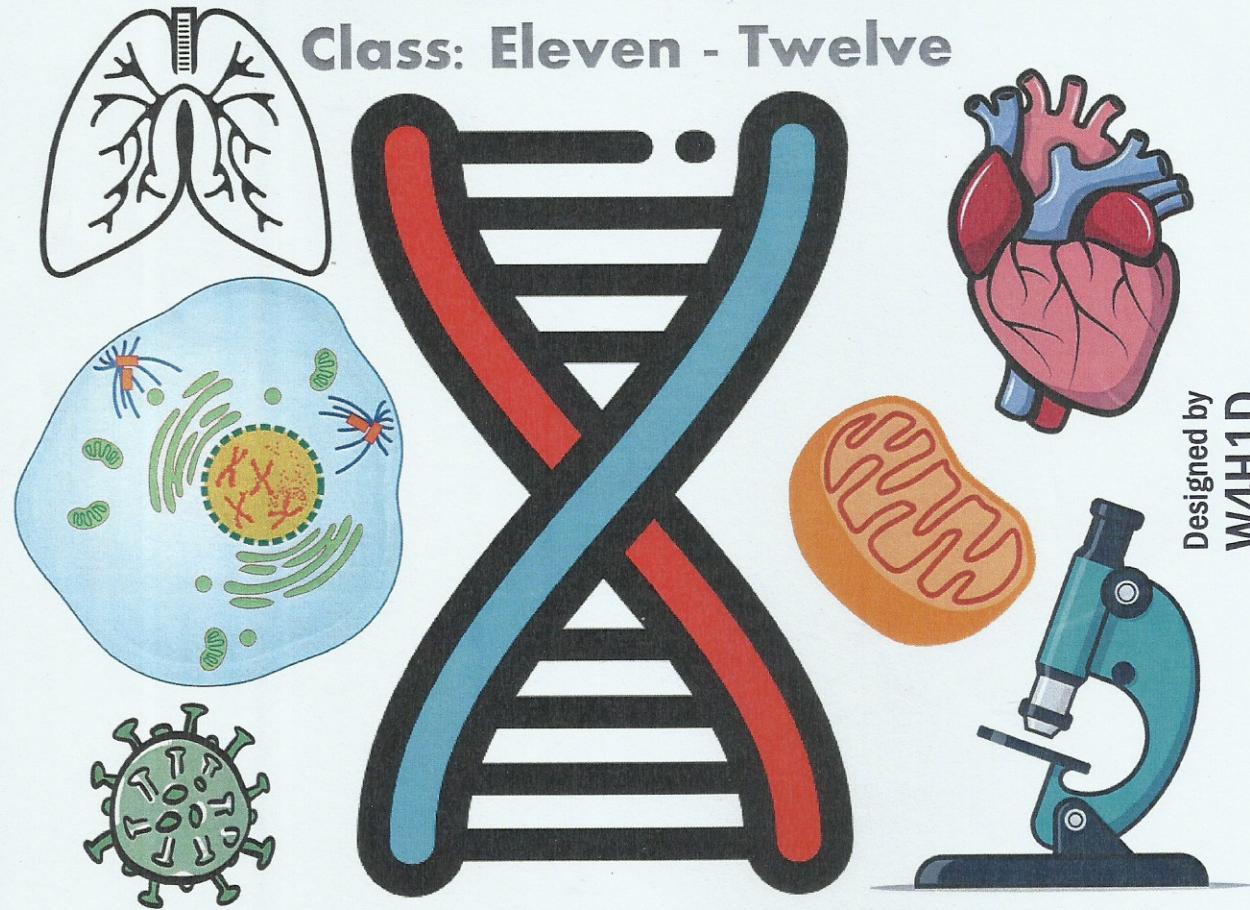


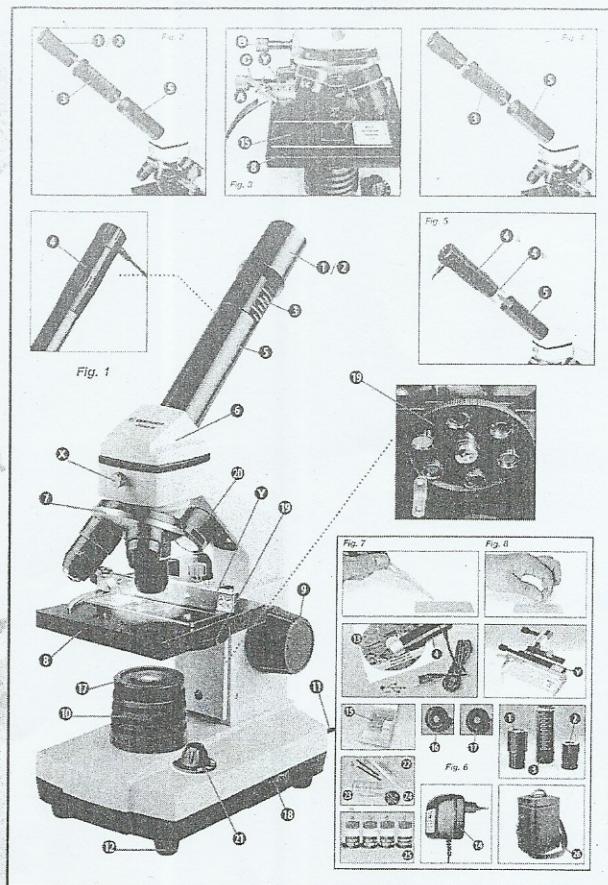
BANGLADESH SCHOOL & COLLEGE, WVHS

Sultanate of Oman
Biology 2nd Paper
Practical Notebook



Designed by
W4H1D

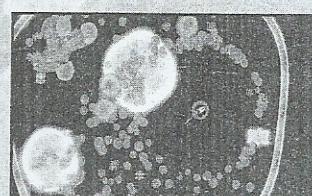
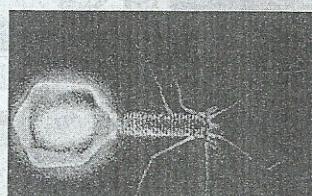
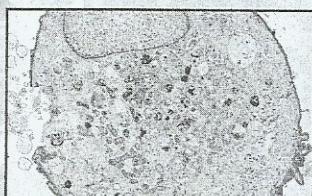
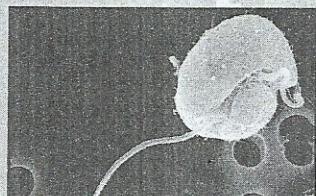
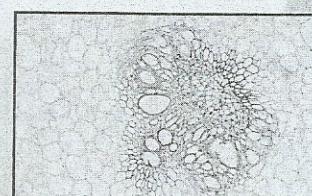
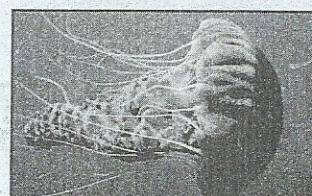
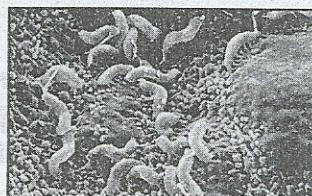
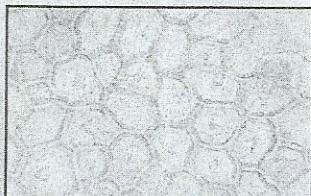
Name	Najmul Huda	
Roll no.		Reg. no.
Session	2020 - 2021	
Board	Dhaka	



BIOLOGY

ALL PARTS OF THE MICROSCOPE:

1. 5x WF Eyepiece
2. 16x WF Eyepiece
3. Barlow lens
4. PC-Ocular
5. Eyepiece holder
6. Microscope head
7. Objective revolver
8. Microscope stage
9. Focus wheel
10. LED lighting (Transmitted Light)
11. Electricity supply
12. Microscope base
13. Photomiser SE Software
14. Wall connector
15. 10 slides, 10 covering glasses
16. Matted lens
17. Condenser lens
18. Dimmer
19. Colour filter disc
20. LED lighting (Direct light)
21. Direct/Transmitted light switch
22. a) Microscopy instruments
b) Pipette
c) Pincers
23. Prawn breeding plant
24. MicroCut
25. Carrying case
- X. Locking screw
- Y. Mechanical plate



Name : Najmul Huda

School/College: Bangladesh School & College, Sylhet

Class : XII Roll : 2000

Section : Science Year : 2020 - 2021

Registration No. : _____

2nd Paper

INDEX

Sl. No.	Date	Experiments	Page No.	Initials	Remarks
01	24-03 -2022	Observation of different specimen of non-chordate phylum (any two).	01, 02		
02	25-03 -2022	Observation of supplied specimen of different classes of vertebrate (any two).	03, 04		
03	26-03 -2022	Observation of whole mount of permanent slide of Hydra (external morphology).	05, 06		
04	28-03 -2022	Observation of permanent slide of longitudinal section of Hydra.	07, 08		
05	28-03 -2022	Observation of Transverse section of Hydra.	09, 10		
06	02-04 -2022	To dissect and observe the mouth parts of locust (grasshopper).	11, 12		
07	02-04 -2022	To dissect and observe the air bladder of Ruhi/Taki fish.	13, 14		
08	02-04 -2022	Observation of permanent slide of Blood Corpuscles.	15, 16		

INDEX

This is to certify that Mr./Miss _____

a Student of _____ Class Roll No. _____ has performed the required

Number of Experiments in BIOLOGY Laboratory of _____

School/College/University as per Syllabus during the session _____

NAME OF THE EXPERIMENT

Page No. 01

Observation of different specimen of non-chondrate phylum (any two).

Exp. No. 01

Date 24/03/2022

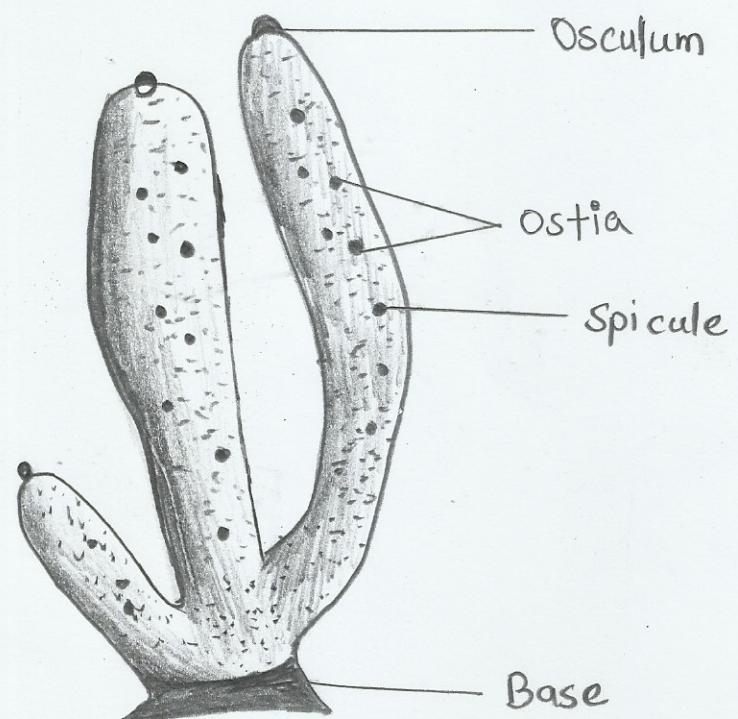


Figure: *Scypha (sycon) gelatinosum*

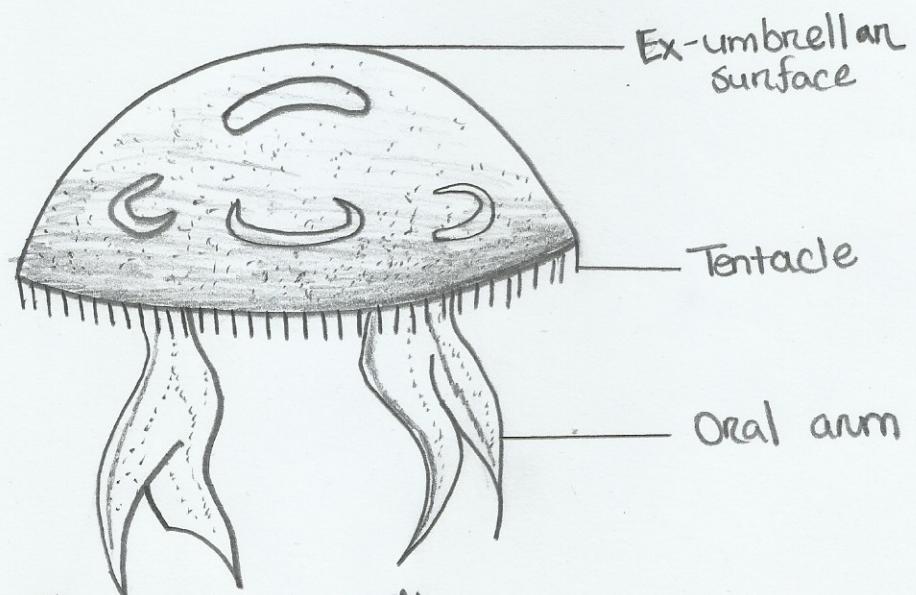


Figure: *Aurelia aurita*

Name of the Experiment : Observation of different specimen of non-chordate phylum (any two).

Page No.: 02

Exp. No.: 01

Date: 22-03-2022

1) Sypha (Sycon) gelatinosum

Classification:

Kingdom	: Animalia
Phylum	: Porifera
Class	: Calcarea
Order	: Heterocoela
Family	: Sycettidae
Genus	: Sypha (Sycon)
Species	: Sypha (Sycon) gelatinosum

Observation:

Identifying characteristics are:-

The supplied specimen bears the following characteristics:

- i) Body covered with calcareous spicules.
- ii) Numerous ostia are present throughout the body.
- iii) Syconous type of canal system
- iv) Body attached with a substratum.

Identification:

So, the supplied specimen belongs to the Phylum Porifera named Sycon gelatinosum.

Name of the Experiment :
.....

Page No.:

Exp. No.:

Date:

2) Jelly fish : *Aurelia aurita*.

Classification :

Kingdom	: Animalia
Phylum	: Cnidaria
Class	: Scyphozoa
Order	: Semaeostomae
Family	: Ulmaridae
Genus	: Aurelia
Species	: Aurita

Observation :

Identifying characteristics are :-

The supplied specimen bears the following characteristics:

- i) Bell/ saucer shaped body having four oral arms originated from around the mouth aperture.
- ii) Body is jelly like almost transparent.
- iii) Dorsal surface of the body is convex and ventral surface is concave.
- iv) Numerous tentacles are present along side the margin.

Identification :

So, the supplied specimen belongs to the Phylum Cnidaria named *Aurelia aurita*.

NAME OF THE EXPERIMENT

Page No. 03

Observation of supplied specimen of
different classes of vertebrate (any two)

Exp. No. 02

Date 25/03/2022

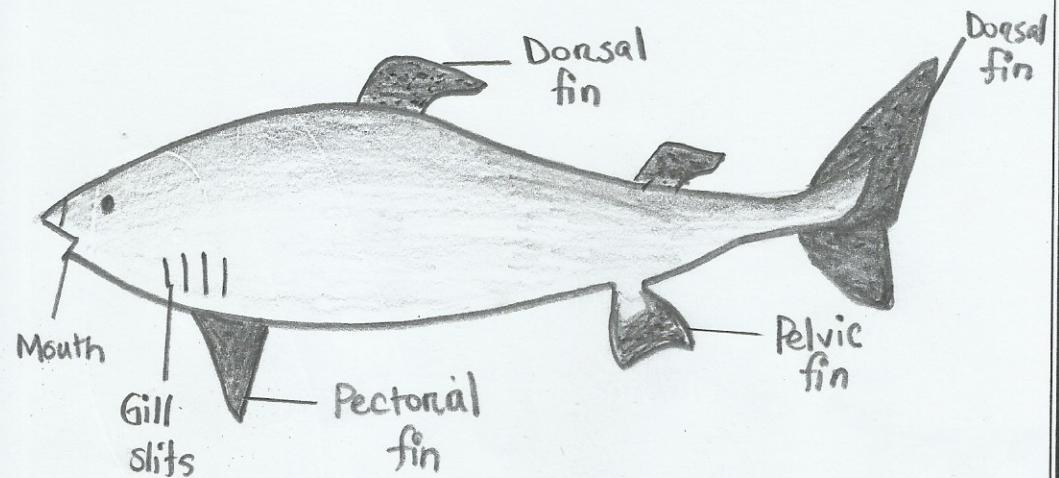


Figure: *Scoliodon sonnrai kawah*

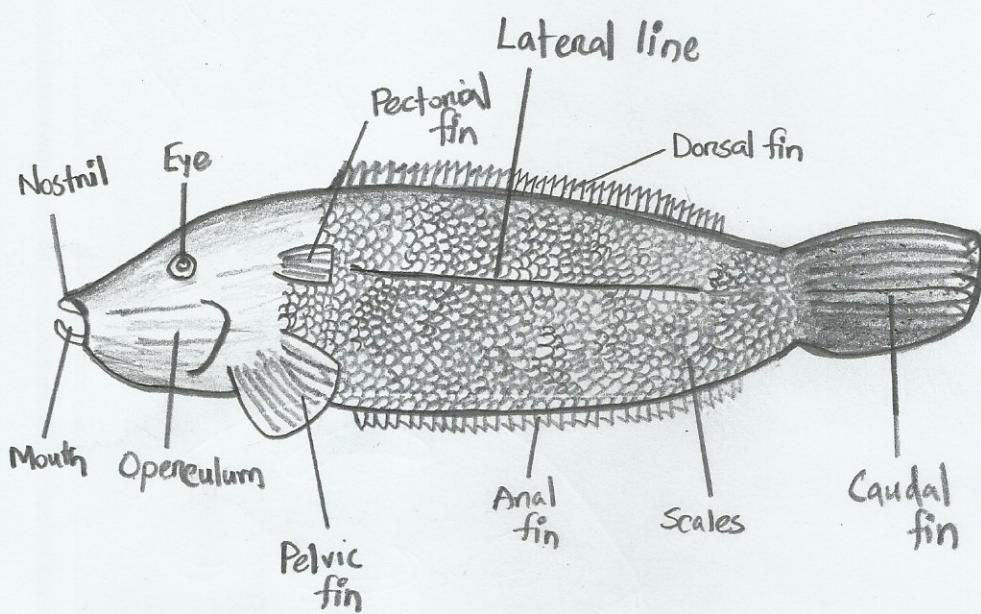


Figure: *Channa punctatus*

Name of the Experiment : Observation of supplied specimens of different classes of vertebrate (any two).

Page No.: 04

Exp. No.: 02

Date: 22-03-2022

1) Dogfish: Scoliodon Sorrikowah.

Classification:

Kingdom	: Animalia
Phylum	: Chordata
Sub-Phylum	: Vertebrata
Class	: Chondrichtyes
Order	: Squaliformes
Family	: Squalidae
Genus	: Scoliodon
Species	: Sorrikowah

Observation:

Identifying characteristics are:-

The supplied specimen bears the following characteristics:

- i) Vertebral column is present.
- ii) Lobose fins, placoid scales, heterocercal tail etc are present.
- iii) 5 pairs of gill slits are present.
- iv) Mouth is ventral.

Identification:

So, the supplied specimen belongs to the Phylum Chordata named Scoliodon Sorrikowah.

H.C.
Name of the Experiment :

Page No.:

Exp. No.:

Date:

2) Lata fish: Channa punctatus

Classification:

Kingdom	: Animalia
Phylum	: Chordata
Sub-Phylum	: Vertebrata
Class	: Osteichthyes
Order	: Ophicephaliformes
Family	: Channidae
Genus	: Channa
Species	: Punctatus

Observation:

Identifying characteristics are:-

The supplied specimen bears the following characteristics;

- i) Bilaterally symmetrical and snake headed body divided into head, trunk and tail.
- ii) Vertebral column, cycloid scale, paired pectoral and pelvic fins are present, fins are with fin rays.
- iii) Tail is homocirrate type.
- iv) 4 pairs of gills are covered by operculum.

Identification:

So, the supplied specimen belongs to the sub-phylum Vertebrata of the Phylum Chordata named channa punctatus.

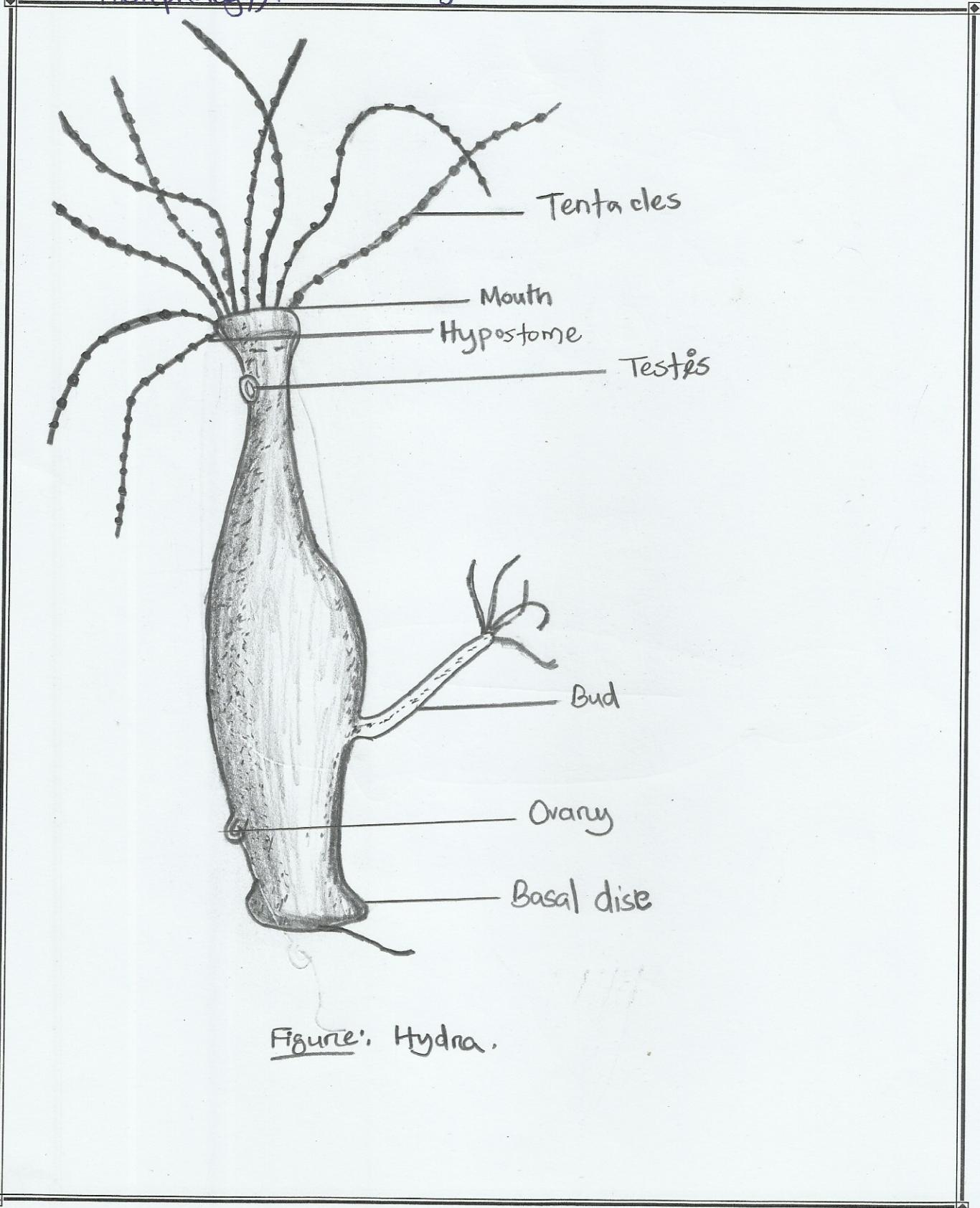
NAME OF THE EXPERIMENT

Page No. 05

Observation of whole mount of
permanent slide of Hydra (External
morphology).

Exp. No. 03

Date 26-03-2022



Name of the Experiment : Observation of whole mouth of permanent slide of Hydria
(External morphology)

Page No.: 06

Exp. No.: 03

Date: 22 - 03 - 2022

Observation:

The supplied slide/model bears the following identifying characteristics:

- i) Body long and tubular.
- ii) At the anterior end oral cone and hypostome present.
- iii) Tentacles are present around the oral cone.
- iv) At the posterior end basal disc present.
- v) Lateral buds are present in the body.

Sohail, RA

Identification:

Therefore, the supplied specimen is a whole mouth of Hydria.

NAME OF THE EXPERIMENT

Page No. 07

Observation of permanent slide of
longitudinal section of Hydra.

Exp. No. 04

Date 28-03-2022

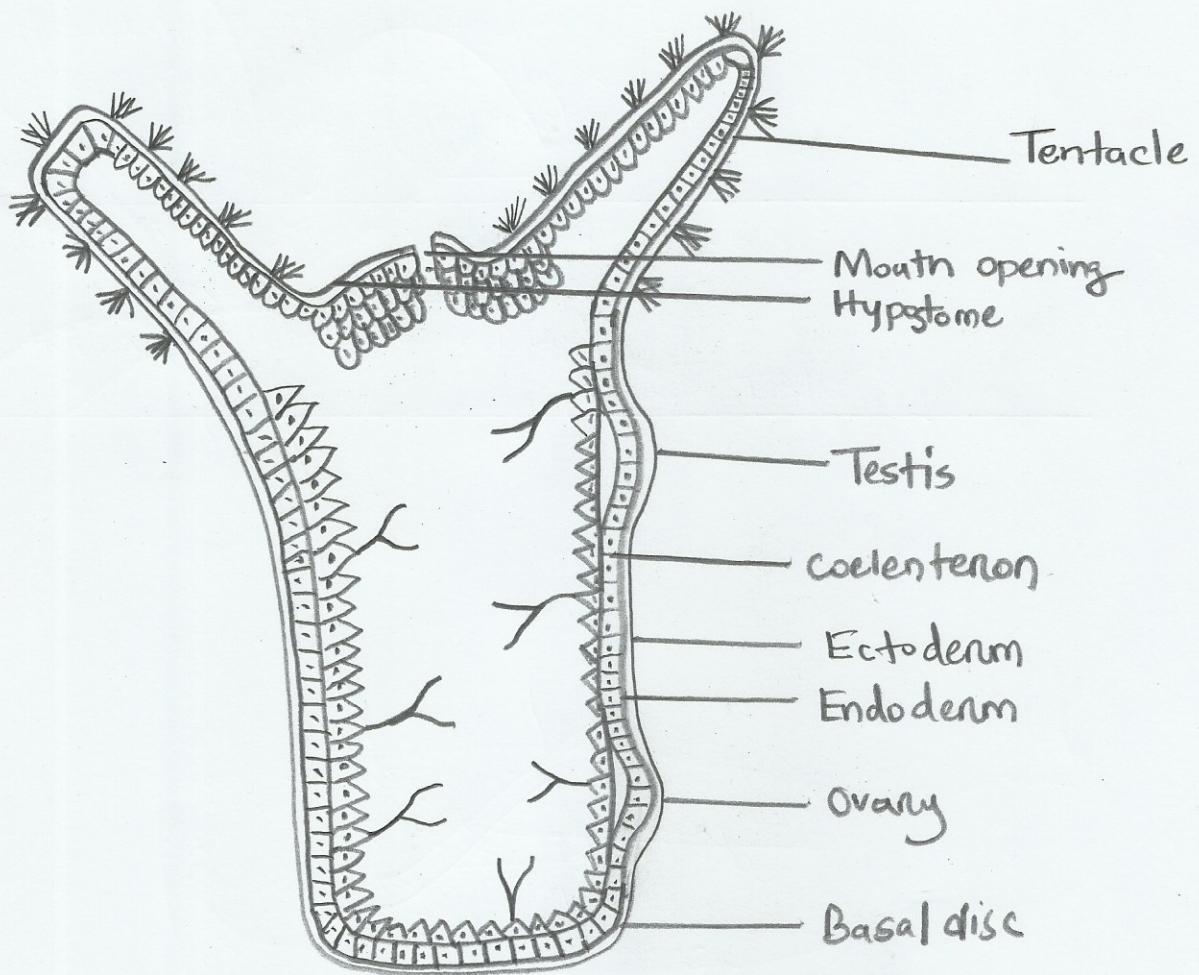


Figure: Longitudinal section of Hydra.

Name of the Experiment : Observation of permanent slide of longitudinal section of Hydra.

Page No.: 08

Exp. No.: 04

Date: 22-03-2022

Observation:

The supplied slide bears the following identifying characteristics :

- i) The animal body is diploblastic i.e. ectoderm and endoderm.
- ii) An acellular mesoglea is present in between ectoderm and endoderm.
- iii) A hollow and elongated cavity called coelenterons is present within the endoderm.
- iv) There are hypostome, mouth opening and tentacles at one end and basal disc in the other end.

Identification:

Therefore, the supplied specimen is a longitudinal section of Hydra.

NAME OF THE EXPERIMENT

Page No. 09

Observation of permanent slide of
Transverse section of Hydra.

Exp. No. 05

Date 28/03/2022

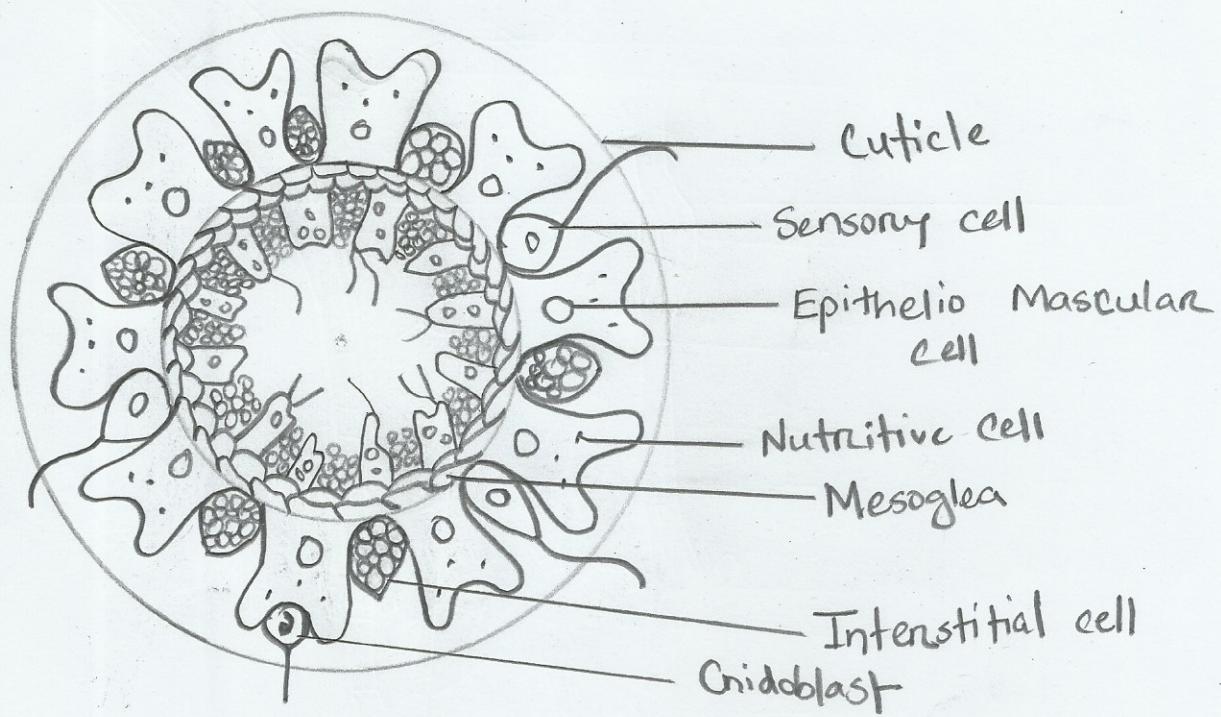


Figure : Transverse section of Hydra

Name of the Experiment : Observation of permanent slide of Transverse section (T.S.) of Hydra.

Page No.: 10

Exp. No.: 05

Date: 22-03-2022

Observation:

The supplied slide bears the following identifying characteristics :

- i) The animal body is diploblastic i.e. the outer body layer is ectoderm and the inner body layer is known as endoderm.
- ii) An acellular mesoglea is present in the endoderm and ectoderm.
- iii) Cnidoblast cells are present in the ectoderm and in the endoderm, there are pseudopodial cells.
- iv) A hollow coelenteron is present within the endoderm.

Identification:

Therefore, the supplied specimen is a transverse section of Hydra.

NAME OF THE EXPERIMENT

Page No. 11

To dissect and observe the mouth parts of locust (grasshopper).

Exp. No. 06

Date 02-04-2022

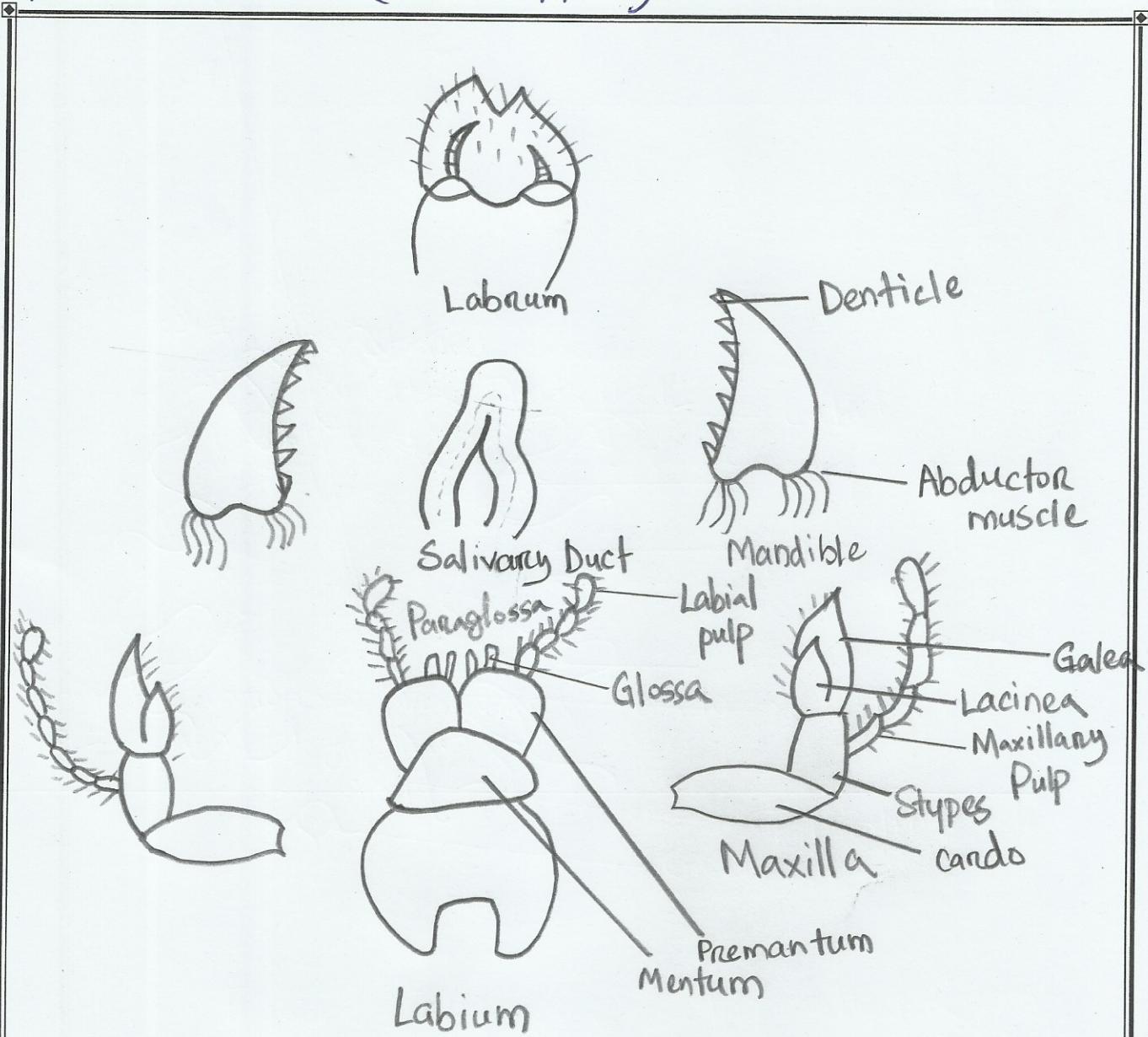


Figure: Mouth parts of Locust.

Name of the Experiment : To dissect and observe
The mouth parts of locust (grasshopper).

Page No.: 12

Exp. No.: 06

Date: 22 - 03 - 2022

Required Equipment:

A chloroformed (senseless) locust sample, dissecting tray, forceps, small brush, scissors, magnifying glass, blow pipe.

Procedure of the dissection:

- 1) Giving pressure tightly should hold the head of the supplied unconscious cockroach by fingers of the left hand.
- 2) Now by a pointed forceps, the labrum from the dorsal surface and labium, hypopharynx, maxilla and mandible from the ventral surface of the anterior part of the head should be separated respectively. Before going to separate the mandible, a pressure should be exerted lightly on the head with the help of a pointed forceps otherwise the muscles of the mandibles will be broken.
- 3) Taking a few drop of glycerin on a slide the separated mouth parts will be arranged orderly according to the figure shown in the practical book.
- 4) Observe the mouth parts of the cockroach and draw a labelled diagram.

Name of the Experiment :

Page No.:

Exp. No.:

Date:

Precaution:

- 1) The mouth parts should be pulled from the base by exerting pressure on them, otherwise they may be broken.
- 2) Microscope should be focused very carefully.

Observation:

From the dissection, it is found that, the mouth parts of cockroach are composed of the different parts:

- i) Upper lip or labrium.
- ii) One pair of mandible.
- iii) A pair of maxillae- each maxillae with cardo, stipes, lacinia and galea.
- iv) A single labium-with submentum, mentum and prementum
- v) Hypopharynx.

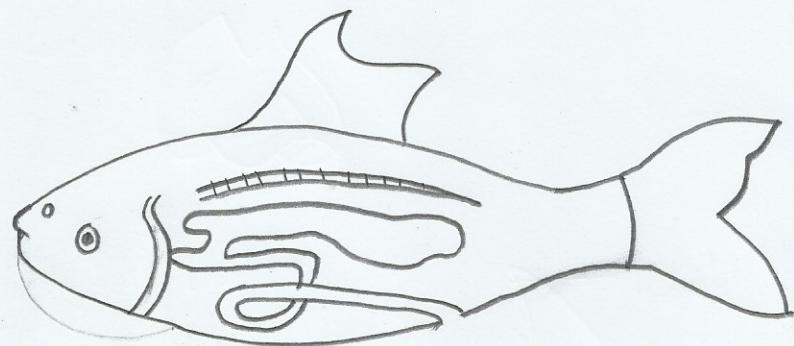
NAME OF THE EXPERIMENT

Page No. 13

To dissect and observe the air
bladder of Ruhi/Taki fish.

Exp. No. 07

Date 02-04-2022



Ruhi Fish

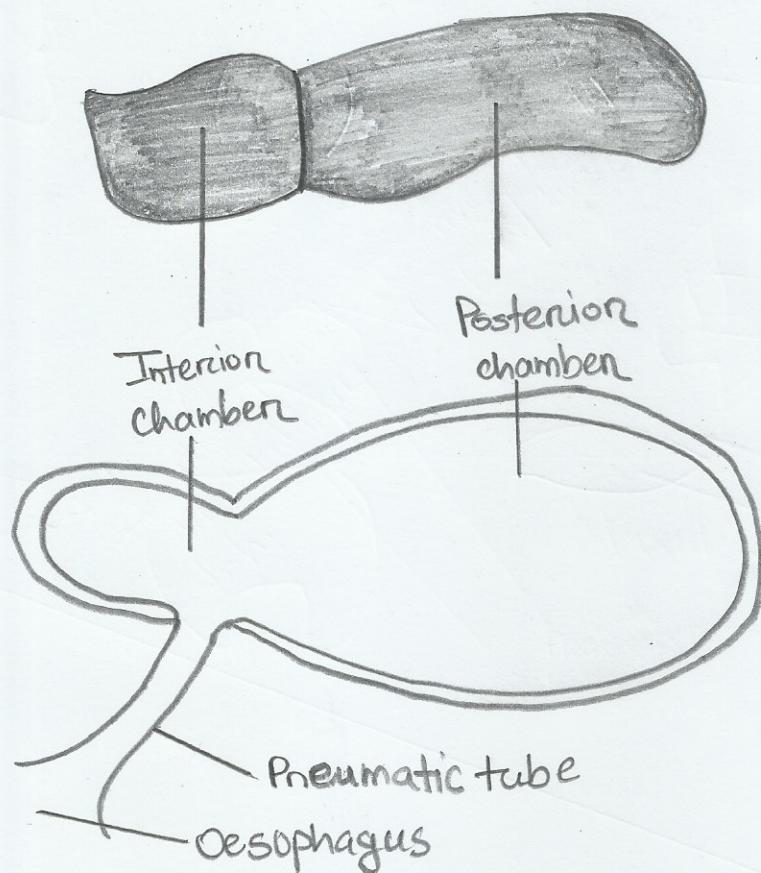


Figure: The air bladder of Ruhi fish.

Name of the Experiment : To dissect and observe the air bladder of Ruhi/Taki fish.

Page No.: 14

Exp. No.: 07

Date: 24/03/2022

Required Equipment:

Dissecting tray, chloroformated (senseless) Ruhi fish, dissecting needle, dissecting pins, forceps, scissors, small brush, microscope/ magnifying glass etc.

Dissection Procedure:

- 1) Lay down the supplied specimen on the dissecting tray with the ventral surface upward.
- 2) Make a mid-longitudinal incision in body wall with a scissors from the cloacal aperture up to the pectoral girdle.
- 3) Now cut transversely at ^{each} end of the longitudinal incision.
- 4) Fix the flaps of the muscle by pins.

Observation:

- 1) Air lies the body cavity above the intestine and ventral to the vertebral column.
- 2) It is elongated, white in color, thin walled sac filled with gas.
- 3) A transverse constriction divides the air bladder into a small anterior and larger chamber posterior.
- 4) The air bladder is connected to the oesophagus by a slender duct, the ductus pneumaticus.

Name of the Experiment :

Page No.:

Exp. No.:

Date:

Precautions:

- 1) Dissecting should be done carefully.
- 2) Magnifying glass/ microscope should be focused accurately.

NAME OF THE EXPERIMENT

Page No. 15

Observation of permanent slide of
Blood Corpuscles.

Exp. No. 08

Date 02-04-2022



Figure: Preparation of a blood smear.

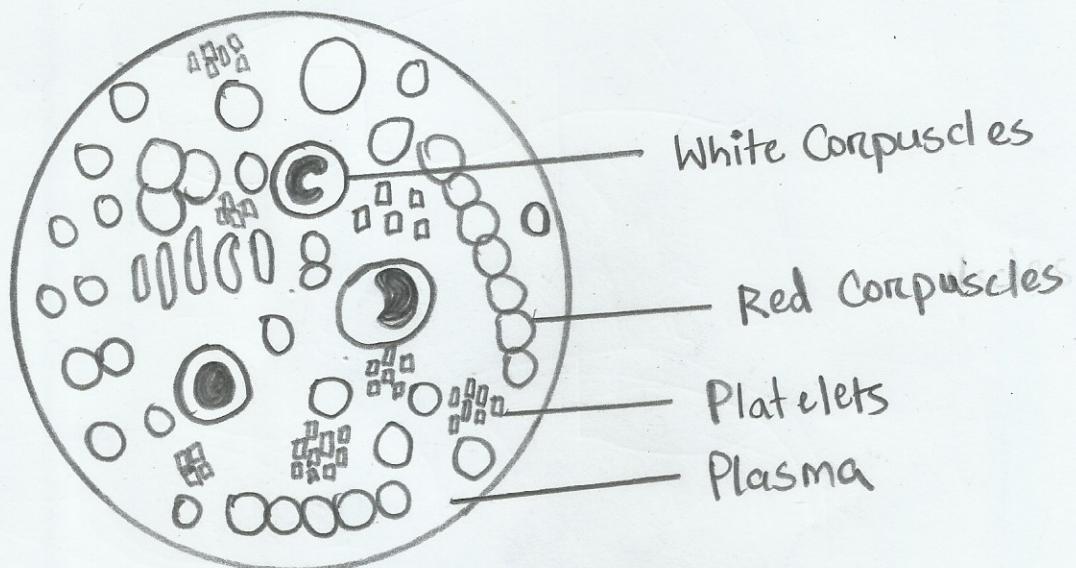


Figure:- Slide of Human blood.

Name of the Experiment : Observation of permanent slide of Blood corpuscles.

Page No.: 16

Exp. No.: 08

Date: 24/03/2022

Preparation of Blood smear:

- 1) Clean one of the fingers of your left hand with cotton soaked in alcohol.
- 2) Prick the tip of the cleaned finger with a sterile needle and squeeze the finger tip to obtain a drop of blood.
- 3) Place this drop of blood at one end of a clean dry microscope slide.
- 4) Touch the drop of blood with the edge of dry slide at an angle of 30° to 45° . The drop of blood spreads along the slides of the slide.
- 5) Move the edge of the slide as shown in figure to get a thin film of blood smear.
- 6) Leave the slide to dry. Pour 70% of alcohol on the smear for fixing and dry again.
- 7) Stain the slide with Leishman's blue or Wright's stain. After a minute or two, wash the slide with water to remove the extra stain.
- 8) Dry the slide again and observe directly under microscope.]

Observation:

The following identifying characteristics are present in the supplied specimen:

- i) Blood with plasma and three types of cells.
- ii) White blood cells (WBC) are much less common than red blood cells (RBC).

Name of the Experiment :

Page No.:

Exp. No.:

Date:

- iii) RBCs are anucleated, biconcave and rounded.
- iv) WBCs are large, irregular shape and ~~top~~ lobed nucleated.
- v) Platelets are small and anucleated.

Identification:

So, the supplied specimen is a permanent slide of human blood corpuscles.

NAME OF THE EXPERIMENT

Page No. 17

Observation of different bones of
Human body.

Exp. No. 09

Date 03/04/2022

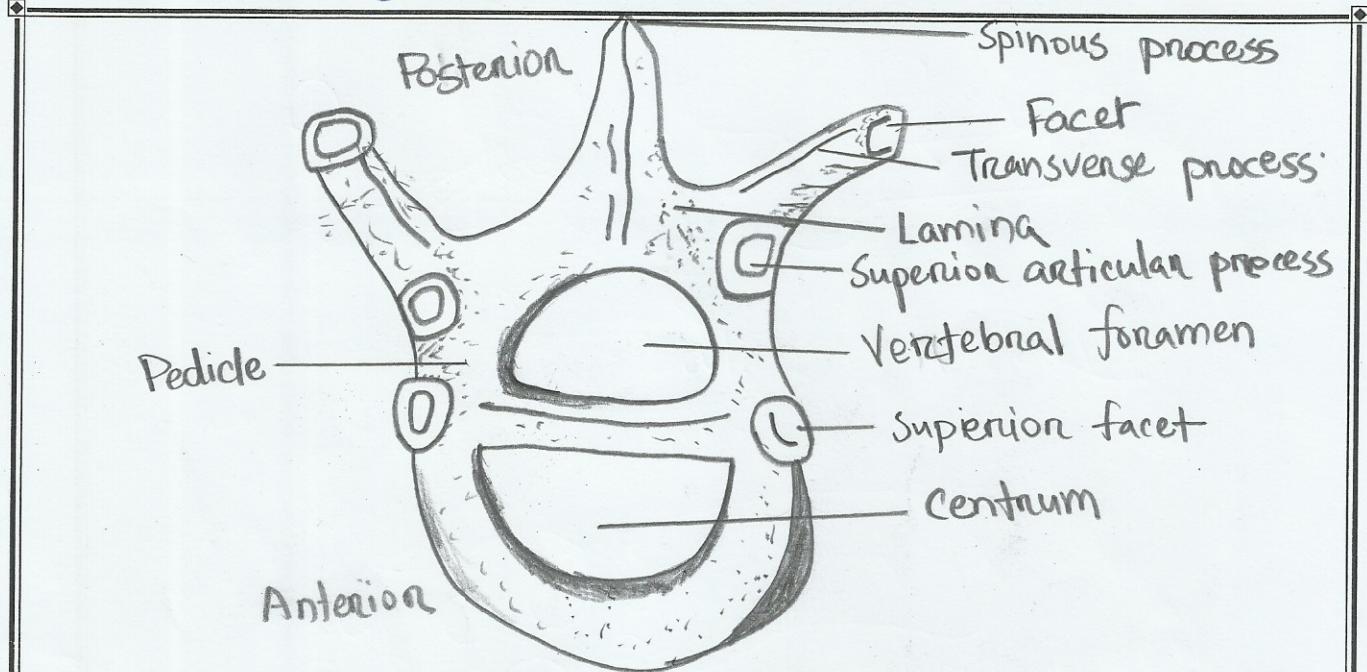


Figure: - Typical vertebra (6th thoracic vertebra).

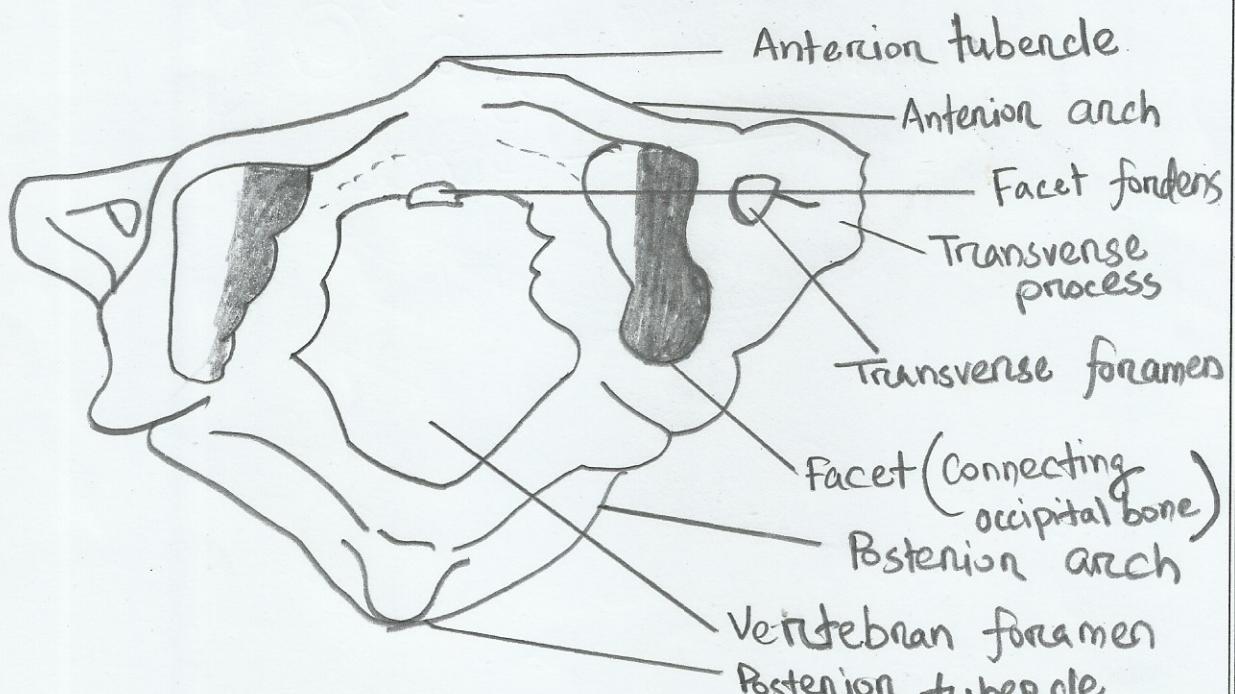


Figure: - Atlas (first cervical vertebra).

Name of the Experiment : Observation of different bones of Human body.

Page No.: 18

Exp. No.: 09

Date: 24/03/2022

1) Typical Vertebra (5th - 8th thoracic vertebra):

Observation:

The following identifying characteristics are present in the supplied specimen :

- i) A typical vertebra (figure) usually consists of centrum, neural arch, neural spine, neural canal, transverse process, facets, etc.
- ii) The solid, rigid structure centrum is the main part of the vertebra. The anterior (front) and posterior surfaces are flat. Such a vertebra is called acelous vertebra.
- iii) The facets (articulating surfaces) are two types. The two facets called prezygophyses, are present at the anterior (front) end of the vertebra, whilst two more, the postzygophyses occur at the posterior (rear) end.
- iv) Neural spine and paired transverse processes are used for muscle attachment. Neural arch encloses the spinal cond.

Identification:

Therefore, the supplied specimen is of typical vertebra (5th - 8th thoracic vertebra).

Name of the Experiment :

Page No.:

Exp. No.:

Date:

2) Atlas (First cervical vertebra):

Observation:

The following identifying characteristics are present in the supplied specimen.

- i) Ring like, centrum and spinous process absent.
- ii) Bears a short, curve and tubercle bearing anterior arch and a long, tubercle bearing posterior arch.
- iii) Two lateral compact and oval masses are present between the two arches obliquely each of which bear a reniform superior articular facet above and a circular inferior facet below.
- iv) The transverse process is long, strong, laterally extended and bears terminal tubercle.

Identification:

Therefore, the supplied specimen is of the first cervical vertebra called atlas of human vertebral column.