ascaris	Female Ascaris
(i) Shorter than female	longer than males.
(ii) End is Pointed, Posterior but male is ventrally curved. (At End)	End is Pointed, Posterior and no ventrally curved. (At end).