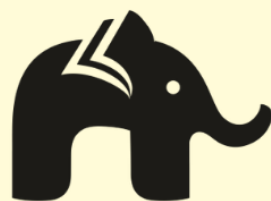


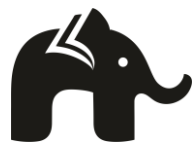


PRACTICE MCQS

CLASS 10 SCIENCE (TERM - I)
LIFE PROCESSES

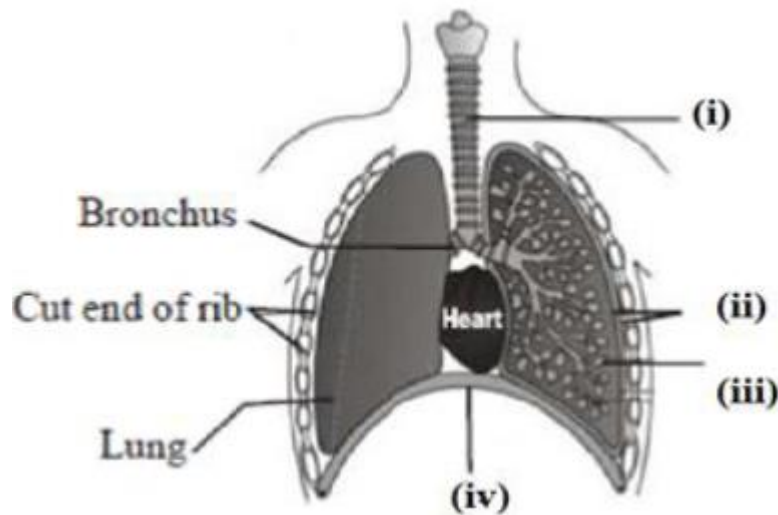
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Question 1:

Carefully study the diagram of the human respiratory system with labels (a), (b), (c) and (d). Select the option which gives correct identification and main function and /or characteristic.



- (a) (i) Trachea: It is supported by bony rings for conducting inspired air.
- (b) (ii) Ribs: When we breathe out, ribs are lifted.
- (c) (iii) Alveoli: Thin-walled sac like structures for exchange of gases.
- (d) (iv) Diaphragm: It is pulled up when we breathe in.

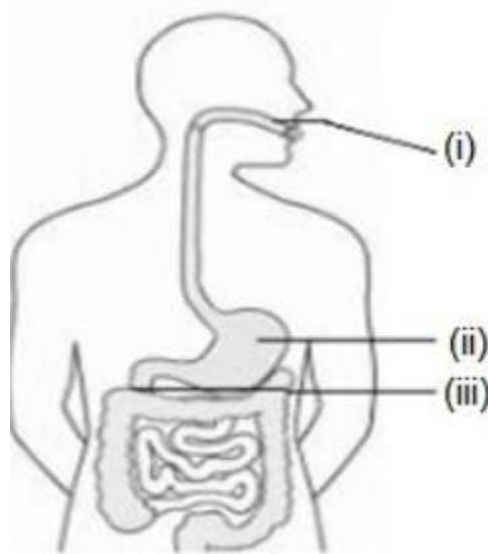
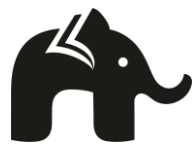
Answer: (c) (iii) Alveoli: Thin-walled sac-like structures for exchange of gases.

When we breathe out, diaphragm relaxes and moves upward into the chest cavity. The inter-coastal muscles between the ribs also relax to make the chest cavity smaller.

Diaphragm is pulled down when we breathe in.

Question 2:

Identify the option that indicates the correct enzyme that is secreted in location A, B and C.



- (a) (i)-lipase, (ii)-trypsin, (iii)-pepsin
- (b) (i)-amylase, (ii)-pepsin, (iii)-trypsin
- (c) (i)-trypsin, (ii)-amylase, (iii)-carboxylase
- (d) (i)-permease, (ii)-carboxylase, (iii)-oxidase

Answer: (b) (i)-amylase, (ii)-pepsin, (iii)-trypsin

Trypsin is secreted by pancreas which helps in digesting proteins.
Salivary amylase is present in saliva which helps in digesting starch.
Pepsin secreted by gastric glands which helps in protein digestion.

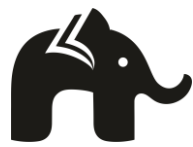
Question 3:

Opening and closing of stomatal pore depends on

- (a) atmospheric temperature
- (b) oxygen concentration around stomata
- (c) carbon dioxide concentration around stomata
- (d) water content in the guard cells

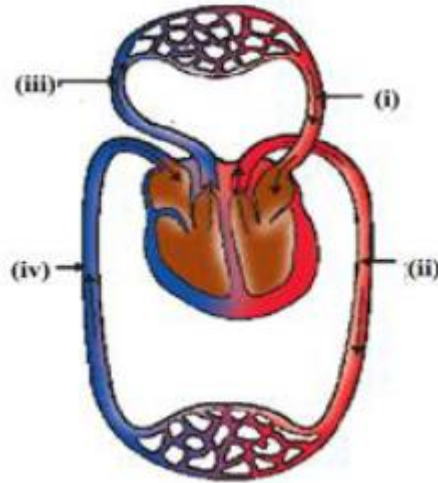
Answer: (d) water content in the guard cells

The opening of guard cells is facilitated by the entry of water inside guard cells which makes the cell turgid. The closing of guard cells is facilitated by water coming out of guard cells which make the guard cells flaccid.



Question 4:

The figure given below shows a schematic plan of blood circulation in humans with labels (i) to (iv). Identify the correct label with its functions.



- (a) (i) Pulmonary vein - takes impure blood from body part.
- (b) (ii) Pulmonary artery - takes blood from lung to heart.
- (c) (iii) Aorta - takes blood from heart to body parts.
- (d) (iv) Vena cava takes - blood from body parts to right auricle.

Answer: (d) (iv) Vena cava takes - blood from body parts to right auricle.

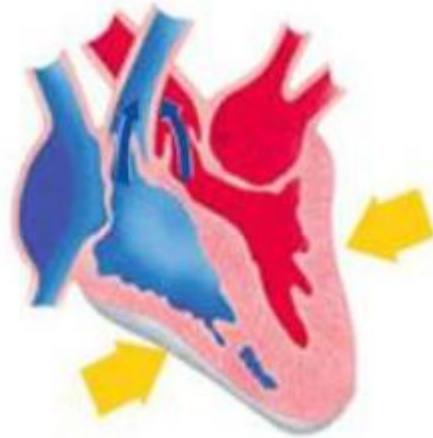
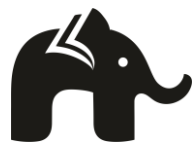
Pulmonary vein veins that transfer oxygenated blood from the lungs to the heart.

Pulmonary artery carries deoxygenated blood from the right side of the heart to the lung.

Aorta carries oxygen-rich blood from the left ventricle of the heart to other parts of the body.

Question 5:

Identify the phase of circulation which is represented in the diagram of heart given below. Arrows indicate contraction of the chambers shown.

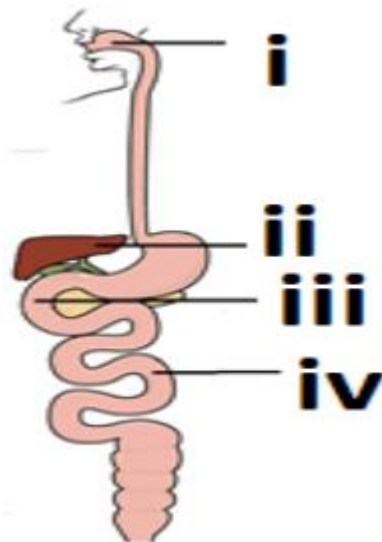


- (a) Blood transferred to the right ventricle and left ventricle simultaneously.
- (b) Blood is transferred to lungs for oxygenation and is pumped into various organs simultaneously.
- (c) Blood transferred to the right auricle and left auricle simultaneously.
- (d) Blood is received from lungs after oxygenation and is received from various organs of the body.

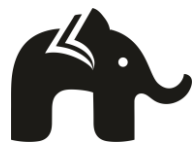
Answer: (b) Blood is transferred to lungs for oxygenation and is pumped into various organs simultaneously.

Question 6:

Observe the diagram of Human digestive system.



Match the labelling referred in column I and correlate with the function in column II.



Column I	Column II
i	a. The length of this depends on food the organism eats.
ii	b. Initial phase of starch digestion
iii	c. Increases the efficiency of lipase enzyme action
iv	d. This is the site of the complete digestion of carbohydrates, proteins and fats

- (a) i- a ; ii – b ; iii – c ; iv- d
- (b) i- b ; ii – c ; iii – d ; iv- a
- (c) i- b ; ii – d ; iii – c ; iv- a
- (d) i- d ; ii – a ; iii – b ; iv- c

Answer: (b) i- b ; ii – c ; iii – d ; iv- a

Question 7:

In which of the following groups of organisms, blood flows through the heart only once during one cycle of passage through the body?

- (a) Rabbit, Parrot, Turtle
- (b) Frog, Crocodile, Pigeon
- (c) Whale, Labeo, Penguin
- (d) Shark, Dog fish, Sting ray

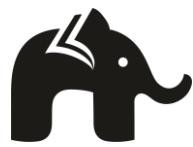
Answer: (d) Shark, dog fish, sting ray

When blood flows through the heart only once during one cycle of passage through the body is called single circulation.

Question 8:

What is common between extensive network of blood vessels around walls of alveoli and in glomerulus of nephron?

- (a) Thick-walled arteries richly supplied with blood
- (b) Thin-walled veins poorly supplied with blood
- (c) Thick-walled capillaries poorly supplied with blood
- (d) Thin-walled capillaries richly supplied with blood



Answer: (d) Thin-walled capillaries richly supplied with blood

Both alveoli and nephron have thin walled capillaries which are supplied with blood.

Question 9:

Plants use completely different process for excretion as compared to animals. Which one of the following processes is NOT followed by plants for excretion?

- (a) They can get rid of excess water by transpiration.
- (b) They selectively filter toxic substances through their leaves.
- (c) Waste products are stored as resins and gums in old xylem.
- (d) They excrete waste substances into the soil around them.

Answer: (b) They selectively filter toxic substances through their leaves.

Question 10:

Identify the option that indicates the correct enzyme that is secreted in location L, M and N. L, M and N represent Mouth cavity, stomach and small intestine of the human being.

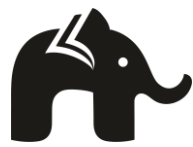
	L	M	N
(a)	lipase	trypsin	pepsin
(b)	amylase	pepsin	trypsin
(c)	trypsin	amylase	lipase
(d)	lipase	amylase	pepsin

Answer: (b) L-Amylase, M – Pepsin, N - Trypsin

Question 11:

Which of the following juices secreted in the human body does not contain an enzyme?

- (a) Salivary juice
- (b) Bile juice
- (c) Gastric juice



(d) Pancreatic juice

Answer: (b) Bile juice

Bile juice secreted by the liver in the human body does not contain any enzyme. Bile salts present in bile juice breakdown fats into smaller globules increasing the efficiency of action of pancreatic lipase enzyme.

Question 12:

Given below are the functions of some parts of human circulatory system. Identify the correct match.

- (a) Pulmonary vein – takes oxygenated blood from body parts to heart
- (b) Artery – takes oxygenated blood from heart to lung
- (c) Dorsal aorta – takes deoxygenated blood from heart to body parts
- (d) Vena cava – takes deoxygenated blood from body parts to right atrium

Answer: (d) Vena cava – takes deoxygenated blood from body parts to right atrium

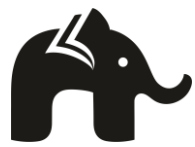
Question 13:

What happens when right and left ventricle contract during pumping of blood by human heart?

- (a) Blood transferred to the right ventricle and left ventricle simultaneously.
- (b) Blood is transferred to lungs for oxygenation and is pumped into various organs simultaneously.
- (c) Blood transferred to the right atrium and left atrium simultaneously.
- (d) Blood is received from lungs after oxygenation and is received from various organs of the body.

Answer: (b) Blood is transferred to lungs for oxygenation and is pumped into various organs simultaneously.

Blood is pumped to various body organs by left ventricle and blood is pumped to heart for oxygenation by right ventricle.



Question 14:

Order of toxicity among ammonia, urea and uric acid, from lower to higher, is

- (a) uric acid < urea < ammonia
- (b) uric acid < ammonia < urea
- (c) ammonia < urea < uric acid
- (d) urea < uric acid < ammonia

Answer: (a) uric acid < urea < ammonia

Nitrogenous wastes are produced in the body needs to be excreted out. It is excreted in form of urea, uric acid or ammonia.

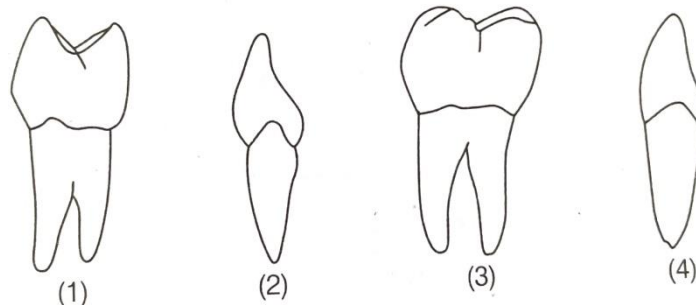
Ammonia is the most toxic of all three. It is excreted by protozoans, crustaceans, hence called as ammonotelic animals.

Urea requires is less toxic than ammonia, it is excreted by animals such as fish, amphibians. These animals are called as ureotelic animals.

Uric acid is least toxic. This is excreted by animals such as birds.

Question 15:

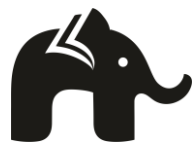
Which of these human teeth are used for grinding?



- (a) 1 and 3
- (b) 1 and 4
- (c) 2 and 3
- (d) 2 and 4

Answer: (a) 1 and 3

Teeth 1 and 3 contain cusps, peculiar characteristic of molars and premolars which are used to grind the food.



Question 16:

In which of the following groups of organisms, food material is broken down outside the body and then absorbed in?

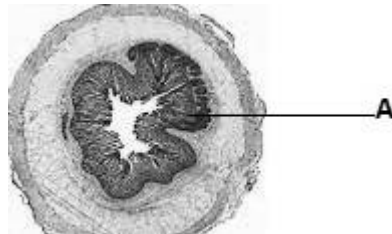
- (a) mushroom, green plants, amoeba
- (b) yeast, mushroom, bread mould
- (c) paramecium, amoeba, cuscuta
- (d) cuscuta, lice, tapeworm

Answer: (b) yeast, mushroom, bread mould

The organism which break down food material outside the body and then food is absorbed in, are called saprotrophs. They release specific enzymes that act on complex organic matter and break them into smaller and simpler particles that are easily consumable by the organism.

Question 17:

The diagram represents a section through the small intestine.

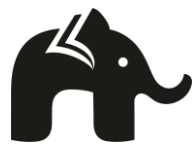


What is the role of the structures labelled X?

- (a) They help to move the food along.
- (b) They make a large surface area for absorption.
- (c) They protect against bacteria.
- (d) They move mucus over the surface.

Answer: (b) They make a large surface area for absorption.

Structure X shows microvilli which increase the surface area for absorption of products of digestion.



Question 18:

In a person the tubule part of the nephron is not functioning at all. What will its effect be on urine formation?

- (a) The urine will not be formed.
- (b) Quality and quantity of urine is unaffected.
- (c) Urine is more concentrated.
- (d) Urine is more diluted.

Answer: (d) Urine is more diluted.

Question 19:

Crop plants are grown in well-watered soils. Their root hair cells have higher concentration of mineral ions than in the surrounding medium. What processes are used by these plants to absorb water and mineral ions?

- | Water | Mineral ions |
|---------------|----------------|
| (a) active | uptake Osmosis |
| (b) diffusion | osmosis |
| (c) osmosis | diffusion |
| (d) osmosis | active uptake |

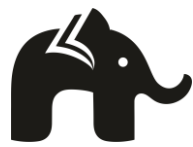
Answer: (d) osmosis active uptake

Xylem vessels transport water in plants which is absorbed by root hair. This occurs through the process of osmosis. Mineral ions are actively absorbed from soil against the concentration gradient by using ATP.

Question 20:

The passage of ascent of sap is shown by

- (a) osmometer
- (b) porometer
- (c) manometer
- (d) blockage experiment



Answer: (d) blockage experiment

Dixon and Jolly demonstrated the process of translocation of water and minerals from base to apex of plant. It is called as ascent of sap. This was done via blockage experiment.

Assertion Reason Based Questions

Answer these questions selecting the appropriate option given below:

- (a) Both A and R are true and R is the correct explanation of A
- (b) Both A and R are true and 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 21:

A: Lungs always contain a residual volume of air.

R: It is to ensure enough time for the release of carbon dioxide and for the absorption of oxygen.

Answer: (a) Both A and R are true and R is the correct explanation of A

During the breathing cycle, when air is inhaled and exhaled, lungs always contain a residual volume of air so as to ensure that there is sufficient time for the oxygen to be absorbed and for the carbon dioxide to be released.

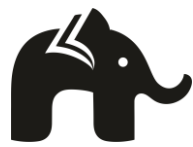
Question 22:

A: Transpiration is a process in which water is lost in the form of water vapour.

R: Transpiration occurs through the guard cells present on the leaves.

Answer: (c) A is true but R is false

Transpiration is a process in which water is lost in the form of water vapour. It occurs through the stomata present on the leaves.

**Question 23:**

A: Arteries are thick walled and elastic in nature.

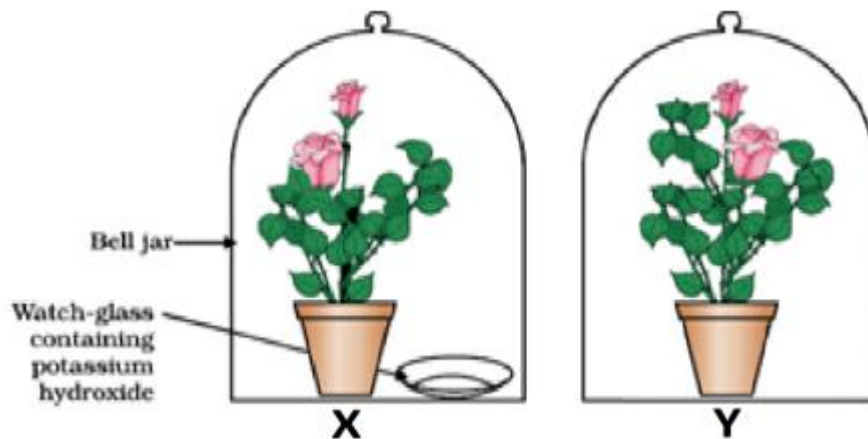
R: Arteries have to transport blood.

Answer: (b) Both A and R are true and R is not the correct explanation of A

Case-Study Based Questions

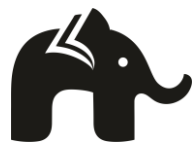
Question 24:

The Figure shown below represents an activity to prove the requirements for photosynthesis. During this activity, two healthy potted plants were kept in the dark for 72 hours. After 72 hours, KOH is kept in the watch glass in setup X and not in setup Y. Both these setups are air tight and have been kept in light for 6 hours. Then, Iodine Test is performed with one leaf from each of the two plants X and Y.



1. This experimental set up is used to prove essentiality of which of the following requirements of photosynthesis?

- (a) Chlorophyll
- (b) Oxygen
- (c) Carbon dioxide
- (d) Sunlight



2. The function of KOH is to absorb

- (a) Oxygen
- (b) Carbon dioxide
- (c) Moisture
- (d) Sunlight

3. Which of the following statements shows the correct results of Iodine Test performed on the leaf from plant X and Y respectively?

- (a) Blue - black colour would be obtained on the leaf of plant X and no change in colour on leaf of plant Y.
- (b) Blue - black colour would be obtained on the leaf of plant Y and no change in colour on leaf of plant X.
- (c) Red colour would be obtained on the leaf of plant X and brown colour on the leaf of plant Y.
- (d) Red colour would be obtained on the leaf of plant Y and brown colour on the leaf of plant X

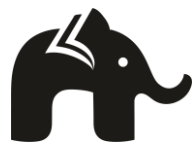
4. Which of the following steps can be followed for making the apparatus air tight?

- i. placing the plants on glass plate
 - ii. using a suction pump
 - iii. applying vaseline to seal the bottom of jar
 - iv. creating vacuum
- (a) i and ii
 - (b) ii. and iii
 - (c) i. and iii
 - (d) ii. and iv

Answer:

1. (c) Carbon dioxide

2. (b) Carbon dioxide



3. (b) Blue - black colour would be obtained on the leaf of plant Y and no change in colour on leaf of plant X.

4. (c) i and iii

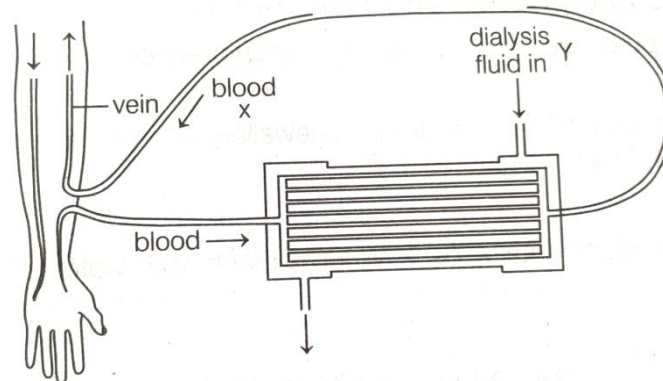
Question 25:

The main function of human excretory system is to remove the nitrogenous waste such as urea from the body. It includes kidney, two ureters, a urinary bladder and urethra. The purpose of making urine is to filter out waste products from blood. These wastes are removed from the blood by kidneys and are passed down to the urinary bladder by a pair of ureters. The urethra further carries the urine out of the body. The phenomenon of discharging urine to outside is called urine.

1. Which of the following is an example of excretion?

- (a) release of insulin from the pancreas
- (b) release of saliva from the salivary glands
- (c) removal of carbon dioxide from the lungs
- (d) removal of faeces from the alimentary canal

2.



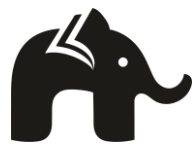
Which substances have the lowest concentration of X and the highest concentration of Y?

Lowest conc. of X

Highest conc. of Y

(a) Glucose

Salts



- | | |
|-----------|---------|
| (b) Salts | Glucose |
| (c) Urea | Water |
| (d) Water | Urea |

3. How is the working of kidney dialysis machine similar to that of a healthy human kidney?

- (a) It takes sugar molecules out of the blood
- (b) It regulates the concentration of the blood
- (c) It deaminates amino acids to urea
- (d) It removes large molecules from the blood.

4. Choose the correct path of in our body.

- (a) Kidney – Ureter – Urethra – Urinary bladder
- (b) Kidney – Urinary bladder – Urethra – Ureter
- (c) Kidney – Ureter – Urinary bladder – Urethra
- (d) Urinary bladder – Kidney – Ureter – Urethra

5. If Henle's loop were absent from mammalian nephron, which one of the following to be expected?

- (a) There will be no urine formation.
- (b) There will be hardly any change in the quality and quantity of urine formed.
- (c) The urine will be more concentrated.
- (d) The urine will be more dilute.

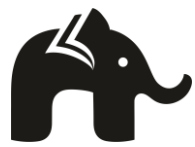
Answer:

1. (b) release of saliva from the salivary glands

Excretion is the removal of harmful waste products of metabolic reaction in the body. Both insulin and saliva secretion produced by glands.

2. (c) Urea Water

Urea from blood has diffused into dialysis fluid in the dialysis. Hence, blood returning to the blood X has a low concentration of urea. Fresh dialysis fluid enters the dialysis machine at so it should have a high concentration of water molecule.



3. (b) It regulates the concentration of the blood

The concentration of blood is regulated due to the gradient set up in the patient blood having higher concentration of urea and mineral salts and dialysis fluid surrounding the tubules.

4. (c) Kidney – Ureter – Urinary bladder – Urethra

5. (a) There will be no urine formation.
