YAKEEN NEET 2.0

2026

11.06.2025

STRUCTURAL ORGANISATION IN ANIMALS

ZOOLOGY | Lecture – 10

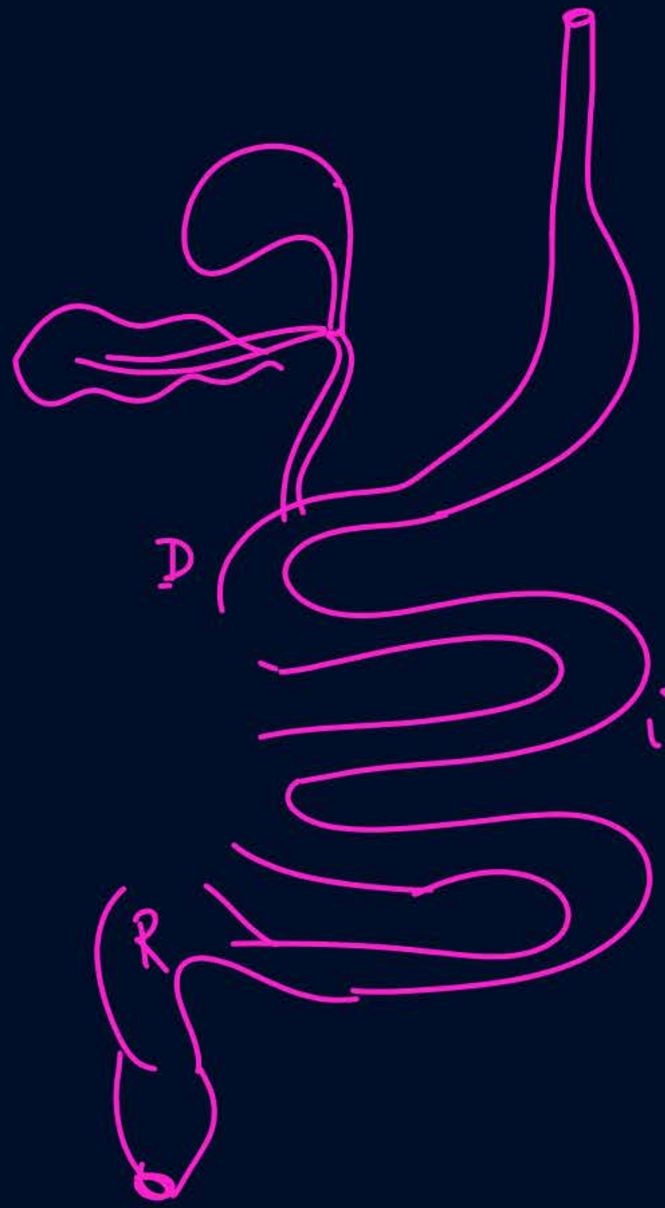
By- SAMAPTI MAM

Topics to be covered

1. FROG Part-03
2.
3.
4.

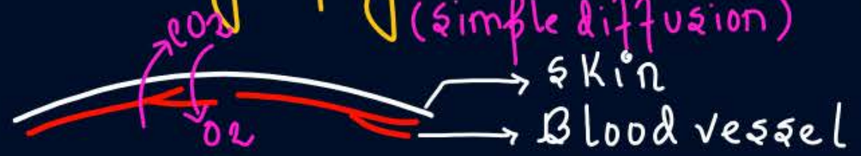
MY TELEGRAM

#Samagh Express



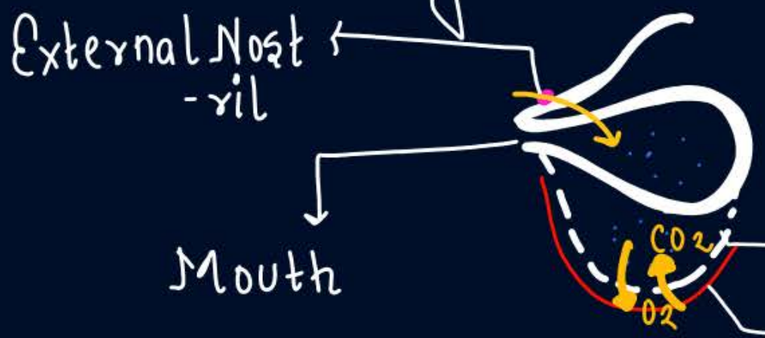
Respiration:

- i) In water: Cutaneous respiration: Exchange of gases occurs through skin that is HIGHLY VASCULAR.
  (simple diffusion)



- ii) During Hibernation & Aestivation: Cutaneous respiration
- iii) On Land: Cutaneous respiration, Buccal cavity, Pulmonary Respiration
  (Buccopharyngeal) (Lungs)

Buccal cavity



→ When air fills, Buccal cavity lowers

→ Highly vascular

Mouth Closed → Air → Ext nostril → Buccal cavity (exchange)

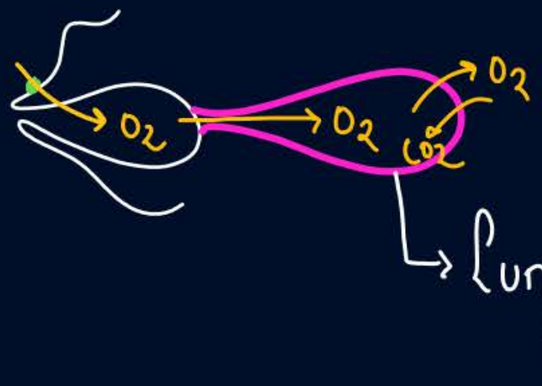
↓

Air filled in Buccal cavity (↑ Pressure)

↓

Pushed into Lungs (exchange)

Pulmonary Resp^n: 1 pair, pinkish, sac like, present in upper part of trunk (thorax)



Note: Tadpole Larva: 'GILLS': Resp^n → Herbivore

Frogs respire on land and in the water by two different methods. In water, skin acts as aquatic respiratory organ (cutaneous respiration). Dissolved oxygen in the water is exchanged through the skin by diffusion. On land, the buccal cavity, skin and lungs act as the respiratory organs. The respiration by lungs is called pulmonary respiration. The lungs are a pair of elongated, pink coloured sac-like structures present in the upper part of the trunk region (thorax). Air enters through the nostrils into the buccal cavity and then to lungs. During aestivation and hibernation gaseous exchange takes place through skin.

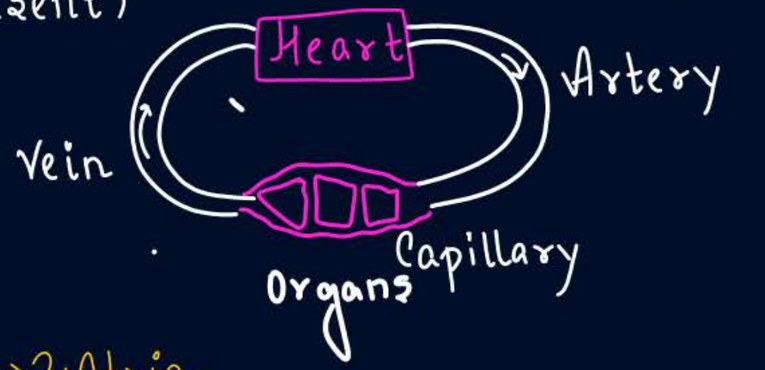
Circulatory system:

→ Blood vascular system
→ Lymphatic system
→ Portal circulation.

① Blood Vascular system: CLOSED Circulatory system

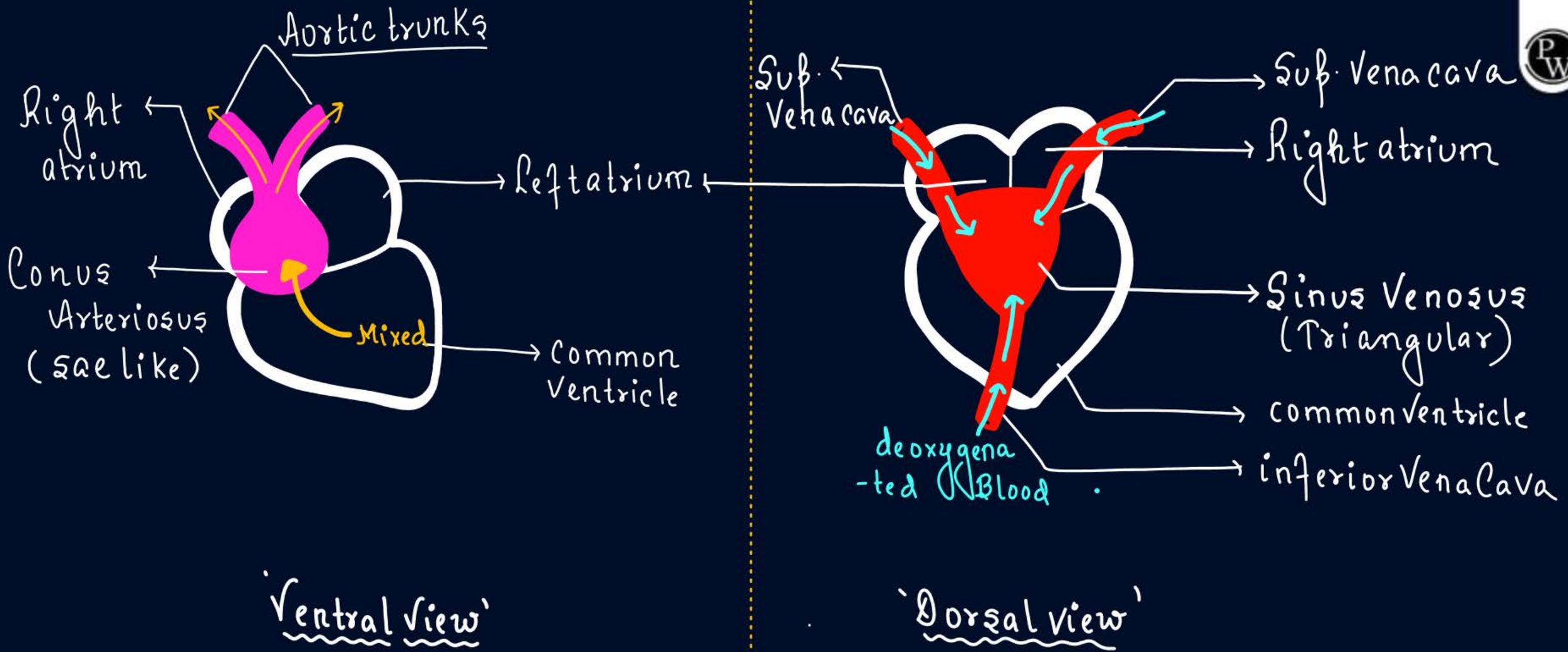
↳ Blood flows through Closed Network of Blood vessel (capillary present)

1) Heart
2) Blood
3) Blood vessel

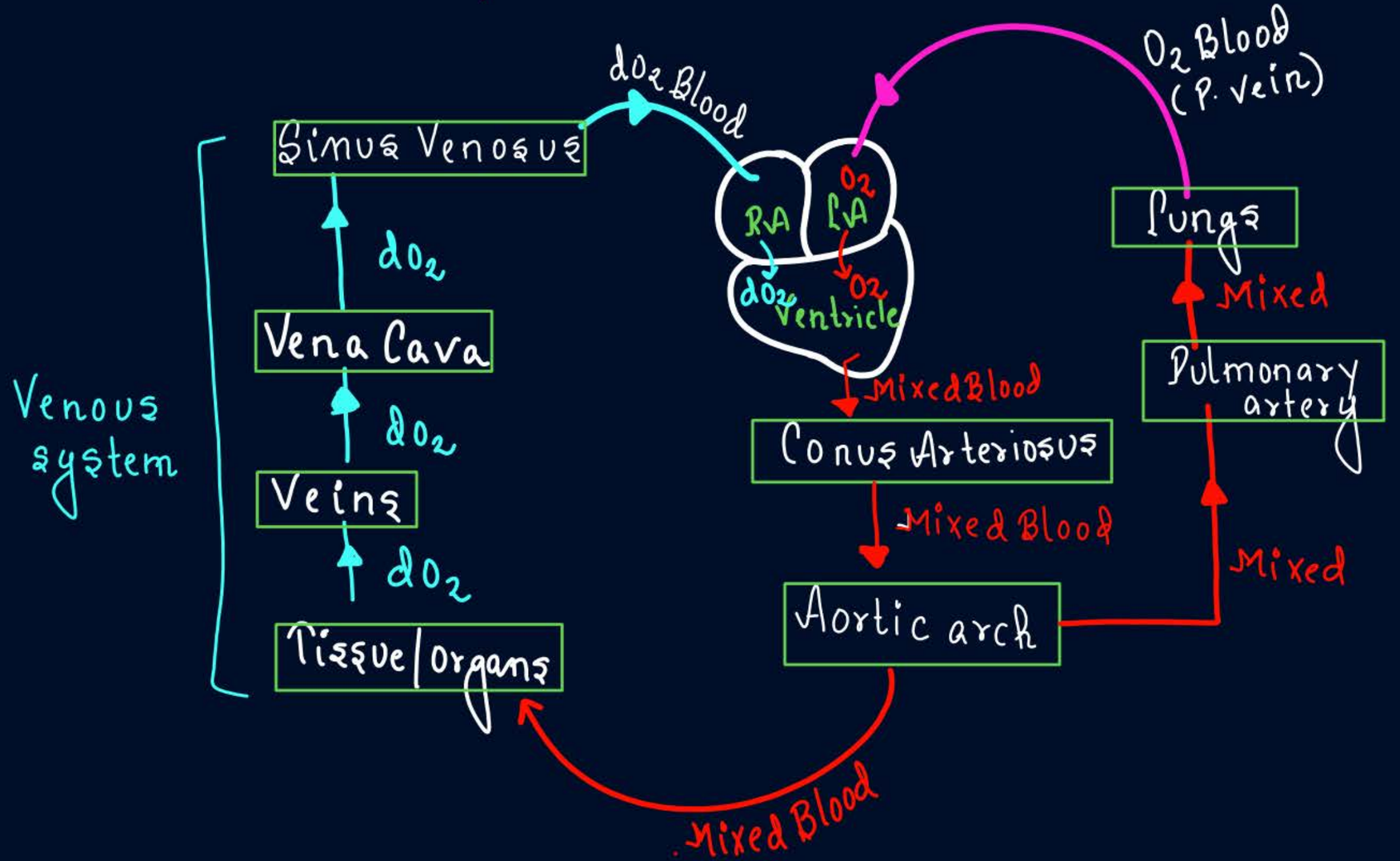


HEART

- Located B/w Lungs
- Muscular: 3 chambered Heart → 2 Atria, → 1 Ventricle
- 2 Additional chambers present: ① SINUS VENOSUS & ② CONUS ARTERIOSUS /TRUNCUS ARTERIOSUS
- Covered with double membranous PERICARDIUM


Aortic trunks
Right atrium
Left atrium
Conus Arteriosus (sac like)
Mixed
Common Ventricle
'Ventral View'
Sub. Vena cava
Sub. Vena cava
Right atrium
Sinus Venosus (Triangular)
common Ventricle
inferior Vena Cava
deoxygena -ted Blood
'Dorsal view'

Mixed Circulation (Incomplete Double circulation)



Note

- Sinus venosus joins RA & present Dorsally
- Conus arteriosus present ventrally Connected to ventricle

Blood: Plasma + RBC + WBC + Platelets (Thrombocytes)

↳ Nucleated with Haemoglobin (Red color)

(II) Lymphatic system:

① → **Lymph**: Colorless fluid formed by filteration of Blood.
Similar composition like Blood but Lacks RBC & has Lesser Protein.

② → **Lymphatic channels**

③ → **Lymph Nodes**

The vascular system of frog is well-developed closed type. Frogs have a lymphatic system also. The blood vascular system involves heart, blood vessels and blood. The lymphatic system consists of lymph, lymph channels and lymph nodes. Heart is a muscular structure situated in the upper part of the body cavity. It has three chambers, two atria and one ventricle and is covered by a membrane called pericardium. A triangular structure called sinus venosus joins the right atrium. It receives blood through the major veins called vena cava. The ventricle opens into a sac-like conus arteriosus on the ventral side of the heart. The blood from the heart is carried to all parts of the body by the arteries (arterial system). The veins collect blood from different parts of body to the heart and form the venous system. Special venous connection between liver and intestine as well as the kidney and lower parts of the body are present in frogs. The former is called hepatic portal system and the latter is called renal portal system. The blood is composed of plasma and cells. The blood cells are RBC (red blood cells) or erythrocytes, WBC (white blood cells) or leucocytes and platelets. RBC's are nucleated and contain red coloured pigment namely haemoglobin. The lymph is different from blood. It lacks few proteins and RBCs. The blood carries nutrients, gases and water to the respective sites during the circulation. The circulation of blood is achieved by the pumping action of the muscular heart.

Note

H.W Q- Ncert catalyst

Q-1. Muscles play an active role :

1. To adjust to the changes in environment
2. Maintain positions of various body parts
3. Active role in all the movements of the body
4. All of the above

Q-2. Read the following statement to mark the correct answer

STATEMENT 1- Each muscle is made up of long cylindrical fibres arranged randomly called muscle fibres

STATEMENT 2- Muscle fibre contract and again return to the uncontracted state in a uncoordinated fashion

1. Statement I is correct but Statement II is incorrect.
2. Statement I is incorrect but Statement II is correct.
3. Both Statement I and Statement II are correct.
4. Both Statement I and Statement II are incorrect.

The wall of internal organs such as the blood vessels, stomach and intestine contain ---------- of muscle tissue.

a)involuntary
b)smooth
c)unstriated
d)All of these

Q-3
(4)

ASSERTION- **cardiac muscle fibre contract as a unit** (T) because

REASON -at fusion point of cardiac muscle fibre intercalated disc are present (T)

A) Both Assertion (A) and Reason (R) are true, and Reason (R) is a correct explanation of Assertion (A).

B) Both Assertion (A) and Reason (R) are true, but Reason (R) is not a correct explanation of Assertion (A

C) Assertion (A) is true, and Reason (R) is false.

D) Assertion (A) is false, and Reason (R) is true.

Q-4 (1)

The passage highlights the neural tissue's "greatest control over the body's responsiveness to changing conditions." This superior control is a direct consequence of a specific characteristic mentioned in the text. Which option best describes how this characteristic facilitates the mentioned control?

Q-5

(A) Neuroglial cells' large volume efficiently absorbs environmental stimuli.

(B) Neurons' excitable nature allows them to rapidly initiate and spread precise commands.

(C) The output zone of neurons solely ensures stimulatory effects on target cells.

(D) Neuroglial support ensures the stability required for slow, deliberate responses.

Given below are two statements: one is labelled as Assertion A and the other is labelled as Reason R:

Assertion A: The coordinated movement of food through the stomach and intestine occurs without conscious effort.

Reason R: The walls of the stomach and intestine contain smooth muscle tissue, whose functioning cannot be directly controlled by thinking.

In the light of the above statements, choose the correct answer from the options given. below:

(A) A is true but R is false.

(B) A is false but R is true.

(C) Both A and R are true and R is the correct explanation of A.

(D) Both A and R are true but R is NOT the correct explanation of A.

QUESTION

Select the option with the correct statements for neural tissue.

I. Neurons are excitable cells.

II. The neuroglial cells protect and support neurons.

III. Neuroglia cells make up more than one - half the volume of neural tissue in our body.

IV. When a neuron is suitably stimulated, an electrical disturbance is generated which swiftly travels along its cytosol.

Plasma

Q-7

1

1. I, II and III only
2. I and IV only
3. II and III only
4. I, II, III and IV

Q-1. READ THE FOLLOWING STATEMENT AND CHOOSE THE CORRECT ANSWER

STATEMENT 1- frog shows sexual dimorphism ✓ T

STATEMENT 2- Above the mouth a nostril is present

a pair F

1. Statement I is correct but Statement II is incorrect.
2. Statement I is incorrect but Statement II is correct.
3. Both Statement I and Statement II are correct.
4. Both Statement I and Statement II are incorrect.

Q-8 / 1

ASSERTION- **frogs have short alimentary canal**

REASON – frogs are carnivores

A) Both Assertion (A) and Reason (R) are true, and Reason (R) is a correct explanation of Assertion (A).

B) Both Assertion (A) and Reason (R) are true, but Reason (R) is not a correct explanation of Assertion (A).

C) Assertion (A) is true, and Reason (R) is false.

D) Assertion (A) is false, and Reason (R) is true.

M → BC → Oe~~so~~ → Phar

Q-1. READ THE FOLLOWING STATEMENT AND CHOOSE THE CORRECT ANSWER

STATEMENT 1- The mouth opens into the buccal cavity that leads to the pharynx through oesophagus.

STATEMENT 2- Oesophagus is a short tube that opens into the stomach which in turn continues as the intestine, rectum that opens outside VIA cloaca

zero F F T

1. Statement I is correct but Statement II is incorrect.
2. Statement I is incorrect but Statement II is correct.
3. Both Statement I and Statement II are correct.
4. Both Statement I and Statement II are incorrect.

STATEMENT- **Frog have the ability to change color to hide from enemy**

STATEMENT 2- **during peak summer and winter they undergo hibernation and aestivation respectively**

1. Statement I is correct but Statement II is incorrect.
2. Statement I is incorrect but Statement II is correct.
3. Both Statement I and Statement II are correct.
4. Both Statement I and Statement II are incorrect.

Read the following statements regarding digestion and respiration in frogs and identify the incorrect ones:

(i) The common bile duct opens directly into the stomach to facilitate early emulsification of fats.

(ii) Final digestion and absorption occur in the intestine, aided by finger-like villi and microvilli.

(iii) During hibernation, pulmonary respiration continues as lungs remain functional in low temperatures.

(iv) In aquatic conditions, frogs rely solely on buccal respiration for gaseous exchange.

(v) The pancreatic juice aids in the digestion of both proteins and carbohydrates.

Which of the above statements are incorrect?

(A) (i), (iii), and (iv) only

(B) (ii) and (v) only

(C) (i), (ii), and (v) only

(D) (ii), (iii), and (iv) only

Q-13

A

Homework

- REVISE CLAASNOTES / ZOOLOGY MED EASY

MODULE HW
Module -2
Prarambh exercise 1- 9,10,21
Prabal ex 2- 2,3,7

Samapti Sinha Mahapatra

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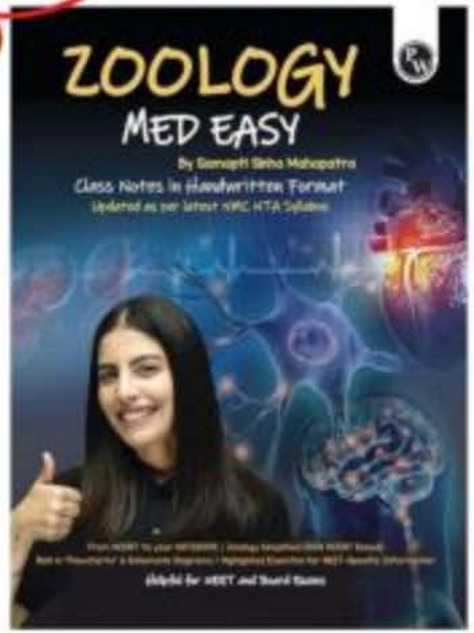

THANK YOU