

UPDAAN

2025

LIFE PROCESSES ✓

Biology

Lecture - 09

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Topics to be covered

- 1 Types of circulation in vertebrates ✓
- 2 Lymph ✓
- 3 Transportation in plants ✓
- 4 MCQ practice and Homework ✓





Question of the Day



Normal blood pressure \rightarrow 120/80 mm Hg ✓

Device used for measuring blood pressure \rightarrow



Sphygmomanometer

Q.

Think and answer

Atrium → Receive blood
Ventricle → pump the blood.



Which chamber of human heart pump blood to rest body organs ?

A Right ventricle ✓

☒ B Left ventricle ✓

C Right atrium

D Left atrium

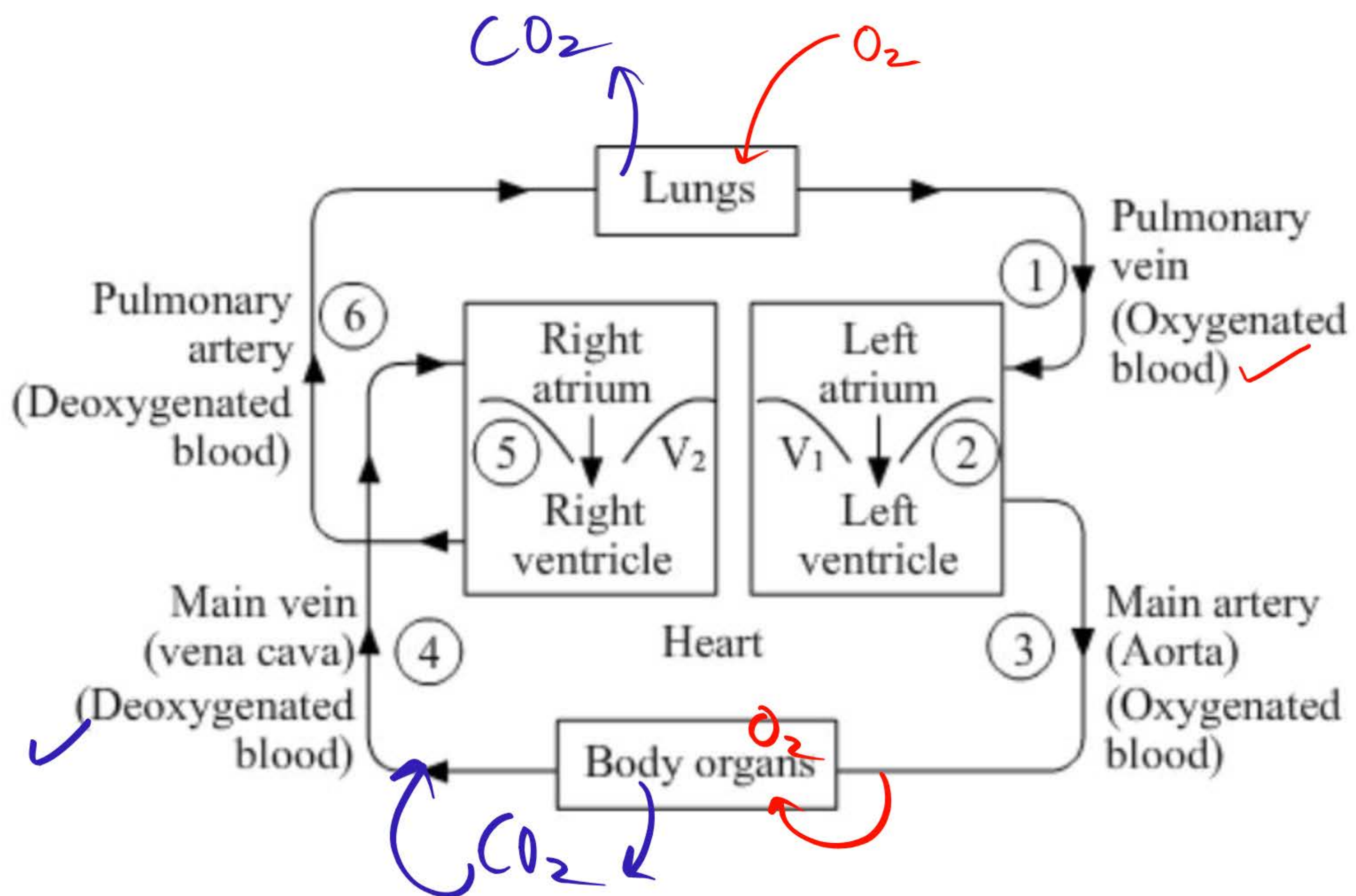


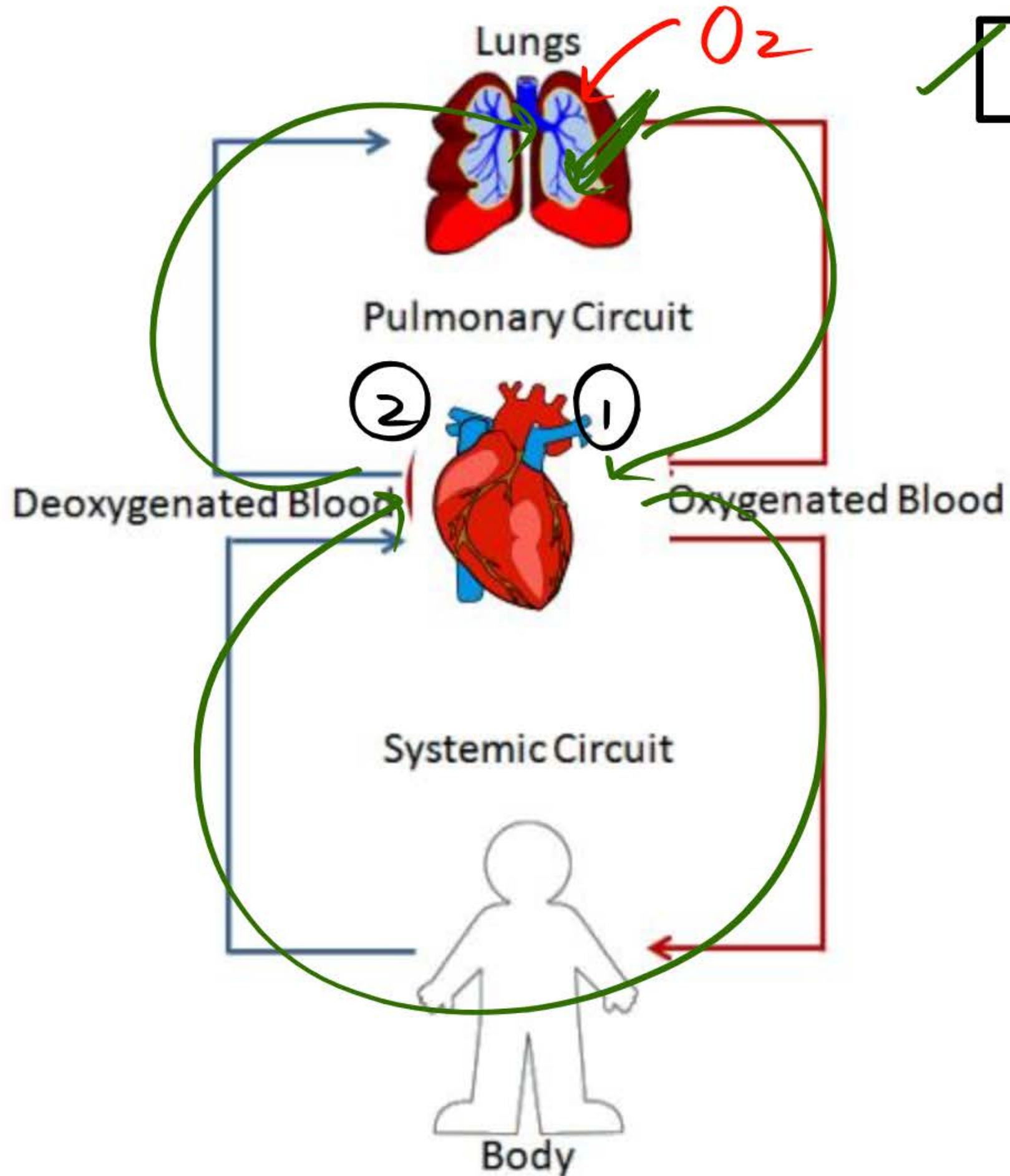
Lungs.

Aorta

Organs.







Double circulation

Blood flows through the heart twice to complete the full circuit

- ① Pulmonary Circulation
- ② Systemic Circulation



Why we need chambers in the heart ?

To prevent mixing of oxygenated and deoxygenated blood

✓ (Chambers) → ✓

More oxygen will be supplied to body organs in better way

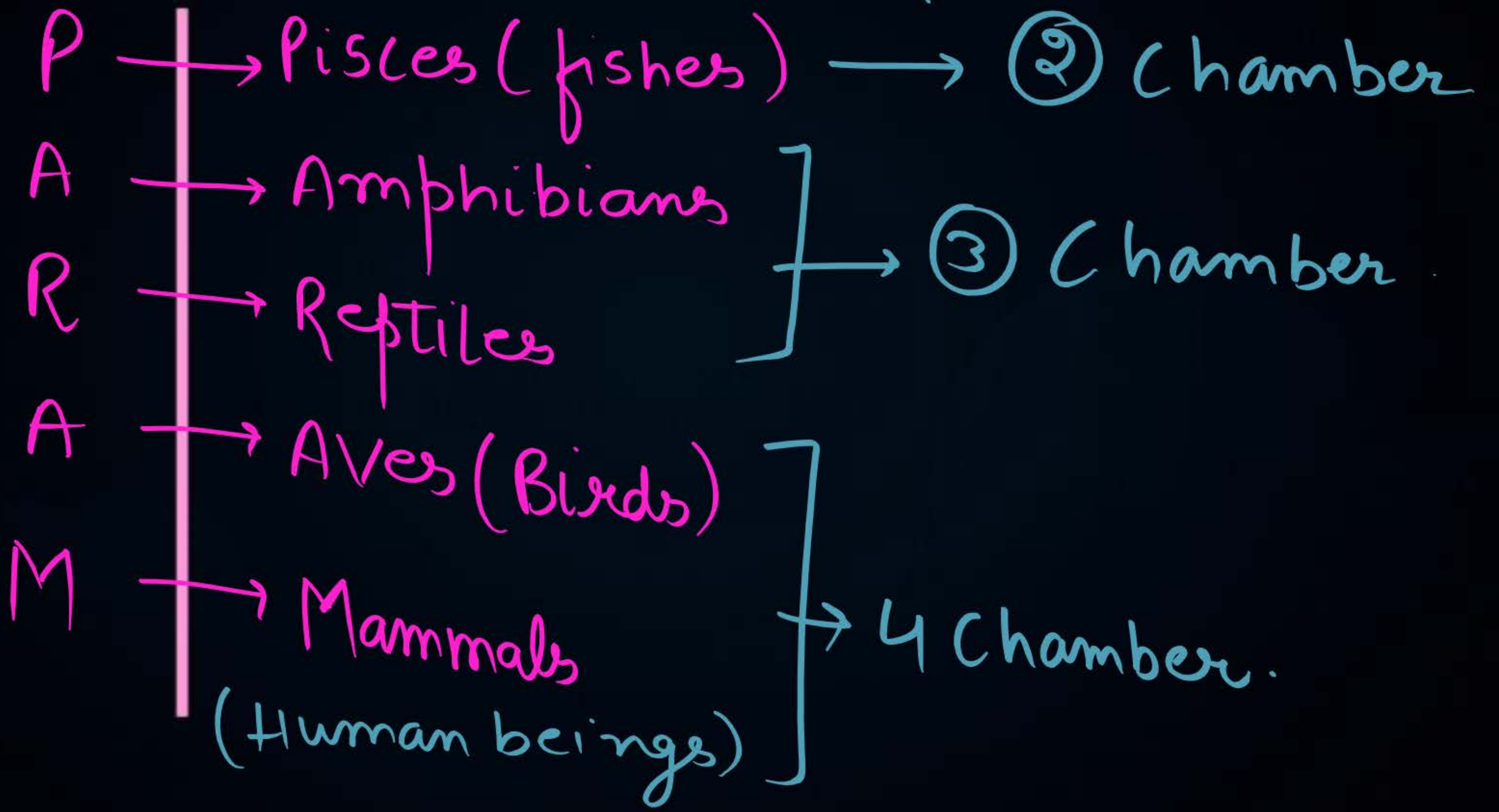


Cells

Highly efficient supply of oxygen to the body

More respiration leading to more energy production

Vertebrates → Animals with backbone.



notes ✓



Class	Chambers in heart	Type of circulation	Temperature maintenance
Pisces (Fishes)	2	✓ Single circulation	No (Cold blooded)
Amphibians	3	✓ Incomplete Double circulation	No (Cold blooded)
Reptiles xxx	3	✓ Incomplete Double circulation	No (Cold blooded)
Aves (Birds)	4	✓ Double circulation (Complete)	Yes ✓ (Warm blooded)
Mammals	4	✓ Double circulation (Complete)	Yes ✓ (Warm blooded)



Warm-blooded

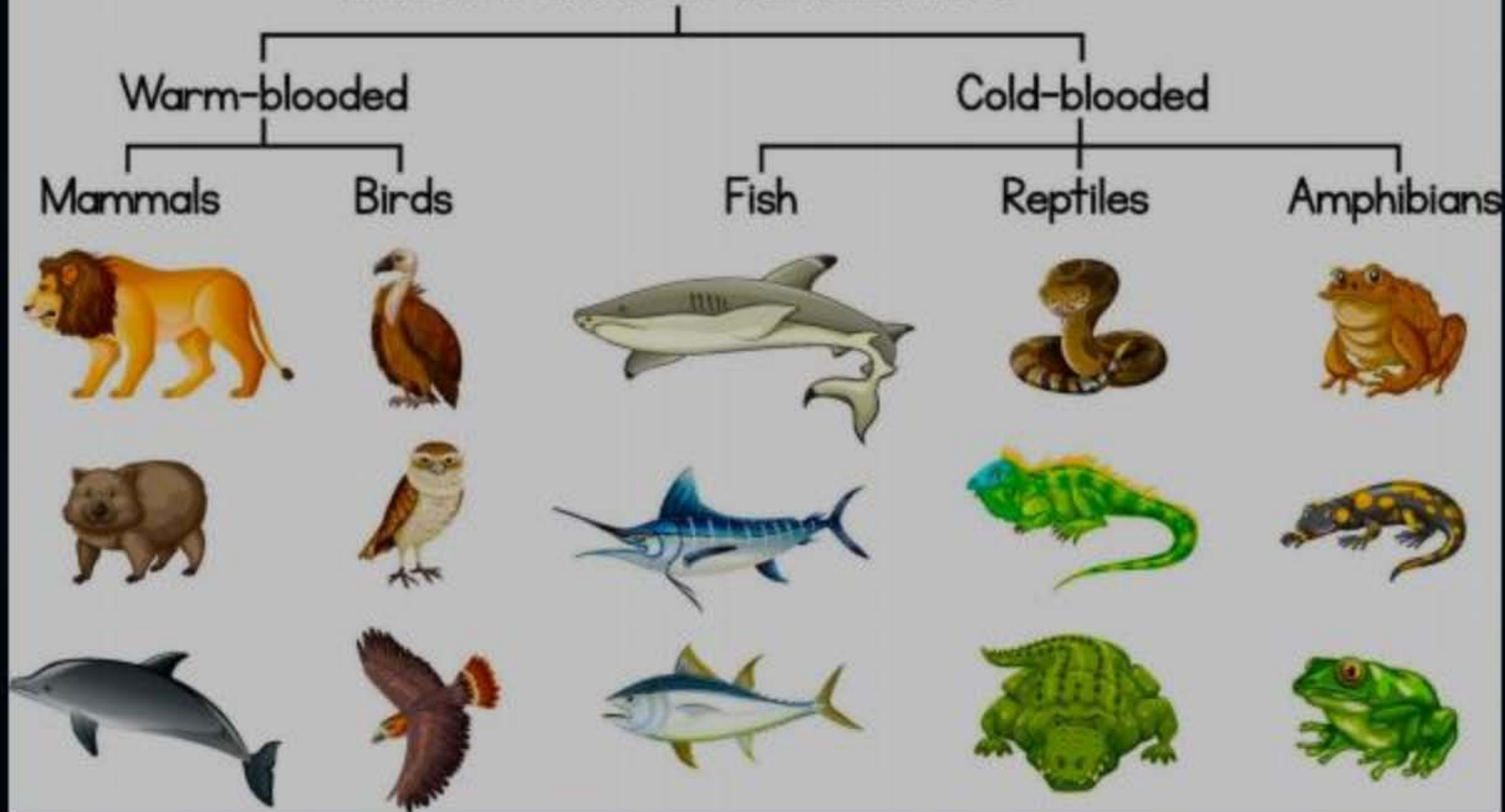
Animals that are able to maintain a nearly constant body temperature.

Cold-blooded

Animals that aren't able to maintain a nearly constant body temperature.



Classification of Vertebrates



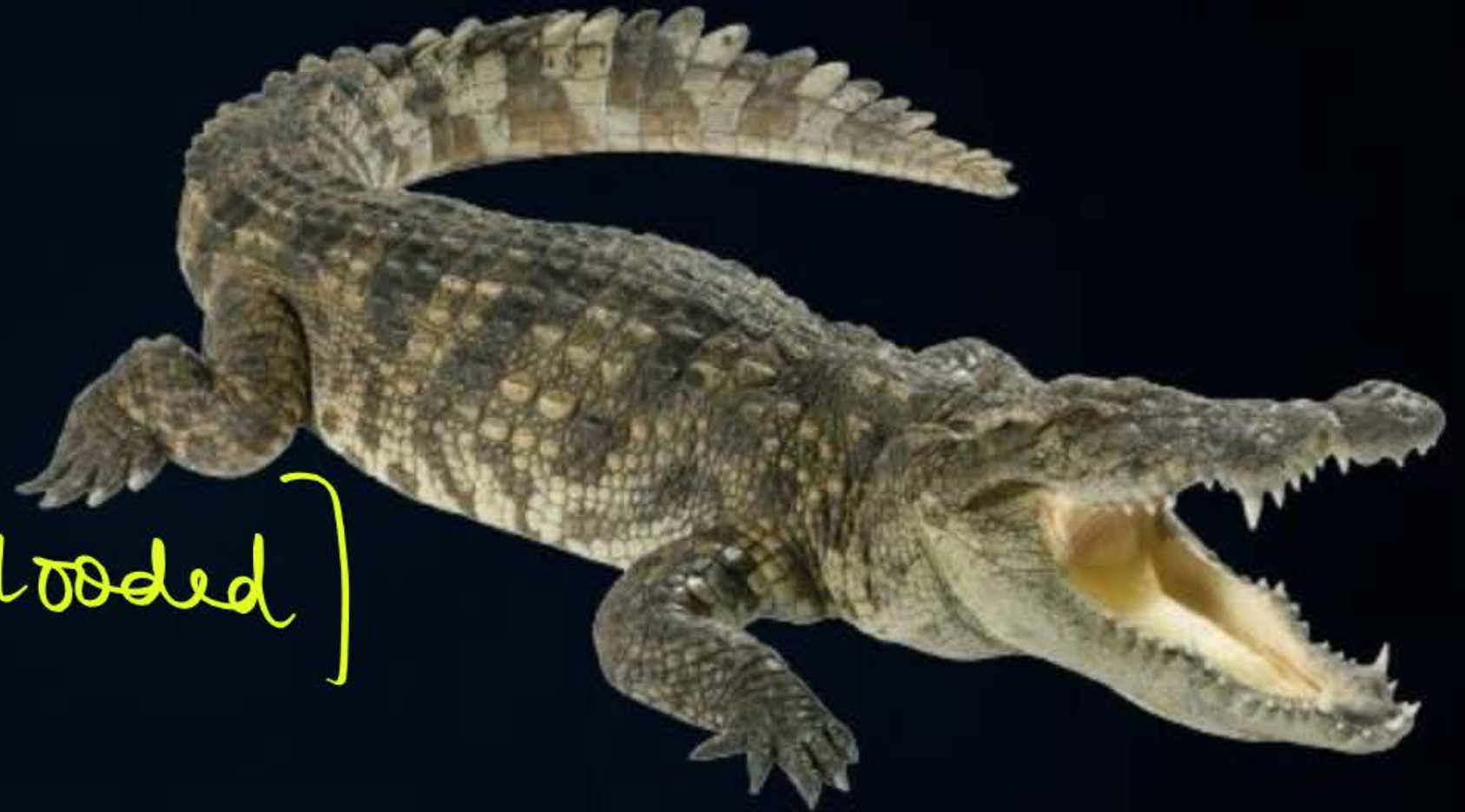
Crocodiles - 4 chambered heart ✓✓



✓✓ HomeWork



[Warm blooded / Cold blooded]



Which of the following organisms shows single circulation ?

A Human

B Whales

☒ C Shark

D All of these

Pisces (fishes)

Mammal

Fish ✓



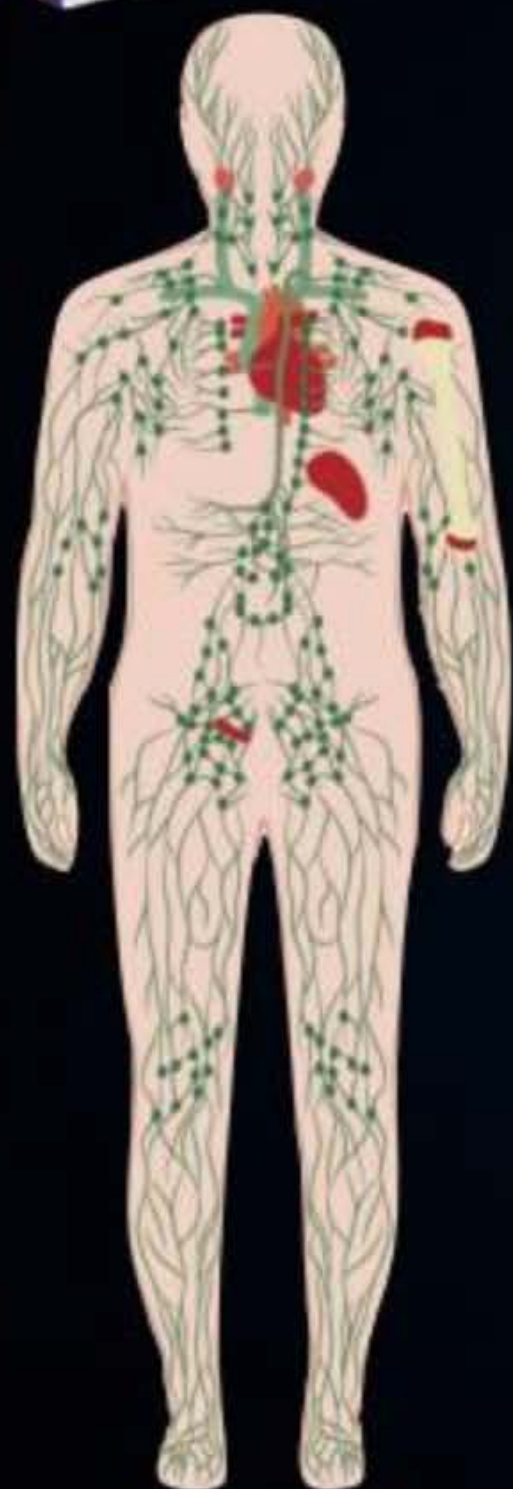
Lymph

(Lymphatic System).

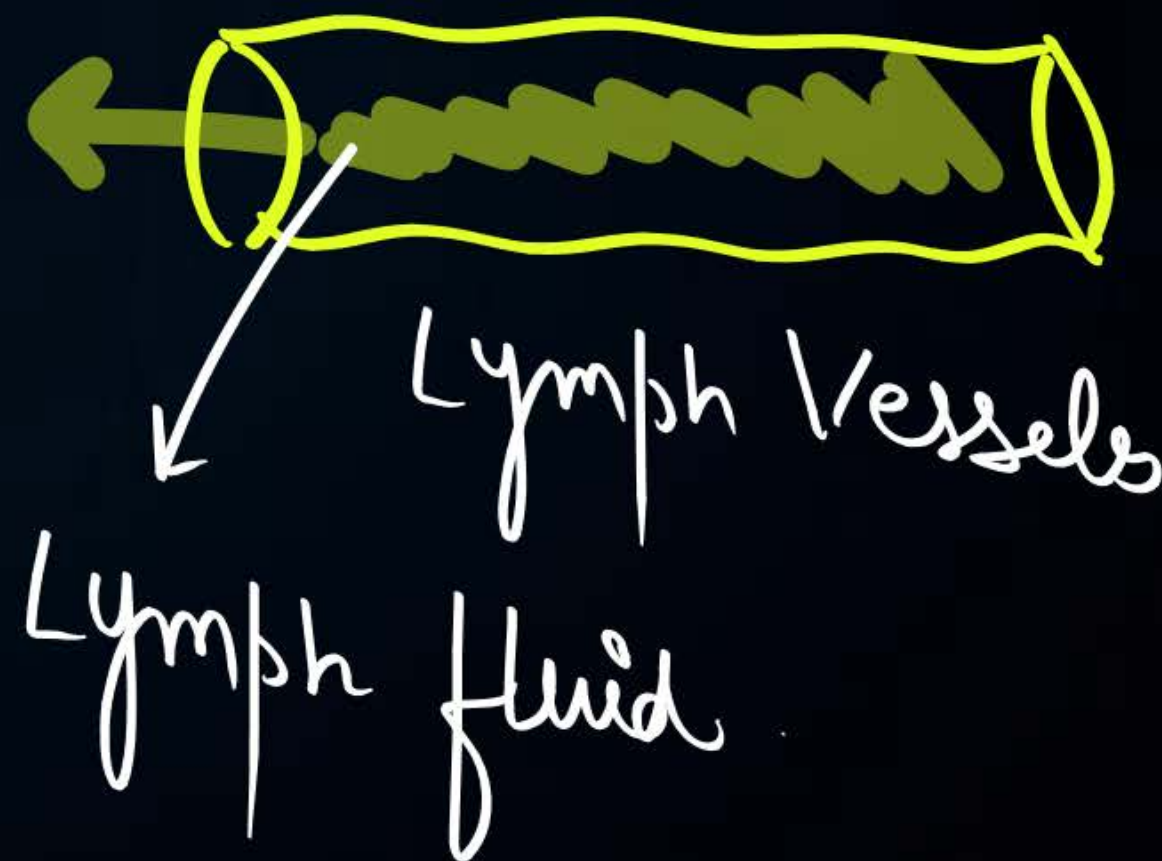


- **Lymph / Tissue fluid**

A colourless fluid formed due to leakage of plasma, white blood cells and proteins from blood. ✓ ✓

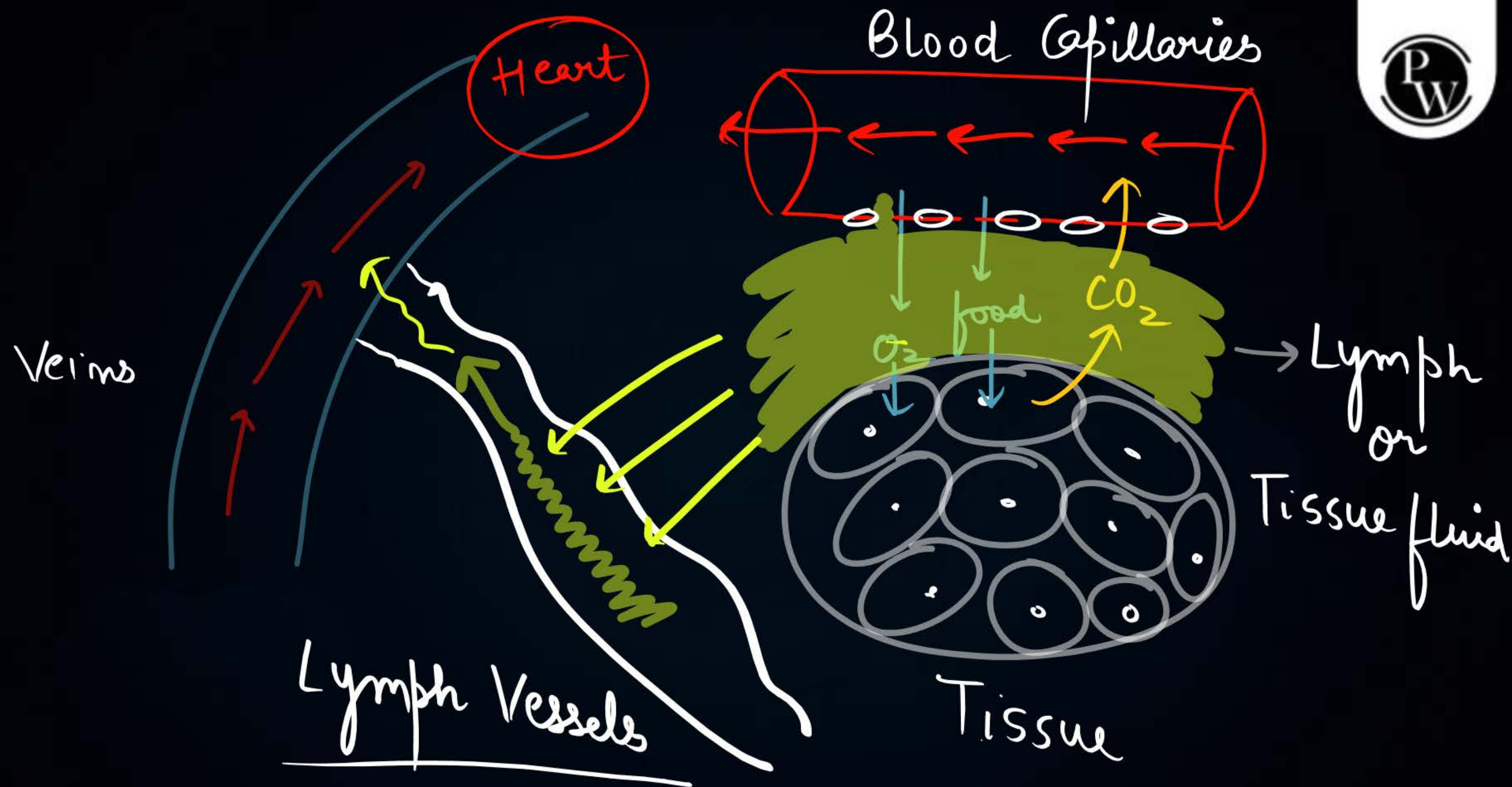


→ RBC is absent
→ WBC is present
 ↓
Lymphocytes



Lymph Vessels

Lymph fluid



Functions of Lymphatic system:

✓✓/BC



- a) Lymph facilitates absorption of fats and fat- soluble nutrients back to the circulatory system.
- b) It removes excess fluids from body tissues and maintains the balance of fluid between the blood and tissues.
- c) It forms part of the body's immune system and helps defend against bacteria and other microbes, by producing immune cells like lymphocytes and other antibody cells.

notes

LYMPH	BLOOD
It is a colourless fluid.	It is a reddish coloured fluid.
It is part of the lymphatic system	It is part of the circulatory system
It helps in body defence and is a part of the immune system.	It is associated with the circulation of oxygen and carbon dioxide, nutrients hormones, waste products etc.
It contains plasma and lymphocytes.	It contains plasma, RBCs, WBCs, and platelets.
Carries less amount of oxygen and digested food.	Carries more amount of oxygen and digested food.
Transports nutrients from the tissue cells to the blood, through lymphatic vessels.	Transports nutrients and oxygen from one organ to another.
The flow of lymph is slow.	The flow of blood in the blood vessels is fast.
Clots slowly due to the presence of less fibrinogen.	Clots quickly due to the presence of more amount of fibrinogen.
The movement of lymph is in a single direction.	The movement of Blood is both towards and away from the heart.

Towards the heart



Question



Lymph is a _____ fluid

- A Red
- B Pale yellow
- C Green
- ☒ D Colourless



Transportation in plants

- ① Oxygen
- ② Food (Glucose, Sucrose) → Sugar
- ③ Carbon dioxide
- ④ Water
- ⑤ Minerals (Nitrogen, Iron, Calcium)
- ⑥ Hormones
- ⑦ Waste Substances



Larynx is made up of Cartilage
↳ Voice box

~~A~~ True ✓

B False X

Trypsin is present in ~~gastric~~ juice.



↓
Pancreatic juice

Ⓐ True ✓

Ⓑ False ✗

→ protein digestion

Valves are present in ~~arteries~~.



↓
Veins

Ⓐ True ✓

~~Ⓑ~~ False X

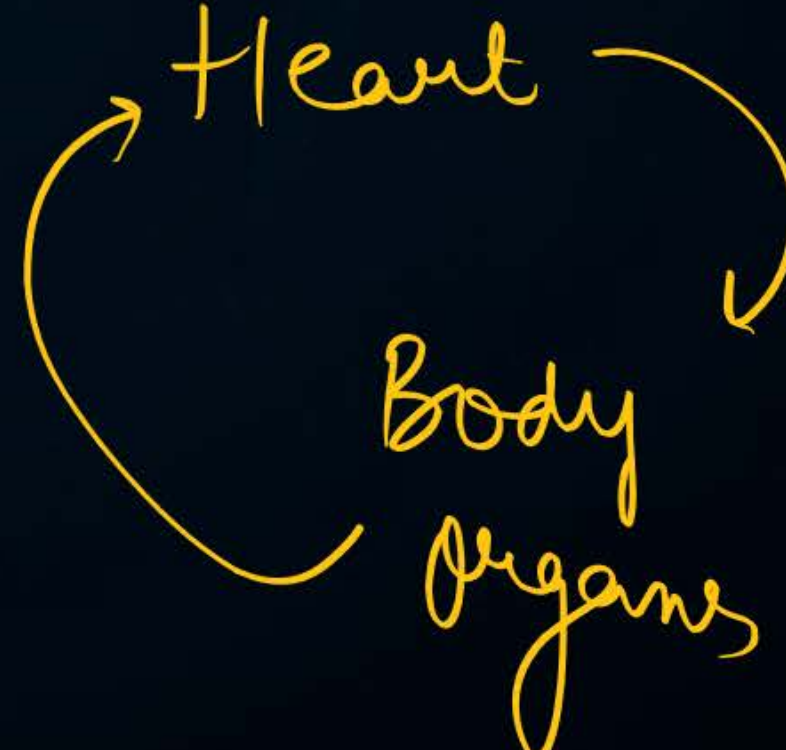
Pulmonary Circulation



Heart → Lunge
Lunge → Heart

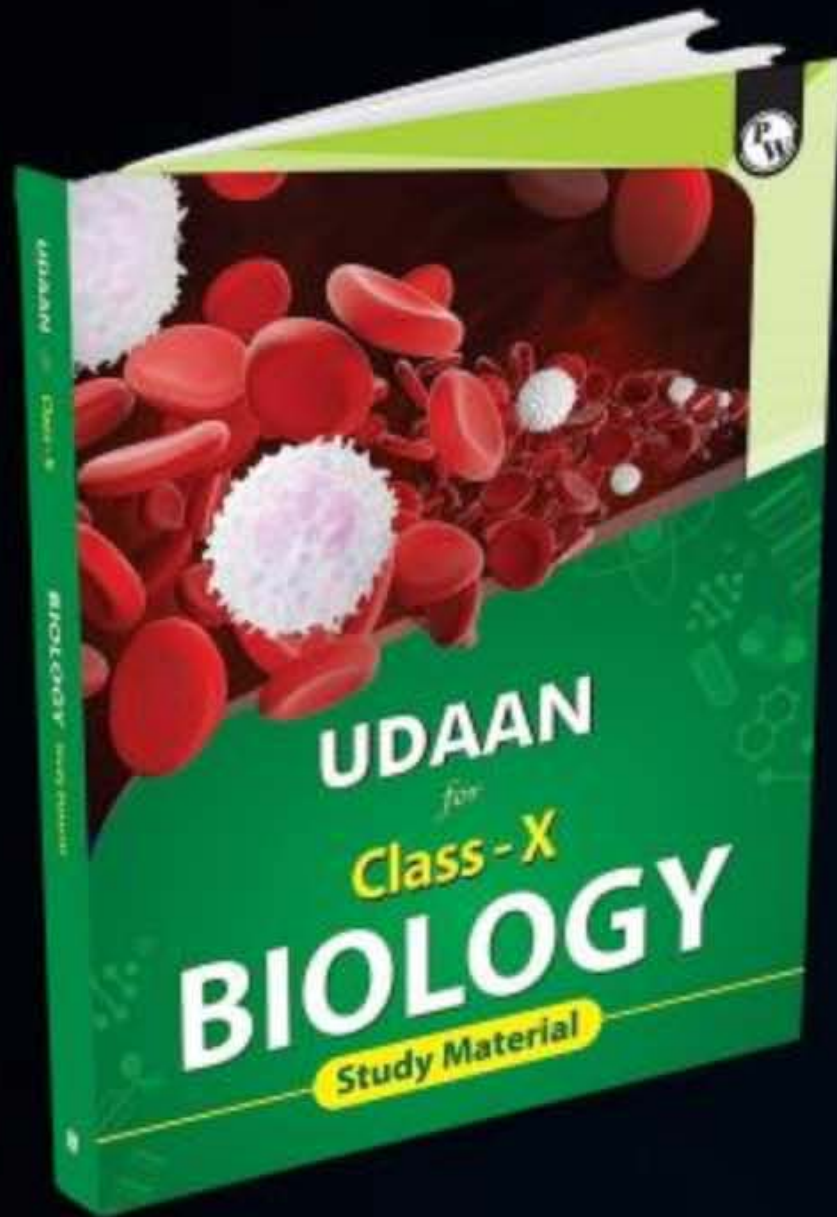
A diagram showing the pulmonary circulation loop. It consists of two curved arrows forming a circle. The top arrow points from the 'Heart' to the 'Lunge' (lungs). The bottom arrow points from the 'Lunge' back to the 'Heart'.

Systemic Circulation



Heart → Body Organs
Body Organs → Heart

A diagram showing the systemic circulation loop. It consists of two curved arrows forming a circle. The top arrow points from the 'Heart' to the 'Body Organs'. The bottom arrow points from the 'Body Organs' back to the 'Heart'.



Homework



FROM PW MODULE
(Udaan - CLASS 10)

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THANK
YOU

