



BIOLOGY

BOOKS - ZEN BIOLOGY (KANNADA ENGLISH)

LIFE PROCESSES

Questions Section In Text Questions

1. Why is diffusion insufficient to meet the oxygen requirement of multicellular organisms like humans?

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2. What criteria do we use to decide whether something is alive?



7. What is the role of acid in our stomach ?
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8. What is the function of digestive enzymes ?
Watch Video Solution
9. How is the small intestine designed to absorb digested food ?
Vatch Video Solution
10 What advantage over equatic ergenism dates a terreastrial ergenism
bave with regard to obtaining ovvgen for respiration 2
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15. How are the lungs designed in human beings to maximise the area for

exchange of gases ?

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16. What are the components of the transport system in human beings ?

What are the functions of these components ?

Watch Video Solution

17. Why is it necessary to separate oxygenated and deoxygenated blood

in mammals and birds?



18. What are the components of the transport system in highly organised

plants ?





23. How is the amount of urine produced regulated ? Watch Video Solution **Questions Section Textual Questions** 1. The kidneys in human beings are a part of the system for Watch Video Solution 2. The xylem in plants are responsible for Watch Video Solution 3. The autotrophic mode of nutrition requires.

4. The breakdown of pyruvte to give carbon dioxide, water and energy

takes place in

Watch Video Solution

5. How are fats digested in our bodies ? Where does this process take

place ?

Watch Video Solution

6. What is the role of saliva in the digestion of food ?



7. What are the necessary conditions for autotrophic nutrition and what

are its by products ?

8. What are the differences between aerobic and anaerobic respiration ?

Name some organisms that use the anaerobic mode of repiration.

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9. How are the alveoli designed to maximise the exchange of gases?
Watch Video Solution
10. What would be the consequences of a deficiency of haemoglobin in our bodies ?
Watch Video Solution

11. Describe double circulation in human beings, Why is it necessary ?

12. What are the differences between the transport of materials in xylem and phloem.

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13. Compare the functioning of alveoli in lungs and nephron in the kidneys with respect to their structure and functioning.

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Zee Additional Questions Sections Multiple Choice Questions

1. One of these is not a life process

A. Respiration

B. Circulation

C. Reproduction

D. Excretion

Answer: c



- 2. One of these is not a part of stamen
 - A. Plants take in carbon dioxide through the stomata
 - B. Oxygen is released during respiration
 - C. Plants release water during photosynthesis
 - D. Plants release water during respiration

Answer: b



3. One of these absorb carbon dioxide

A. Potassium Hydroxide

B. Sodium Chloride

C. Potassium Chloride

D. Sodium Sulphate

Answer: a

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4. Number of stomata are minimum in one of these

A. Nerium

B. Lipase

C. Pepsin

D. Renin

Answer: a

5. One of these is secreted in the mouth

A. Amylase

B. Mango

C. Cactus

D. Rose

Answer: a

6. The structures labeled 'V' secretes



A. Bile juice

B. Insulin

C. Trypsin

D. Pancreatic juice

Answer: a

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7. One of these is a product of anaerobic respiration

A. Lactic acid

B. Ethanol

C. Pyruvic acid

D. Butanol

Answer: b

8. Name the ertery that supplies blood to the heart muscle.

A. Coronary artery

B. Pulmonary Vein

C. Pulmonary Artery

D. Aorta

Answer: a

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9. One of these is absent in lymph

A. Plasma

B. RBC

C. Platelets

D. WBC

Answer: b

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10. Water loss in plants takes place through
A. Leaves
B. Roots
C. Stem
D. Fruits
Answer: a
Watch Video Solution

11. The function of chlorophyll is to

A. Convert solar energy to chemical energy

B. Produce hydroxyl ions

C. Release oxygen

D. Produce ATP

Answer: a

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12. One of these is true with respect to left auricle

A. Pumps deoxygenated blood

B. Receives deoxygenated blood

C. Pumps oxygenated blood

D. Receives oxygenated blood

Answer: d

13. Fertilisation is the process of

A. transfer of male gamete to female gamete

B. fusion of nuclei of male and female gamete

C. adhesion of male and female reproductive organs

D. the formation of gametes by reproductive organ.

Answer: b

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14. In the excretory system of human being, some substances in the initial filtrate such as glucose, amino acids, salts and water are selectively reabsorbed in

A. urethra

B. nephron

C. ureter

D. urinary bladder

Answer: b



15. Pseudopodia are

A. small hair like structures in unicellular organisms

B. false feet developed in unicellular organisms.

C. long tube-like structure coming out of the mouth.

D. suckers which are attained to the walls of intestine.

Answer: b



16. Which one of the following statements is correct about the human circulatory system?

A. blood transports only oxygen not carbon dioxide.

B. human heart has 5 chambers.

C. Valves ensure that blood does not flow backwards.

D. Both oxygen rich and oxygen deficient blood gets mixed in the

heart.

Answer: c

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17. Anaerobic process

A. takes place in yeast during fermentation.

B. takes place in the presence of oxygen.

C. produces only energy in the muscles of human beings.

D. produces ethanol, oxygen and energy.

Answer: a



18. Most of the digestion and absorption of the food takes place in the

A. small intestine

B. liver

C. stomach

D. large intestine

Answer: a

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19. Choose the correct path of urine in our body

A. Kidney \rightarrow Ureter \rightarrow Urethra \rightarrow Urinary bladder

 $\textbf{B}. \textbf{Kidney} \rightarrow \textbf{Urinary bladder} \rightarrow \textbf{Urethra} \rightarrow \textbf{Ureter}$

 $\mathsf{C}.\mathsf{Kidney} \to \mathsf{Ureters} \to \mathsf{Urinary} \ \mathsf{bladder} \to \mathsf{Urethra}$

 $\texttt{D.Urinary bladder} \rightarrow \texttt{Kidney} \rightarrow \texttt{Ureter} \rightarrow \texttt{Urethra}$

Answer: c

- 20. Which of the following statements (s) is (are) correct?
- (i) Pyruvate can be converted into ethanol and carbon dioxide by yeast.
- (ii) Fermentation takes place in aerobic bacteria.
- (iii) Fermentation takes place in mitochondria.
- (iv) Fermentation is a form of anaerobic respiration.
 - A. (i) and (ii)
 - B. (ii) and (iv)
 - C. (i) and (iv)

D. (ii) and (iii)

Answer: c



- 21. Which of the following statements (s) is (are) correct?
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- (iv) Fermentation is a form of anaerobic respiration.
 - A. (i) and (ii)
 - B. (ii) and (iv)
 - C. (i) and (iv)
 - D. (ii) and (iii)

Answer: c

22. Which of the following equations is the summary of photosynthesis?

A.
$$6CO_2 + 12H_2O
ightarrow C_6H_{12}O_6 + 6O_2 + 6H_2O$$

 $\texttt{B.} \ \texttt{6} CO_2 + H_2O + \texttt{Sunlight} \rightarrow C_6H_{12}O_6 + O_2 + 6H_2O$

C.

 $6CO_2 + 12H_2O + ext{Chlorophyll} + ext{Sunlight}
ightarrow C_6H_{12}O_6 + 6O_2 + 6H_2$

D.

 $6CO_2 + 12H_2O + ext{Chlorophyll} + ext{Sunlight}
ightarrow C_6H_{12}O_6 + 6CO_2 + 6L_2O_6 + 6CO_2 + 6L_2O_2 + 6L_2O_$

Answer: c

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23. The blood leaving the tissues becomes richer in

A. Carbon dioxide

B. Water

C. Hemoglobin

D. Oxygen

Answer: a

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24. Select the correct statement

A. Heterotrophs do not synthesize their own food

B. Heterotrophs utilize solar energy for photosynthesis

C. Heterotrophs synthesize their own food

D. Heterotrophs are capable of converting carbon dioxide and water

carbohydrates.

Answer: a

- 25. Choose the correct statement
 - A. They have thick elastic walls, blood flows under high pressure,

collect blood from different organs and bring it back to the heart

- B. They have thin walls with valves inside, blood flows under low pressure and carry blood away from the heart to various organs of the body
- C. They have thick elastic walls, blood flows under low pressure carry blood from the heart to various organs of the body
- D. They have thick elastic walls without valves inside, blood flows under high pressure and carry blood away from theheart to different parts of the body.

Answer: d

26. Single circulation, i.e., blood flows through the heart only once during one cycle of passage through the body, is exhibited by

A. Labeo, Chameleon, Salamander

B. Hippocampus, Exocoetus, Anabas

C. Hyla, Rana, Draco

D. whale, dolphin, turtle

Answer: b

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27. Which is the correct sequence of air passage during inhalation?

A. Nostrils \rightarrow Larynx Pharynx \rightarrow Trachea \rightarrow Lungs

B. Nasal passage \rightarrow Trachea \rightarrow Pharynx \rightarrow Larynx \rightarrow Alveoli

C. Larynx \rightarrow Nostrils \rightarrow Pharynx \rightarrow Lungs

D. Nostrils \rightarrow Pharynx \rightarrow Larynx Trachea \rightarrow Alveoli

Answer:



29. A few drops of iodine solution were added to rice water. The solution turned blue-black in colour. This indicates that rice water contains

A. Complex proteins

B. Simple proteins

C. Fats

D. Starch

Answer: d

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30. If salivary amylase is lacking in the saliva, which of the following events in the mouth cavity will be affected?

A. Proteins breaking down into amino acids

B. Starch breaking down into sugars

C. Fats breaking down into fatty acids and glycerol

D. Absorption of vitamins

Answer: b



31. Explain the process of digestion in the small intestine of man.

Digestion of food in small intestine :

A. acidic food is made alkaline by bile juice

B. food is made acidic by hydrochloric acid

C. starch is digested due to the action of amylase

D. protein is digested due to the action of pepsin

Answer: a

32. Adestarched leaf on a potted plant B was covered with black (A), White (B) and transparent (C) strips of paper as shown in the figure. After six hours of exposure to sunlight the leaf was removed from the plant and tested for observation?



- A. Whole leaf turned blue black
- B. Only B and C portions turned blue black
- C. Only A and B portion remained colourless and the rest of the leaf

turned blue to black.

D. A, B and C portions remained colourless and the rest of the leaf

turned blue - black

Answer: c

33. A student has set up an apparatus to show that $"CO_2$ is released during respiration". After about I hour he observes no change in the water level in the delivery tube. Write two possible reasons for the failure of the experiment.

A. The beaker had coloured water

B. The setup is airtight

C. No oxygen is available to seeds for respiration

D. Carbon dioxide is not being absorbed.

Answer: d



34. In an experiment to show that 'sunlight is necessary for photosynthesis', the leaf is boiled in alcohol for a few minutes using a

water bath. It is essential because:

- A. Alcohol is highly volatile
- B. Steam from the water bath heats the leaf rapidly
- C. Steam from the water dissolves the chlorophyll
- D. Alcohol is flammable

Answer: d

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35. A student covered a leaf from a destarched plant with a black paper strip and kept it in a garden outside his house in fresh air, In the evening he tested the covered portion of the leaf for the presence of starch. By doing so the student was trying to show that:

A. CO_2 is given out during respiration

- B. CO_2 is necessary for photosynthesis
- C. Chlorophyll is necessary for photosynthesis

D. Light is necessary for photosynthesis.

Answer: d



36. In the experiment to show that CO_2 is released during respiration', the small test tube of KOH solution is suspended inside the conical flask to absorb the:

A. Air of the flask

B. Moisture of the flask

C. O_2 of the flask

D. CO_2 of the flask released by the seeds

Answer: d







2. What is diffusion?

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3. Under what condition lactic acid is produced in the muscle cells ?



4. What are autotrophs?
5. What are heterotrophs?

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6. Define Nutrients.

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7. Write the balanced chemical equation for the process of photosynthesis and the conditions of the reaction giving the physical states of all the substances.

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8. Plants kept indoors may not grow properly. Why?

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13. What are enzymes?

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14. Cows have a longer small intestine when compared to human beings.

Why?

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15. What is the function of Lipase?

Watch Video Solution

16. Briefly explain external respiration.

17. What is anaerobic respiration?

Watch Video Solution
18. What is aerobic respiration?
Watch Video Solution
19. Expand ATP.
Watch Video Solution
20. Rate of breathing is faster in aquatic animal when compared to terrestrial animals. Why?

21. The 'C' shaped rings in the trachea are a boon to life. Why?

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22. Name the chamber of the human heart that receives deoxygenated

blood.

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23. What is Double Circulation? Mention the stages in double circulation.

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24. What is lymph?

25. Mention the function of the pulmonary veins.

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26. Explain pulmonary circulation.
27. Explain systemic circulation.
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28. Mention the function of RBC. Watch Video Solution

29. Why are platelets transfused to a patient affected by Dengue

severely?



30. What is the function of xylem?

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31. What is the function of phloem?

Watch Video Solution

32. Define excretion. Write two vital functions of kidney.

33. Name the fundamental units of kidney.



35. Distinguish between mechanical digestion from chemical digestion.

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36. List two functions of transpiration.

37. The component of blood responsible for blood clotting is :

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38. In the experiment "light is essential for photosynthesis" why does the

uncovered part of the leaf turn blue-black after putting iodine solution?

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39. Name the process of loss of water in the form of vapour from the

aerial parts of the plants.

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40. Why do the walls of the trachea not collapse when there is less air in

it ?

41. Identify the following diagram and name the parts marked as A B and



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42. What is common for Cuscuta, ticks and leeches?

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Zee Additional Questions Sections Short Answer Sa Type 1 Questions

1. Describe the process of nutrition in Amoeba with the help of diagram.



2. a] List the functions of stomata.

b] A potted plant is not watered for about two days. A section of the leaf from that plant is observed under the microscope. How will the stomata appear and why?

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3. What are parasites and saprophytes. Give two examples of each.



4. We need to have our food timely. Why?

5. Salt intake in our diet has to be controlled. Why?

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6. Why is there a difference in the rate of breathing between aquatic
organisms and terrestrial organisms? Explain.
O Watch Video Solution
7. List four conditions required for efficient gas exchange in an organism.
Watch Video Solution
8. In the experiment "To prepare a temporary mount of a leaf peel to show stomata", glycerine and safranin are used. When and why are these

two liquids used? Explain.



9. In the experimental set up "carbon dioxide is given out during respiration" name the substance taken in small test tube kept in conical flask. State its function and consequences of its use.

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10. A student is observing temporary mount of leaf peel under the microscope. Draw labelled diagram of the structure of the stomata as seen under the microscope.

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11. Draw the diagram showing opened stornata. Label the following parts:i] Guard cells ii] Stomatal pore. b] Explain the role of stomata in the process of photosynthesis.

12. Write four sequential steps of the procedure of the experiment "Preparing a temporary mount of a leaf peel to show stomata".

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13. In the experimental set-up to show that "the germinating seeds give

out carbon dioxide", answer the following questions:

i] Why do we keep the conical flask airtight?

ii] Name the substance kept in the small test tube inside the conical flask.

Write its role.

iii] Why does water rise in the delivery tube?



14. List in tabular form two differences between pepsin and trypsin.

15. List four precautions in proper sequence which we observe while preparing a temporary mount of a leaf peel.



16. A student has set up an apparatus to show that $"CO_2$ is released during respiration". After about I hour he observes no change in the water level in the delivery tube. Write two possible reasons for the failure of the experiment.



17. Explain the ways in which glucose is broken down in absence or shortage of oxygen.

18. State two functions performed by bile juice.

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19. Mention the site of complete digestion in our body. Name the end products formed on complete digestion of carbohydrates, proteins and fats.

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20. What are enzymes? Name any one enzyme of our digestive system and write its function.



21. Why is it necessary to separate oxygenated and deoxygenated blood

in mammals and birds?



22. Leaves of a healthy potted plant were coated with vaseline. Will this

plant remain healthy for long ? Give reasons for your answer.



a] Name the material X filled in the small test tube and the material Y placed at the bottom of the conical flask.

b] Why is there a rise in water level in the delivery tube?



25. Two green plants are kept separately in oxygen free containers, one the dark and the other in continuous light. Which one will live longer? Give reasons.

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26. Why do fishes die when taken out of water?



27. Name the correct substrates for the following enzymes: b] Amylase d]

Lipase

28. Diagrams given below represent hearts of three different animals. Observe it and answer the question.



Among these, which heart is helpful to the animals that require more energy? Why?

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29. Bile juice contains no digestive enzymes, yet it is important for digestion. Why ?

30. State where stomata are ideally located? Are they cellular structures?

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31. "The body temperature of frogs and lizards depend on temperature in

the environment". Justify.

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Zee Additional Questions Sections Short Answer Sa Type 2 Questions

1. How does Paramecium obtain its food ?

2. Draw a neat labelled diagram of the digestive system of the human

body.



6. Draw the diagram showing the sectional view of the human heart. Label

the following parts.

i] Aorta

i] Chamber of the heart that receives deoxygenated blood.

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7. Draw the diagram showing the schematic sectional view of the human

heart. Label the following parts :

(i) Aorta

(ii) Pulmonary veins.

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8. Draw a labelled diagram of human respiratory system.



13. a] In the process of respiration state the function of alveoli.

b] Rate of breathing in aquatic organisms is much faster than that of terrestrial organisms. Give reasons.

c] Complete the following pathway showing the breakdown of glucose.

 $ext{Glucose} \stackrel{ ext{Cytoplasm}}{ ext{3-carbon molecule}} (i) \stackrel{ ext{Mitochondria}}{ ext{monomolecule}} (ii) + H_2O + ext{Energy}$

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14. Define the term transpiration. Design an experiment to demonstrate

this process.

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15. What is breathing ? Explain the mechanism.



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17. Write three types of blood vessels. Give one important feature of each.
Watch Video Solution
18. What are the two main functions of kidneys ?
Vatch Video Solution

19. Write the function of the following in the human alimentary canal:

(i) Saliva

(ii) HCl in stomach

iii] Bile juice

iv] Villi





22. Explain the ways in which glucose is broken down in absence or shortage of oxygen.







What are the functions of these components ?



29. Write one function of each of the following components of the transport system in human beings.

a] blood vessels b] lymph c] heart.

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30. Explain how does the exchange of gases occur in plants across the

surface of stems, roots and leaves.



Vatch Video Solution				
32. Mention the site of exchange of material between the blood and				
surrounding cells.				
Watch Video Solution				
33. Draw a schematic representation of transport and exchange of oxygen				
and carbon dioxide.				
Watch Video Solution				

34. Describe the process of digestion of protein in the stomach.

35. Describe an experiment to show the effect of concentration on the rate of the reaction between potassium persuphate and potassium iodide.



36. Define the term excretion. Why should animals excrete waste matter?

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37. Name the main excretory organ of human beings and state the form

in which the excretory matter is thrown out of the body.



38. Name the following:

a] The process in plants that links light energy with chemical energy.

b] Organisms that can prepare their own food.

c] The cell organelle where photosynthesis occurs.

d] Cells that surround a stomatal pore.

e] Organisms that cannot prepare their own food

f] An enzyme secreted from gastric glands in stomach that acts on proteins.

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39. How do the guard cells regulate opening and closing of stomatal pores?

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40. Why does absorption of digested food occur mainly in the small

intestine?

41. What is the advantage of having four chambered heart?

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42. Name two waste products that are stored in old xylem in plants. Name the process by which plants get rid of excess water. Name the pores through which this process takes place.

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43. State reason for the following

i] Rings of cartilage are present in the trachea

ii] Plant looks green in colour

Write other names of: i] Aiveolar sac ii) Voice box

44. Draw a labeled diagram of cross section of a leaf.

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45. What are the components of blood?
46 Trace the movement of oxygeneted blood in the body
Watch Video Solution
47. Write the function of valves present in between atria and ventricles.
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Zee Additional Questions Sections Long Answer La Type Questions

1. Explain the mechanism by which humans regulate their body temperature.



4. Compare length of the small intestine in herbivores and carnivores.

5. The approximate lengths of small intestine of animals x and y are given in the table. Observe it and answer the question.

Identify the herbivorous and carnivorous animals in the table and support your decision with scientific reasons.

6. What will happen if mucus is not secreted by the gastric glands?

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7. Name the organs that form the excretory system in human beings.



8. Describe in brief how urine is produced in human body.

9. Give reasons:

a] Ventricles have thick muscular walls than atria.

b] Transport system in plants is slow.

c] Circulation of blood in aquatic vertebrates is different from that in

d] Veins have valves whereas arteries do not.

e] During day time water and minerals travel faster through xylem as compared to the night.

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10. What are the components of blood?



11. Name the veins which bring oxygenated blood to heart.
12. Write the function of valves present in between atria and ventricles.

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13. Write one structural difference between the composition of artery and veins.

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14. Write the reaction that occurs when glucose breaks down anaerobically in yeast.



15. Write the mechanism by which fishes breathe in water.

16. Name the balloon like structure present in the lungs. List its two functions.

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17. Name the respiratory pigment in human beings. Where is this pigment

found ?

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18. Name the process and explain the type of nutrition found in green plants. List the raw materials required for this process. Give chemical equation for the mentioned process.

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19. Write three events which occus during the process of photosynthesis.



20. Draw diagram to show the nutrition in amoeba and label the parts used for this purpose. Mention any other purpose served by this part other than nutrition.

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21. Name three different glands associated with the digestive system in

humans. Also name their secretions.

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22. How is required pH maintained in stomach and small intestine?

23. Draw a diagram depicting human alimentary canal and label: Gall bladder, liver and pancreas.



24. a) State the role of liver and pancreas.

b) Name the organ which performs the following function in humans.

- i) Absorption of digested food.
- ii) Absorption of water.

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25. a) State the role of liver and pancreas.

- b) Name the organ which performs the following function in humans.
- i) Absorption of digested food.
- ii) Absorption of water.

26. What are the adaptations of leaf for photosynthesis?

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27. In each of the following situations what happens to the rate of photosynthesis?

a] Cloudy days

b] No rainfall in the area

c] Good manuring in the area

d] Stomata get blocked due to dust

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28. What are the main processes of urine formation ?



32. Draw excretory system in human beings and label the following parts

which performs the following functions.

1] Form urine

2] Is a long tube which collects urine from kidney

3] Store urine untill its passed out