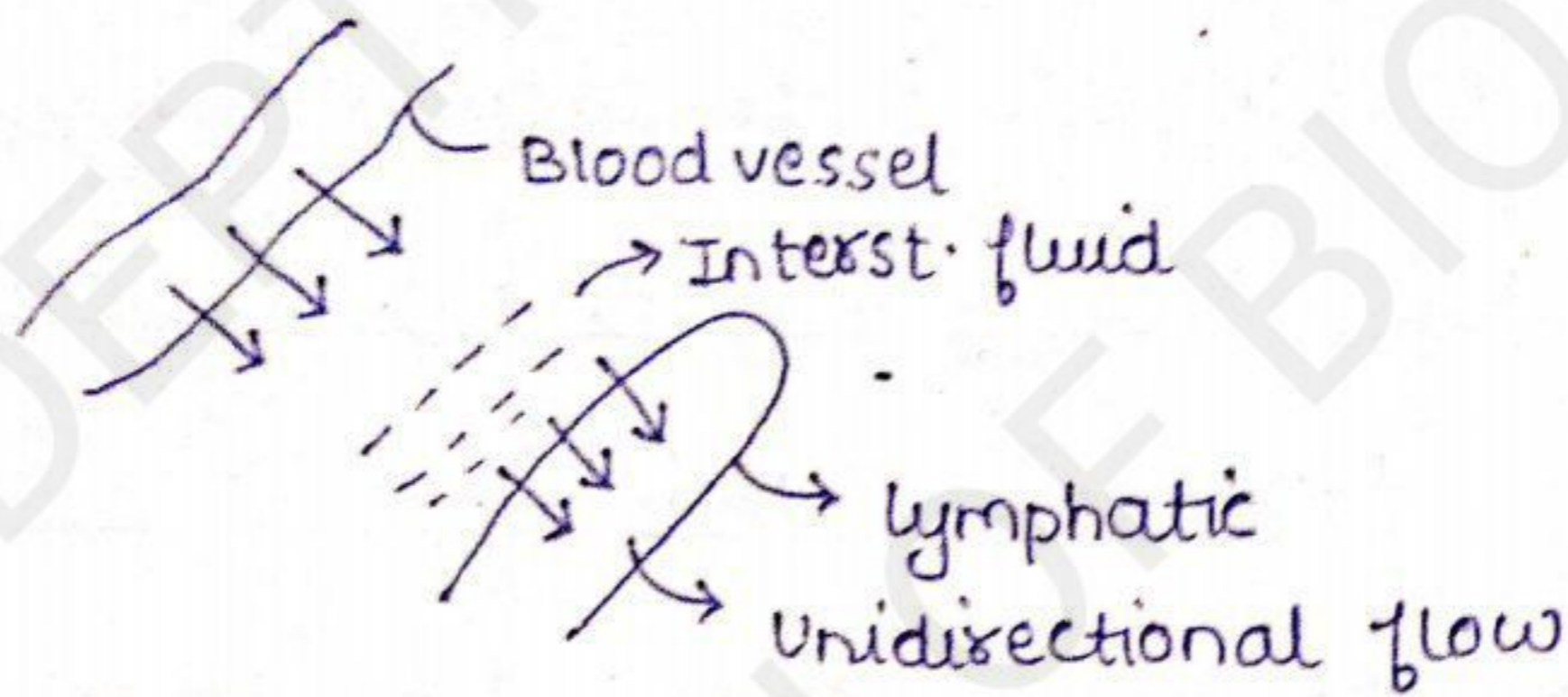


Lymphatic System

[DEPTH OF BIOLOGY]

↳ Lymph vessel + Lymph Node

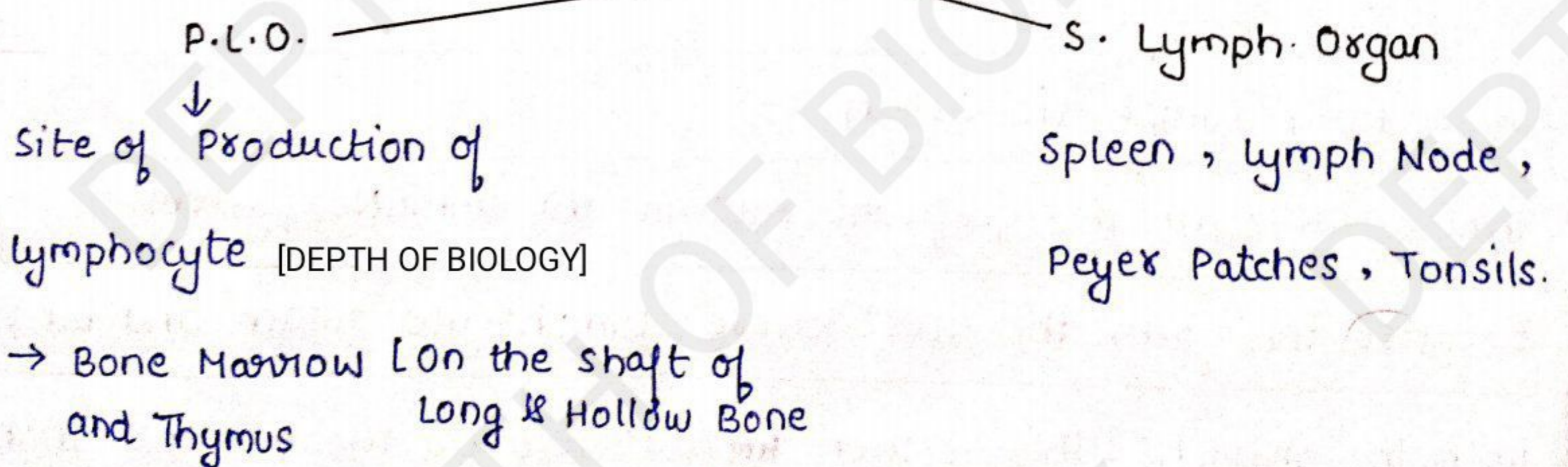


It forms a closed network of lymph vessel through which lymph circulates all over the body, the flow of lymphatic fluid is unidirectional from tissue space to the blood.

Lymphatic system consist of :- [DEPTH OF BIOLOGY]

- ① Lymph → fluid
- ② Lymphatic vessel
- ③ Lymph Nodes
- ④ Organs containing lymphatic tissue.
- ⑤ Red Bone Marrow
- ⑥ Diffused lymphocyte tissue [Tonsils]

Lymphatic Organ / Tissue



PLO [Bone Marrow \longrightarrow Thymus] Formation and
[DEPTH OF BIOLOGY] Maturation takes place.

Bone Marrow \rightarrow This are the site of production of blood cells.

It is a soft spongy nutrient rich tissue present
at the end of long bones (Femur). [L, N, E, B, H] [DEPTH OF BIOLOGY]

\downarrow
Are some WBC produce in Bone Marrow.

Thymus [Bilobde] \rightarrow It is found in the upper thoracic cavity.

It produce Hormone name Thymosin. It is
main site of maturation of T-lymphocyte, undeveloped T-
lymphocyte from the bone marrow are carried out to the
thymus via blood stream. These immature T-lymphocyte
undergo maturation in the thymus. and continue to stay here.

- They die if they react among themselves. [DEPTH OF BIOLOGY]
- Not more than 5% of T-lympho. leave thymus.

Secondary Lymphatic Organ :-

The S.L.O. play a significant role in the immune system.

because this form the sites where lymphocyte reach and bind
with the antigens. This is then followed by the multiplication
and activation. [DEPTH OF BIOLOGY]

1st → Spleen ⇒ Graveyard of RBC

⇒ Closely related to circulatory system.

⇒ Blood Bank [DEPTH OF BIOLOGY]

⇒ Largest out of all the lymph. organ present in body.

[DEPTH OF BIOLOGY]

⇒ If absence, the individual become more vulnerable to infection.

One of the major function of spleen is the destruction of older RBC. It also forms the reservoir of Blood which can be utilize during condition like Haemorrhagic shock.

It is a ductless gland found in the upper left area of abdominal cavity and partially divided into compartments.

• Every compartment have a tissue identify as white pulp and red pulp. [DEPTH OF BIOLOGY]

White pulp is rich in lymphocyte whereas the red pulp is rich in RBC as blood enter in the spleen and passes through the sinus for filtration a series of event take place.

It involve the rxn. of lymphocyte with pathogen and the consumption of debris by macrophages and the removal of old RBC. [DEPTH OF BIOLOGY]

* Lymph Nodes \Rightarrow They form lymphocyte

\Rightarrow Destroy bacteria and other particulate by phagocytosis using macrophage

\Rightarrow Mechanical filter which preventing

Poisonous material. [DEPTH OF BIOLOGY]

• Made up of C. tissue

• Oval shape present along the lymphatic vessel.

• Rich in lymphocyte

• Filter and destroy the bacteria and viruses

• \div into compartment [DEPTH OF BIOLOGY]

• As lymph passes through the sinus the macrophages filter and engulf the pathogen and debris.

• The purpose of T-lymph is to fight against infection and attack cancerous cells except the dorsal cavity lymph

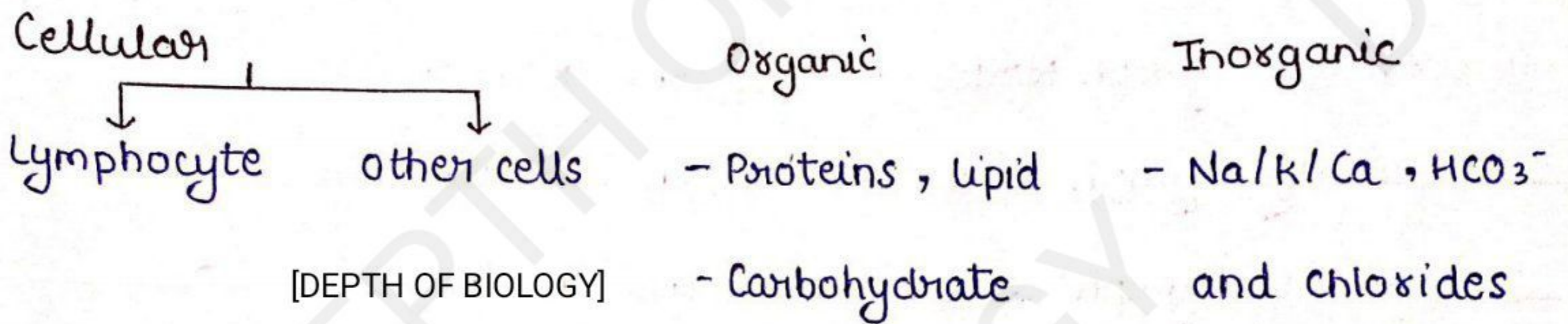
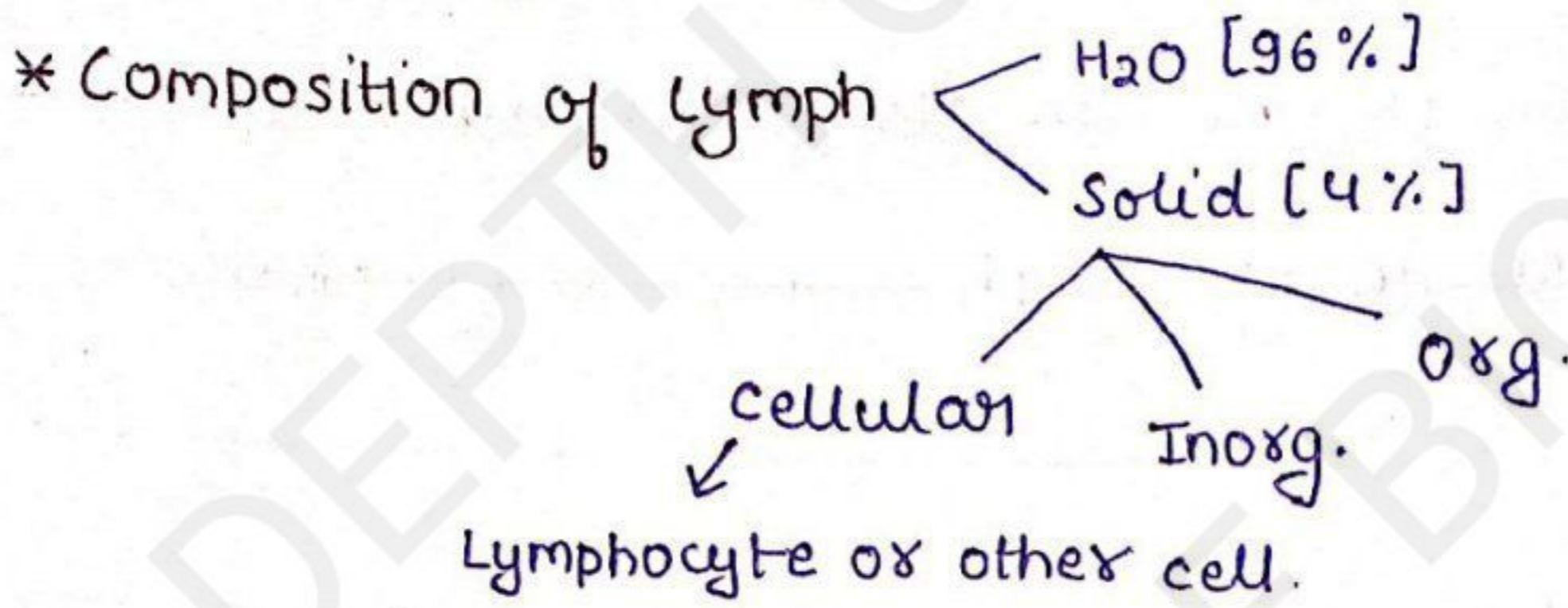
Nodes are present in almost every body cavity.

* Tonsils \rightarrow It exist as a ring structure around a pharynx in 3 pairs. The pathogen and antigens entering the body to mouth are initially intercepted by the tonsils.

* Peyer Patches \Rightarrow Present in Intestine and appendix.

The pathogen that enter through the intestinal tract are

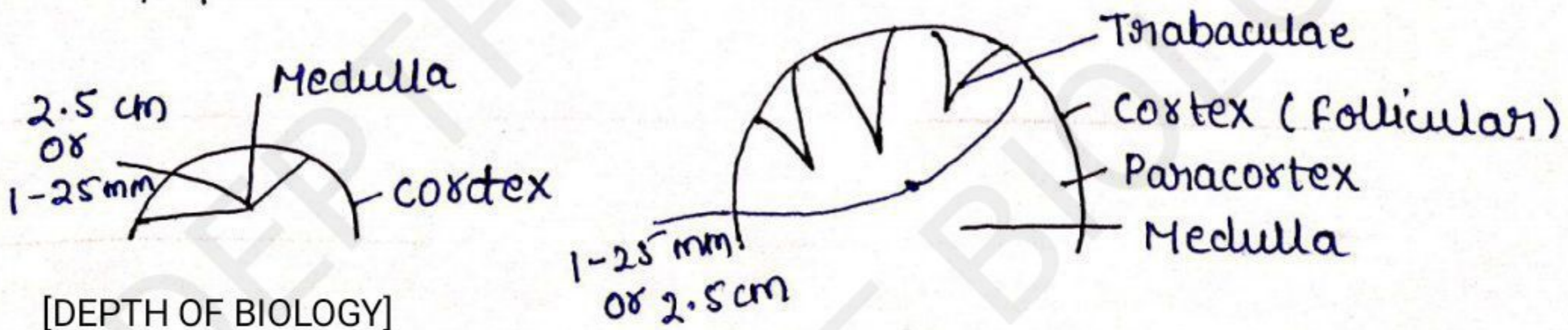
intercepted by the peyer patches.



* Function of Lymph / Lymphatic System

- (a) Nutritive
- (b) Drainage
- (c) Transmission of Protein
- (d) Absorption of fat [Absorb in small intestine]
- (e) Immunity
 - B cells
 - T cells
- (f) Defensive

* Lymph Nodes



[DEPTH OF BIOLOGY]

- Outer → Cortex
- Mid → Paracortex
- Inner → Medulla

These are the structures which are small and glandular in appearance. They are present all along the path of lymph vessels. They are also known as lymph glands or lymphatic Nodes. [DEPTH OF BIOLOGY]

* Group of Lymph Nodes :-

① Cervical / Lymph Nodes → Present in neck.

② Axillary Lymph Nodes → Present in arm pit.

③ Inguinal Lymph Nodes → Present in Thighs.

⇒ Size 1-25 mm [DEPTH OF BIOLOGY]

→ Enclosed within a capsule of dense C.T.

→ Capsular extensions are known to divide the Node into compartments. [DEPTH OF BIOLOGY]

→ Trabeculae form a pathway for blood vessel into Nodes.

* 3 layers are present in Lymph Nodes :-

Cortex

- Cortex of lymph node consist of P. and S. Lymphoid follicle.
- Primary follicle develop 1st when some antigens enter the body and reach the lymph node. The cell of P. follicle proliferate.
- The active proliferation area of cell occur in a particular area of follicle called Germinal Centre.
- After proliferation of cell, the P. follicle become the S. follicle.
- Cortex also contain some B lymphocytes and Macrophages.

[DEPTH OF BIOLOGY]

Paracortex

It is a tissue present b/w the cortex and Medulla

[DEPTH OF BIOLOGY]

Medulla

It is densely occupied by :-

- Macrophages
- B-lymphocytes
- Antibody Producing plasma ~~body~~ cell
- Reticular cells
- Fibres
- Blood Vessels

[DEPTH OF BIOLOGY]