

UPDAAN

2025

LIFE PROCESSES

Biology

Lecture - 12

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Topics to be covered

1 Excretion in plants ✓

2 MCQ practice ✓

+ (PYQ) + (imp MCQ
imp subj)

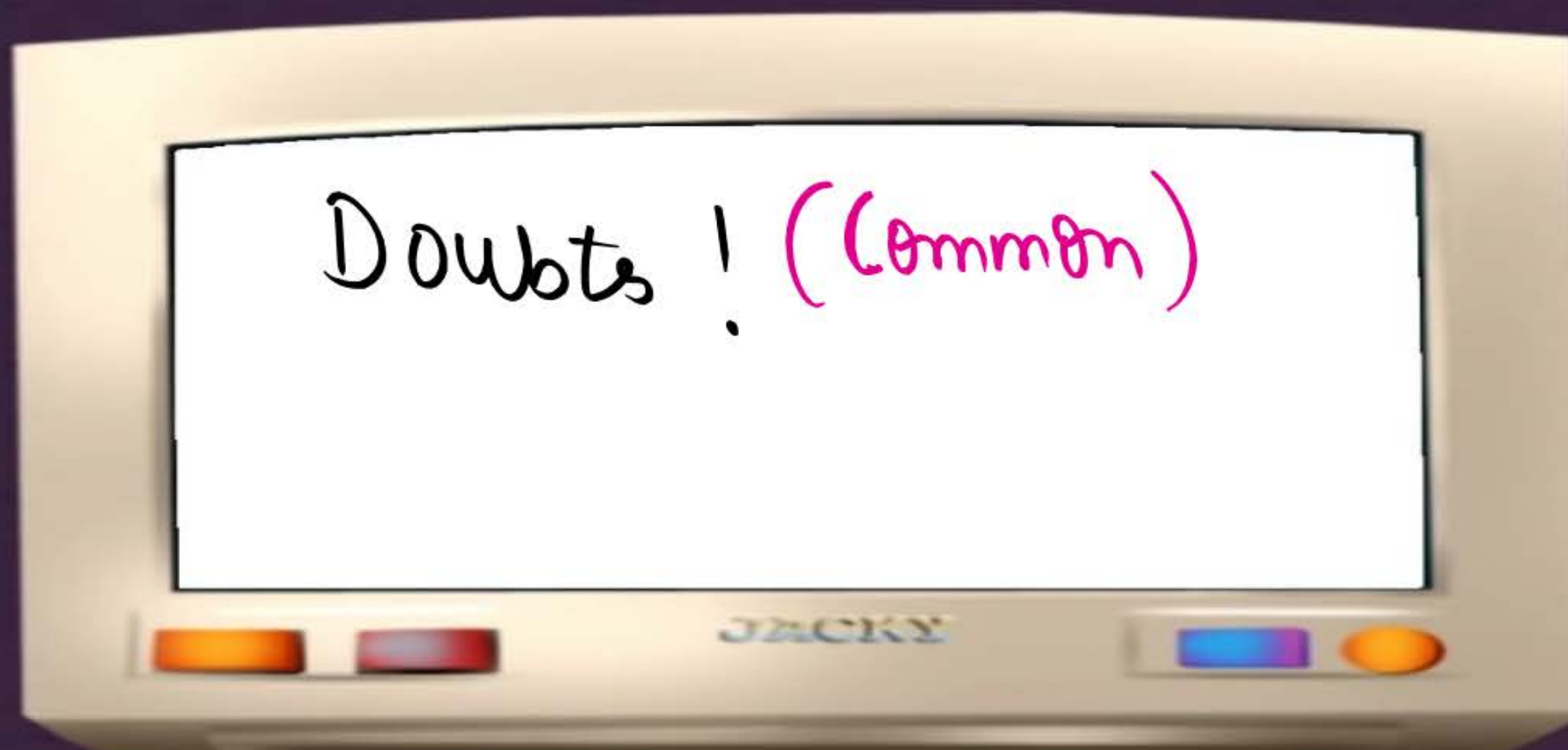
3 ✓ Doubt Discussion





* Sam-Cuties

Dowbots ! (Common)



Think and answer

Q.1



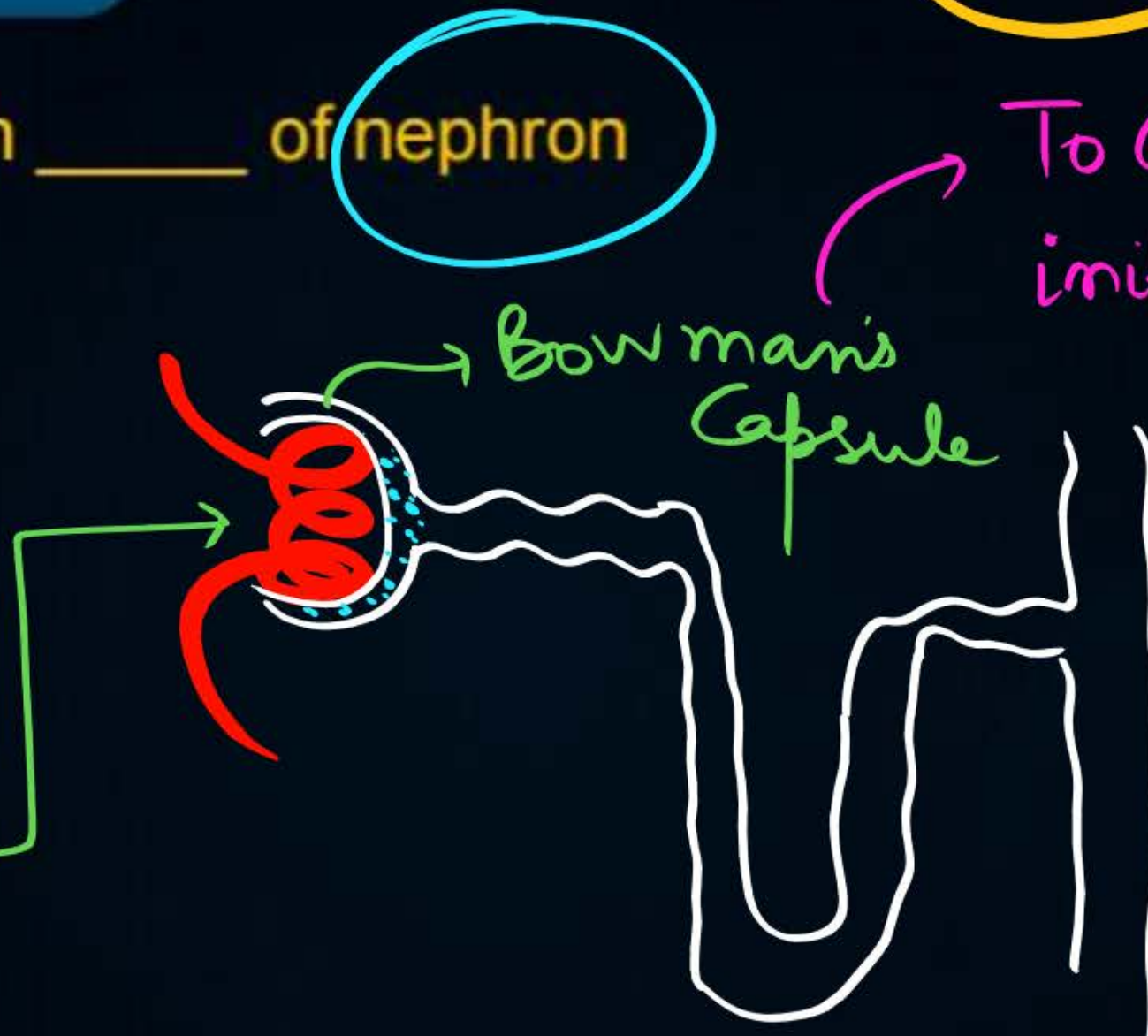
Filtration of blood occurs in _____ of nephron

A Tubule

B Bowman's capsule

☒ C Glomerulus

D Collecting duct



To Collect the initial filtrate



1. ✓
 2. ✓
 3. ✓
 4. ✓
 5. ✓
 6. ✓
- 20.

5/20 10/20

Samridhi = ?/20
Sharma.

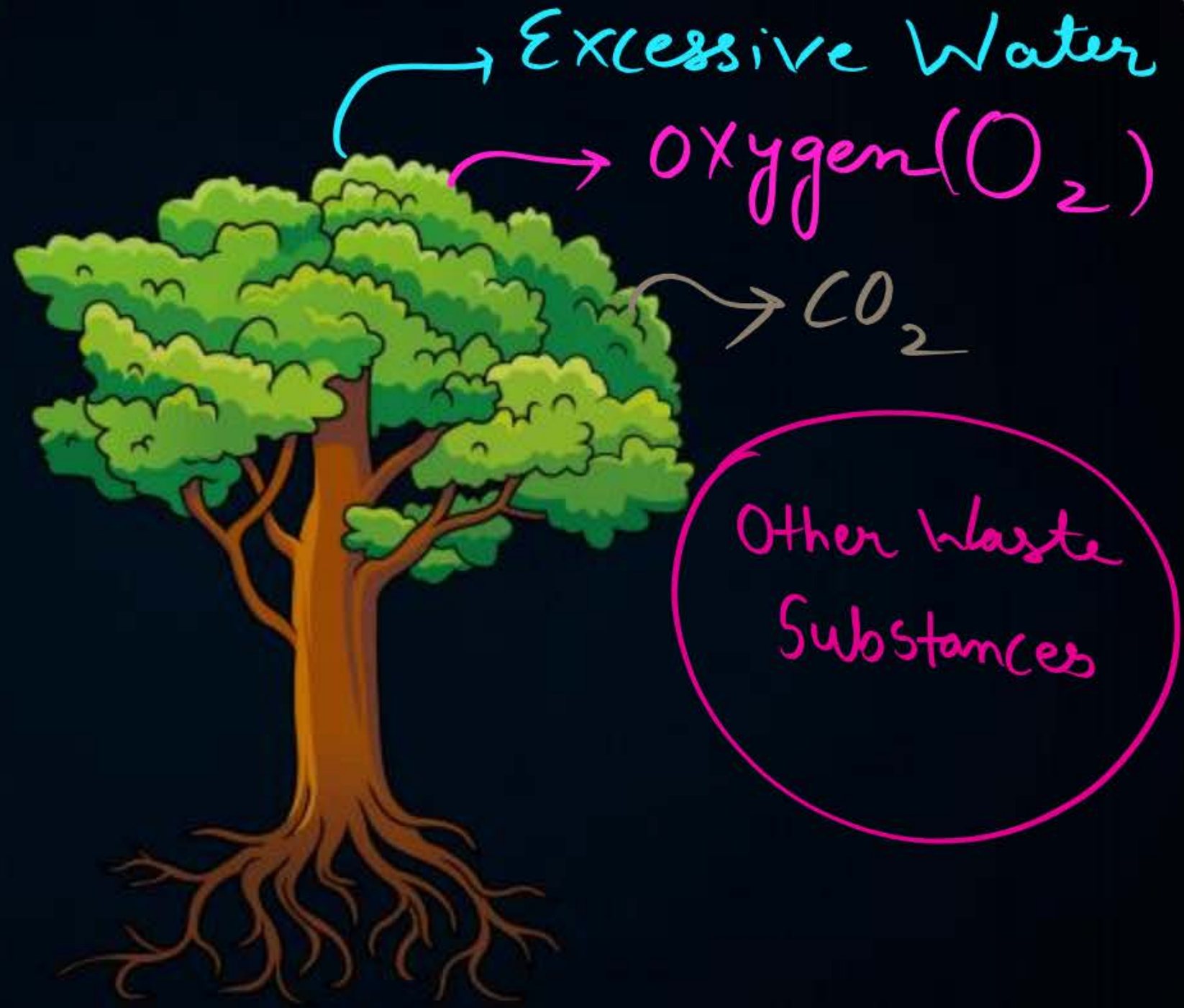
20/20



Excretion in plants

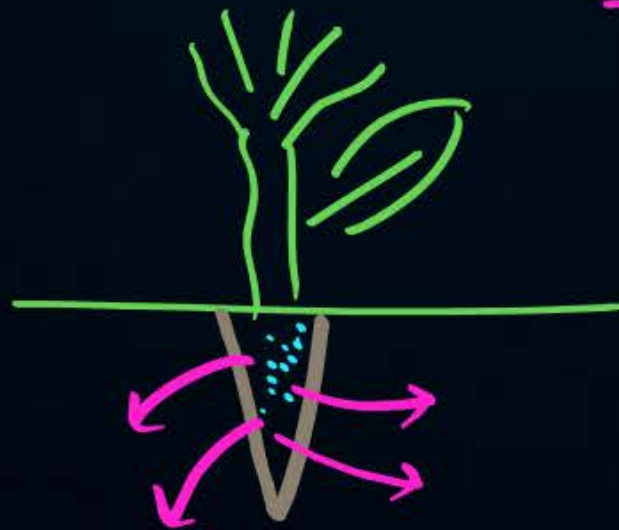


Latex →



Plants use different strategies for excretion of different products

- Oxygen and carbon dioxide is diffused through stomata.
- Excess water is removed by transpiration.
- Plants can even loose some of their old parts like old leaves and bark of tree.
- Many plant waste products are stored in cellular vacuoles.
- Other waste products like latex, ^{Resin} raisins and gums are stored in old xylem cells.
- Plants also secrete some waste substances into the soil around them.



* Concepts (Theory) ✓

* Activity + Yellow Box

* NCERT Ques Solⁿ.

(1) Intext Q's

(2) Exercise Q's

Recorded Lecture



Udaan 2025



Bio



NCERT Solⁿ.

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Syllabus and weightage

Analysis

Life process → 7-8 marks



Lists of Concept Names	Years				
	2020	2021	2022	2023	2024
✓ Nutrition (Living Being : Basic concept of nutrition in plants and animals)	1 Q (3 M)	Exam not conducted	—	2 Q (1 M Each) 1 Q (3 M)	1 Q (1 M) 1 Q (2 M)
✓ Respiration (Basic concept of respiration in plants and animals)	—		—	1 Q (1 M) 1 Q (3 M)	1 Q (1 M) 1 Q (3 M)
✓ Transportation (Basic concepts of transport in plants and animals)	1 Q (5 M)		—	1 Q (2 M)	—
✓ Excretion (Basic concepts of excretion in plants and animals)	—			1 Q (2 M)	—

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PYQ's and Important

**Multiple choice
questions**

QUESTION



An organism which breaks down the food material outside the body and then absorbs it is

Externally

digest

(Re) (CBSE, 2023)

A a plant parasite, *Cuscuta*

B an animal parasite, Tapeworm

C a bacteria, *Rhizobium*

☒ D a fungi, *Rhizopus*

Bread Mould

Saprophytes

Q-2

QUESTION

Q-3 ✓



Which one of the following conditions is true the state of stomata of a green leaf shown in the given diagram? (An)

(CBSE, 2022 Term I)

A Large amount of water flows into the guard cells.

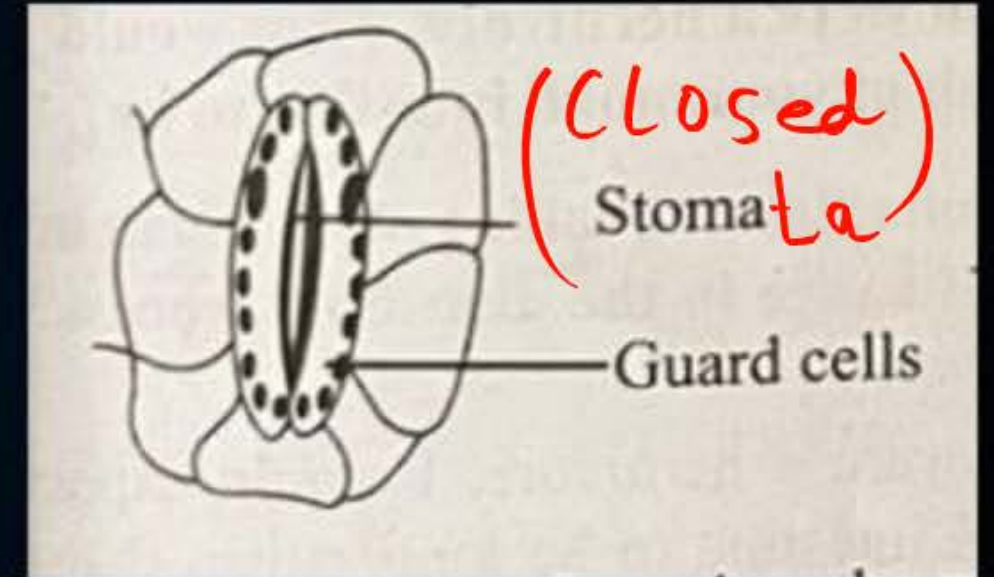
→ Stomata open

B Gaseous exchange is occurring in large amount. ✗

C Large amount of water flows out from the guard cells.

→ Stomata closed

D Large amount of sugar collects in the guard cells.



QUESTION

Q-4 ✓



Gastric juice is secreted by gastric glands and contains hydrochloric acid, mucus, and pepsin. Which activity will be affected in the absence of hydrochloric acid?

(Un)

- ☒ A Digestion of proteins
- ☐ B Digestion of carbohydrates
- ☐ C Digestion of lipids
- ☐ D Digestion of starch

Stomach → gastric glands
↓
gastric Juice
① Pepsin
② HCL
③ Mucus

QUESTION



Which is the correct sequence of air passage during inhalation?

(Re) (NCERT Exemplar)

A Nostrils → Larynx → Pharynx → Trachea → Lungs ~~X~~

B Nasal passage → Trachea → Pharynx → Larynx → Alveoli ~~X~~

C Larynx → Nostrils → Pharynx → Lungs → Alveoli ~~X~~

☒ D Nostrils → Pharynx → Larynx → Trachea → Alveoli

Q-5



O_2

QUESTION

Q-6 ✓



✓
Assertion (A): The inner walls of the small intestine have finger like projections called villi which are rich in blood. ✓ (True)

Reason (R): These villi have a large surface area to help the small intestine in completing the ~~digestion~~ of food. (False)
absorption
(Re) (CBSE, 2023)

- A Both A and R are true, and R is the correct explanation of A.
- B Both A and R are true, but R is not the correct explanation of A.
- ✓ C A is true, but R is false.
- D A is false, but R is true.

QUESTION



← anaerobic Respⁿ.
alcoholic

Q.7 ✓

The correct sequence of anaerobic reactions in yeast is

(Re) (NCERT Exemplar)

- A Glucose $\xrightarrow{\text{Cytoplasm}}$ Pyruvate $\xrightarrow{\text{Mitochondria}}$ Ethanol + Carbon dioxide
- B Glucose $\xrightarrow{\text{Cytoplasm}}$ Pyruvate $\xrightarrow{\text{Cytoplasm}}$ Lactic acid
- C Glucose $\xrightarrow{\text{Cytoplasm}}$ Pyruvate $\xrightarrow{\text{Mitochondria}}$ Lactic acid
- D Glucose $\xrightarrow{\text{Cytoplasm}}$ Pyruvate $\xrightarrow{\text{Cytoplasm}}$ Ethanol + Carbon dioxide

QUESTION

B → Pulmonary Vein (Lungs → L.A)

A → Pulmonary artery (R.V → Lungs) → CO₂



Consider the following statements in connection with the functions of the blood vessels marked A and B in the diagram of a human heart as shown.

- (i) ✓ Blood vessel A – It carries carbon dioxide rich blood to the lungs.
- (ii) ✓ Blood vessel B – It carries oxygen rich blood from the lungs.
- (iii) ✓ Blood vessel B – Left atrium relaxes as it receives blood from this blood vessel.
- (iv) ✗ Blood vessel A – Right atrium has thick muscular wall as it has to pump blood to this vessel.

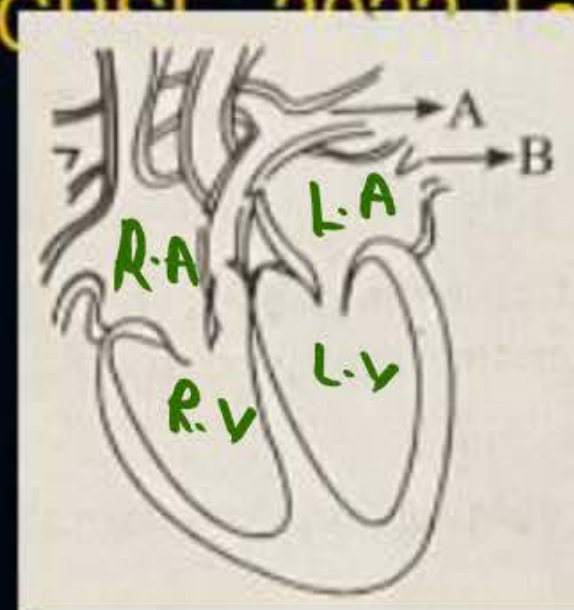
Q-8 ✓

A (i) and (ii) only

B (ii) and (iii) only

C (ii), (iii) and (iv)

✓
✓
✓
D (i), (ii) and (iii)



(An) (CNC 2022 Term I)

QUESTION

H.Q

Q.9



Blood from superior vena cava flows into

☒ A right atrium

☐ B right ventricle

☐ C left atrium

☐ D left ventricle

Vein → Towards the heart

Right side

(Re)

QUESTION



Q-10 ✓

What is the primary purpose of the Bowman's capsule in the human kidney?

(Un)

- A Production of urine
- B Absorption of glucose



☒ C Collection of blood filtrate

D Secretion of hormones

QUESTION

Q-11 ✓



Patient X was suffering from a pancreatic condition due to which the pancreas was not functioning adequately.

Which of the following is a doctor likely to suggest to such an individual?

- ☒ A Including a large amount of protein in the diet ✗
- ☐ B eating a diet with low-fat content
- ☐ C eating only carbohydrates ✗
- ☒ D including only liquid foods

(An)

Pancreatic Juice

- ① P. amylase → Carbohydrate
- ② Trypsin → protein
- ③ Lipase → Fats

QUESTION



Q.12 ✓

The length of small intestine in a deer is more as compared to the length of small intestine of a tiger. The reason for this is.

(Un) (CBSE, 2022 Term I)

- A Mode of intake of food.
- ☒ B Type of food consumed.
- C Presence or absence of villi in intestines.
- D Presence or absence of digestive enzymes.

Cell Wall
Cellulose

QUESTION



→ guard cells

Q.13 ✓

Opening and closing of stomata is due to:

(Re) (CBSE, 2023)

- ☐ A High pressure of gases inside the cells
- ☒ B Movement of water in and out of the guard cells ✓✓
- ☐ C Stimulus of light in the guard cells
- ☐ D Diffusion of CO_2 in and out of the guard cells

QUESTION

→ Transpirational pull

Q.14 ✓



(Un)

The process of transpiration in plants helps in

- A opening of stomata
- B Absorption of CO_2 from atmosphere
- ☒ C upward conduction of water and minerals
- D absorption of O_2 from atmosphere

QUESTION



Q-15 ✓

Red → RBC

One of the difference between blood and lymph is that

(Re)

- ☒ A Blood has RBCs and WBCs while lymph has Lymphocytes. ✓
→ WBC.
- ☐ B Blood has RBCs while lymph has no WBCs. ✗
- ☐ C Blood has WBCs while lymph has RBCs. ✗
→ Colourless.
- ☐ D Blood has dissolved organic salts while lymph has no such inorganic salt.

QUESTION

Reabsorption \rightarrow ? H_2O , Glucose, A. Acids



If the tubule segment of the nephron is completely non-functional in an individual, how will this impact the process of urine formation?

- A Urine formation will not occur.
- B The quality and quantity of urine remain unaffected.
- C Urine becomes more concentrated.
- ☒ D Urine becomes more diluted.



QUESTION

Q-17 ✓



Respiratory structures of two different animals—a fish and a human being are as shown. Observe (a) and (b) and select one characteristic that holds true for both of them.

A Both are placed internally in the body of animal. ✗

B Both have thin and moist surface for gaseous exchange. ✓✓

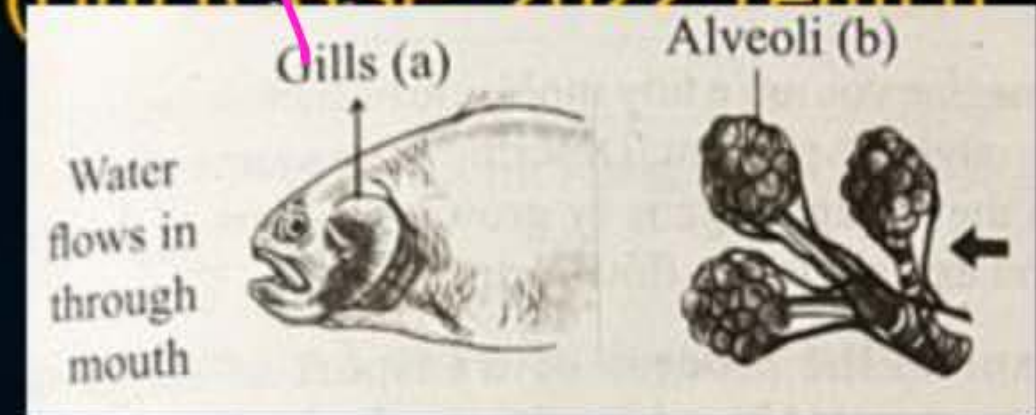
C Both are poorly supplied with blood vessels to conserve energy. ✗

D In both the blood returns to the heart after being oxygenated.

↳ CO₂

outside

(Un) (CBSE 2022 Term I)



→ deoxygenated

Consider the following statements about small intestine and select the one which is NOT correct:

(An) (CBSE, 2023)

- A The length of the small intestine in animals differs as it depends on the type of food they eat. ✓
- B The small intestine is the site of complete digestion of food. ✓
- C The small intestine receives secretions from liver and pancreas. ✓
- D ✓ The villi of the small intestine absorb water from the unabsorbed food before it gets removed from the body via the anus. ✗

QUESTION



④ ⊕

Q-19 ✓

Assertion (A): Birds have their left and right side of the heart separated for more efficient supply of oxygen to the body. (T)

Reason (R): Birds need high energy to maintain their body temperatures. (T) (Un)

- ☒ A Both A and R are true, and R is the correct explanation of A.
- ☐ B Both A and R are true, but R is not the correct explanation of A.
- ☐ C A is true, but R is false.
- ☐ D A is false, but R is true.

QUESTION

Q-20 ✓



Assertion (A): In humans a major amount of water is reabsorbed by the tubular part of nephron. (T)

Reason (R): Reabsorption of water depends on the dissolved waste to be excreted from the body. →

(Un)

- ☒ A Both A and R are true, and R is the correct explanation of A.
- ☐ B Both A and R are true, but R is not the correct explanation of A.
- ☐ C A is true, but R is false.
- ☐ D A is false, but R is true.



My top 10
Question

QUESTION



- (a) State the role played by the following in the process of digestion:
- (b) Enzyme trypsin ✓
- (c) Enzyme lipase ✓
- (d) List two functions of finger-like projections present in the small intestine. (2020)

QUESTION

Food + Oxygen ✓



Explain the significance of photosynthesis. Write the balanced chemical equation involved in the process.

(Board Term I, 2017)

QUESTION



Explain with the help of neat and well labelled diagrams the different steps involved in nutrition in Amoeba,

(Board Term I, 2015)

QUESTION



faster
↑

- (a) Why is there a difference in the rate of breathing between aquatic organisms and terrestrial organisms? Explain ✓
- (b) Draw a diagram of human respiratory system and label – pharynx, trachea, lungs, diaphragm and alveolar sac on it.

✓ (2020)

QUESTION



✓ Draw a flow chart showing the three different pathways involved in the breakdown of glucose in different organisms. Name the respiratory pigment present in human beings. State the function of rings of cartilage present in our throat.

(Board Term I, 2015)

QUESTION



Give reasons:

- (a) Ventricles have thicker muscular walls than atria.
- (b) Transport system in plants is slow. → *dead cell / move*
- (c) Circulation of blood in aquatic vertebrates differs from that in terrestrial vertebrates.
- (d) During the daytime, water and minerals travel faster through xylem as compared to the night. → *Transpirational pull* ✓
- (e) Veins have valves whereas arteries do not.

Back flow

(2020)

QUESTION



- (a) “Blood circulation in fishes is different from the blood circulation in human beings”. Justify the statement. ✓✓
- (b) Describe “blood circulation” in human beings. ✓✓

(2020)

QUESTION

lungs → P.V → L.A → L.V

Aorta

Body parts

- (a) Mention any two components of blood.
- (b) Trace the movement of oxygenated blood in the body. ✓
- (c) Write the function of valves present in between atria and ventricles.
- (d) Write one structural difference between the composition of artery and veins.

(2018)



QUESTION



- (a) Name the organs that form the excretory system in human beings.
- (b) Describe in brief how urine is produced in human body.

(2020)

QUESTION



- (a) Draw a well-labelled diagram of structural and functional unit of kidney.
- (b) Explain the mechanism of the urine formation.

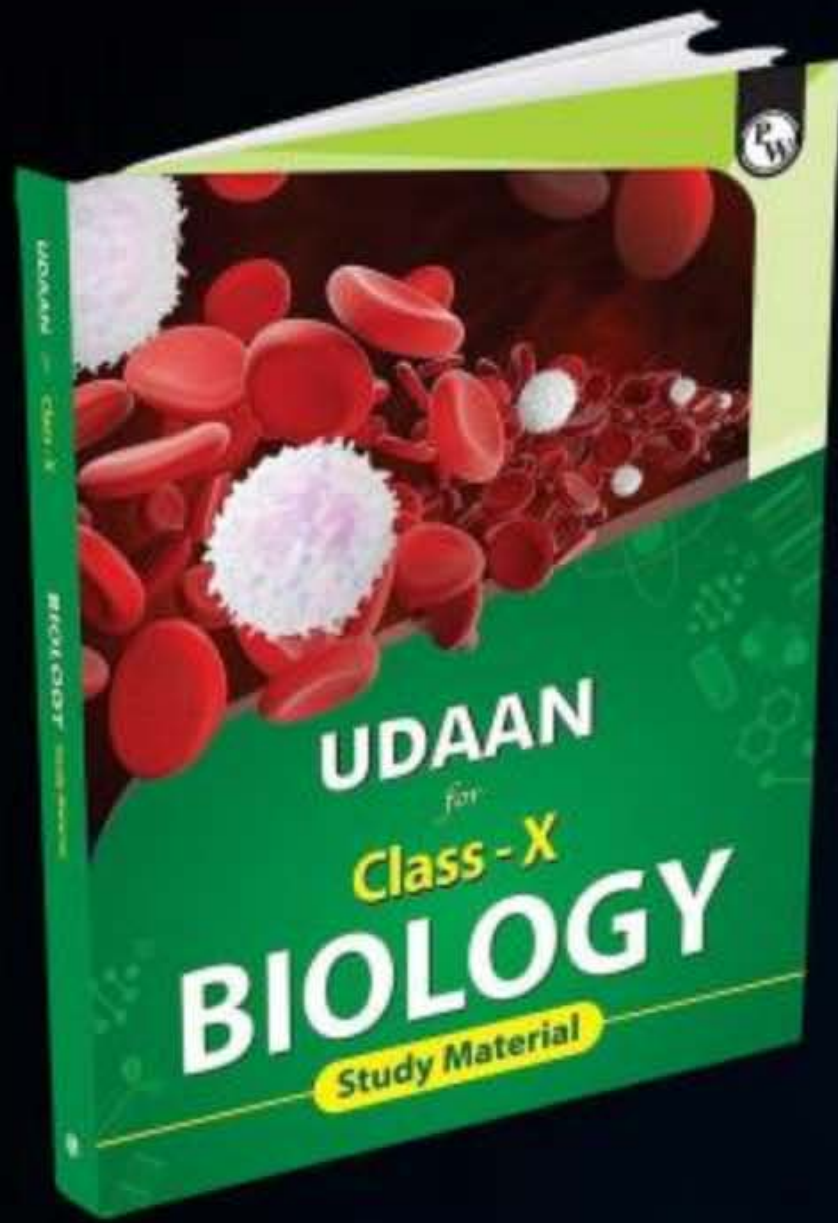
Nephron

(Board Term I, 2013)

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Common Doubts

Homework



FROM PW MODULE
(Udaan - CLASS 10)

PAGE : 56 — Q-23 , Q-24

20/20



THANK
YOU

