



BIOLOGY

BOOKS - OSWAAL BIOLOGY (KANNADA ENGLISH)

LIFE PROCESSES

Topic 1 Nutrition Multiple Choice Questions

1. The first Step in photosynthesis is

A. Photolysis of water

B. Production of assimilatory pigments

C. Excitation of chlorophyll

D. Synthesis of ATP

Answer: C



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2. Splitting of water during photosynthesis is known as :

A. hydrolysis

B. electrolysis

C. ionization

D. photolysis

Answer: D



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Topic 1 Nutrition Match The Column

1.

Column A

Column B

- | | |
|--------------------|----------------------------|
| (A) Autotrophs | (i) Cuscuta |
| (B) Amoeba | (ii) Amylase |
| (C) Parasite | (iii) Water transportation |
| (D) Saponification | (iv) single celled |
| (E) Xylem | (v) Plants |



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Topic 1 Nutrition Very Short Answer Type Questions

1. Explain the role of saliva in digestion.



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2. What is the role of acid in our stomach ?



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3. What is the function of digestive enzymes?



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4. Where does digestion of fat takes place in our body ?



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5. State the location and the function of gastric glands ?



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6. Mention the site of complete digestion of carbohydrates, proteins and fats in humans.



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Topic 1 Nutrition Short Answer Type Questions I

1. Draw the diagram of an open stomatal pore of a leaf and label on it chloroplast and guard cells.



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2. Write any two events that occur during photosynthesis.



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3. Which is the internal energy reserve in plants ? Do animals have the same energy reserve ?



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4. 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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5. Why does herbivores have longer, small intestine than carnivores ?



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6. What are final products of carbohydrates, proteins and fats after their digestion ?



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7. Explain the significance of peristaltic movement that occur all along the gut during digestion.



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8. Why does the medium become acidic in mouth ? What is the ill effect of this acidic medium ? How can this be prevented ?



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9. What function is served by the following :

(i) Gastric Sphincter ?

(ii) Anal Sphincter ?



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10. Some finger like projections are present in the inner wall of small intestine. Write their names ? Why are they important ?



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11. What is the function of digestive enzymes?



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Topic 1 Nutrition Short Answer Type Questions li

1. What are necessary conditions for autotrophic nutrition and what are its by product ?



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2. Describe heterotrophic mode of nutrition and give its examples. Name the three types of this nutrition.



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3. Write three events which occur during the process of photosynthesis.



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4. Where does digestion start in our alimentary canal? Name the enzyme secreted in that part and write its function.



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5. Name three different glands associated with the digestive system in humans. Also name their secretions.



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6. Name the extensively coiled structure of alimentary canal.



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



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8. In human alimentary canal, name the site of complete digestion of various components of food. Explain the process of digestion.



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9. The inner lining of the small intestine has numerous finger like projections. What are they called ? List their functions.



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10. Name the following :

(i) Where food is completely digested ?

(ii) Juice that contains trypsin enzyme.

(iii) Who secretes bile juice ?

(iv) That absorbs water from unabsorbed food.

(v) Two secretions released by gastric glands.



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11. List two functions performed by dilute hydrochloric acid in our stomach.



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12. Name the raw materials required for photosynthesis.



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13. List the role of each of the following in our digestive system :

(i) Muscles of stomach wall

(ii) Hydrochloric acid

(iii) Mucus.



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14. Explain the role of bile juice in digesting food.



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15. Mention the purpose of making urine.



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16. Name the enzyme present in pancreatic juice and give their functions.



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Topic 1 Nutrition Long Answer Type Questions

1. Mention the organ and site of photosynthesis in green plants. What are the raw materials essential for this process ? How are they obtained ? Write complete balanced chemical equation for the process. Name the byproducts.



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2. State the form in which the following are stored :

(i) Unused carbohydrates in plants

(ii) The energy derived from food in humans.



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



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4. How does Paramecium obtain its food ?



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5. Draw a well labelled diagram of human alimentary canal, and label the following parts :

(i) Liver

(ii) Pancreas

(iii) Small intestine

(iv) Large intestine.



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6. What is peristaltic movement ?



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Topic 2 Respiration Multiple Choice Questions

1. Which one of the following statements is false in respect of viability of mammalian sperm?

- A. More in person B than in person A
- B. More in person A than in person B
- C. Equal in person A and person B

D. No relation between oxygen supply and the level of haemoglobin

Answer: A



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2. Which of the following animals has a system to provide atmospheric oxygen directly to the body cells ?

A. Insects

B. Fishes

C. Human being

D. Frog

Answer: A



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Topic 2 Respiration Very Short Answer Type Questions

1. Define breathing.



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2. What is the principle of exchange of gases ?



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3. How do plants utilise the CO_2 produced during respiration ?



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4. Name the respiratory pigment in human beings. Where is this pigment found ?



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5. Where does aerobic respiration occur in a cell ?



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Topic 2 Respiration Short Answer Type Questions

1. Stomata of desert plants remain closed during day time. How do they up CO_2 and perform photosynthesis ?



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2. Give reasons

Why is diffusion not sufficient to meet the oxygen requirements of all the cells in multicellular organisms ?



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3. Stomata open at night and close during the day time in



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



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5. Leaves of a healthy potted plant were coated with vaseline. Will this plant remain healthy for long ? Give reasons for your answer.



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6. "Respiration is an Exothermic Reaction."
Justify this statement giving the chemical equation for the reaction involved.



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7. When a sportsman runs, he often gets muscle cramps. Why ?



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Topic 2 Respiration Short Answer Type Questions ii

1. Give reasons for :

Oxygenated and deoxygenated bloods are separate in the heart of mammals.



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2. Give reasons for :

Ventricles are thick walled.



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3. Give reasons for :

Herbivores have longer small intestine as compared to carnivores.



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4. Define breathing. Explain the mechanism of breathing in human beings.



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5. Explain the activity with diagram to show that carbon dioxide is essential for photosynthesis.



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6. With the help of a schematic flowchart, show the break down of glucose in a cell to provide energy :

(i) in the presence of oxygen

(ii) in the absence of oxygen

(iii) when there is lack of oxygen.



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7. List three characteristics of lungs which make it an efficient respiratory surface.



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8. Why do we feel cramps in our muscles during sudden physical activity ?



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9. The rate of breathing in aquatic organisms is much faster than that seen in terrestrial organisms. Give reason.



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Topic 2 Respiration Long Answer Type Questions

1. Draw the human respiratory system and label the following - lung, bronchi and alveolar sac.



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2. During breathing cycle, what is the advantage of residual volume of air in lungs ? Explain.



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3. Draw a diagram of human respiratory system and label the following :

(i) part where air is filtered by fine hair and mucus.

(ii) part which terminates in balloon - like structures.

(iii) balloon - like structures where exchange of gases takes place.

(iv) part which separates chest cavity from abdominal cavity.



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4. Draw the diagram of cross section of a leaf and label the following parts :

(a) chloroplast

(b) cuticle



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5. A gas is released during photosynthesis. Name the gas and also state the way in which the gas is evolved.



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6. In certain group of plants, stomata remains closed during day. How is food synthesized by such plants ? Also name them.



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Topic 3 Circulation And Transportation Multiple Choice Questions

1. The principal avenue of water translocation in angiosperms is :

A. phloem

B. parenchyma

C. xylem

D. sieve tubes

Answer: A



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2. Transpiration pull accounts for :

- A. Active absorption
- B. Activated absorption
- C. Passive absorption
- D. Both (a) and (c)

Answer: A



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Topic 3 Circulation And Transportation Very Short Answer Type Questions

1. What process in plants is known as transpiration ?



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2. What is transported by lymph ?



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3. Name the process of loss of water in the form of vapour from the aerial parts of the

plants.



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4. Name the tissues which (i) transport soluble products of photosynthesis in plants, (ii) transport water and minerals in a plant.



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5. Name the component of blood which transport :

(i) Food, carbon dioxide and nitrogenous wastes

(ii) Oxygen.



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6. Why is the walls of ventricles thicker than the walls of atria ?



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7. Why do veins have thin walls as compared to arteries ?



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Topic 3 Circulation And Transportation Short Answer Type Questions I

1. What is translocation ? How it take place in plants ?



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2. How is the process of transpiration useful to plants ?



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3. Explain how water and minerals are transported in plants ?



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4. Name the material transported by the following :

(i) Xylem,

(ii) Pulmonary artery,

(iii) Pulmonary veins,

(iv) Phloem.



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5. State any two differences between arteries and veins.



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6. Which mechanism plays an important role in transportation of water in plants ?

(i) during day time,

(ii) at night.



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Topic 3 Circulation And Transportation Short Answer Type Questions Ii

1. What is lymph ?



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2. How is composition of lymph different from blood plasma ?



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3. List two functions of lymphatic system.



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4. How does the transport of materials in xylem and pholem occurs ?



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5. What is translocation ?



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6. Define transpiration. State its two functions.





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7. Write three points of differences between artery and vein.



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8. Why do ventricles have thicker, muscular walls than atria ?



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9. What are peristaltic movements ?



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10. 'Stomata remain closed in desert plants during day time.' How do they do photosynthesis ?



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11. Mention the site of exchange of material between the blood and surrounding cells.



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12. Draw a schematic representation of transport and exchange of oxygen and carbon dioxide.



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13. Explain :

Blood goes only once through the heart in fishes.



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14. Explain :

Plants have low energy needs.



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15. Explain :

What are capillaries ?



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16. List the three kinds of blood vessels of human circulatory system and write their functions in tabular form.



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17. Plants absorb water from the soil. Explain how does the water reach the tree top ?



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1. Draw a diagram of cross - section of the human heart and label the following parts :

(i) Right ventricle

(ii) Aorta

(iii) Left atrium

(iv) Pulmonary arteries.



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2. Give reasons for the following :

(i) The muscular walls of ventricles are thicker

than the walls of atria.

(ii) Arteries have thick elastic walls.



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3. State two advantage of transpiration to the plant body.



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4. (i) List in tabular form, two ways in which 'transpiraion' is different from 'translocation.'

(ii) Why do plants have a slow transport system ?



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Topic 4 Excretion Multiple Choice Questions

1. Urea formation takes Place in

A. liver

B. kidney

C. lungs

D. skin

Answer: A



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2. The nitrogenous wastes in is birds are :

A. CO_2

B. Urea

C. Ammonia

D. Uric acid

Answer: D



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Topic 4 Excretion Very Short Answer Type Questions

1. What is osmoregulation ?



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2. Which organ synthesises urea ?



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3. Why ammonia is converted to uric acid crystals directly in uricotelic organisms ?



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4. Mention the respiratory unit of lungs and excretory unit of kidneys.



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5. What causes the liquid part of blood to filter out from the glomerulus into the renal tubule ?



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Topic 4 Excretion Short Answer Type Questions I

1. What is excretion ? How do unicellular organisms remove their wastes ?



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2. Why is nitrogen considered an essential element ? How do plants acquire nitrogen ?



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3. Write two major components of human urine.



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4. Major amount of water is selectively reabsorbed by the tubular part of nephron in humans. What are the factors on which the amount of water reabsorbed depends ?



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5. List any four strategies used by the plants for excretion.



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6. Why do we feel cramps in our muscles during sudden physical activity ?



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7. List two major steps involved in the formation of urine and state in brief their functions.



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8. What is the function of the following :

(i) Renal artery, (ii) Renal Vein.



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Topic 4 Excretion Short Answer Type Questions li

1. List any three important functions of kidney.



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2. What is the filtering unit of kidney ?



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3. why are nephron called ultrafiltration unit



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4. Mention the pathway of urine starting from the organ of its formation. Name four substances which are reabsorbed from the

initial filtrate in the tubular part of the nephron.



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5. Name one nitrogenous waste present in urine. What is the basic filtration unit of kidney called ? How is the amount of urine produced regulated ?



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6. Name the following :

(i) The three carbon molecule that is formed due to break - down of glucose during respiration.

(ii) The nitrogenous waste that is removed from the blood in our kidneys.



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7. How do unicellular organisms generally remove waste ?



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



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Topic 4 Excretion Long Answer Type Questions

1. Draw a diagram of an excretory unit of a human kidney and label the following :

Bowman's capsule, Glomerulus, Collecting duct,
Renal artery.



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2. Write the important function of the structural and functional unit of kidney.



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3. Write any one function of an Artificial Kidney.



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4. Draw a diagram of human excretory system and label the following parts on it :

(i) Right renal artery

(ii) Vena cava.

(iii) Urinary bladder

(iv) Left kidney



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5. List two vital functions of kidney.



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6. Draw a diagram of human excretory system and label the following :

(i) part in which urine is produced

(ii) part which stores the urine

(iii) part which connects (i) and (ii)

(iv) part from which urine is passed out.



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7. Name the factors on which the amount of water reabsorbed along the tubular part of nephron depend on ?



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8. Artificial kidney is a device to remove nitrogenous waste products from the blood through dialysis. In case of kidney failure, an artificial kidney can be used. Dialysis is the procedure used in artificial kidney to replace a non-functional or damaged kidney. In the

process, blood of the patient is allowed to pass through the long cellulose tubes dipped in a tank containing dialysing solution having same ionic concentration as plasma. The waste substances diffuse out of blood into the tank and the cleansed blood is returned back into the patient through a vein.

What is the unit of kidney ?



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9. Artificial kidney is a device to remove nitrogenous waste products from the blood through dialysis. In case of kidney failure, an artificial kidney can be used. Dialysis is the procedure used in artificial kidney to replace a non-functional or damaged kidney. In the process, blood of the patient is allowed to pass through the long cellulose tubes dipped in a tank containing dialysing solution having same ionic concentration as plasma. The waste substances diffuse out of blood into the tank and the cleansed blood is returned back into

the patient through a vein.

"Problems of heart that can be accelerated by bad kidney and vice - versa." Comment on this statement by giving reason.



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What is the unit of kidney ?



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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 ?



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3. What are the outside raw materials used for by an organism ?



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4. What processes would you consider essential for maintaining life ?



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5. What the differences between autotrophic nutrition and heterotrphic nutrition ?



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6. Where do plants get each of the raw materials required for photosyntheses ?



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7. What is role of acid in our stomach ?





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8. What is the function of digestive enzymes ?



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9. How is small intestine designed to absorb digested food ?



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10. What advantage over aquatic organism does a terrestrial organism have with regard to obtaining oxygen for respiration ?



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11. What are the different ways in which glucose is oxidised to provide energy in various organism ?



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12. How is oxygen and carbon dioxide transported in human beings ?



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13. How are the lungs designed in human beings to maximise the area for exchange of gases ?



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14. What are the components of the transport system in human beings ? What are the functions of these components ?



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15. Why is it necessary to separate oxygenated and deoxygenated blood in mammals and birds.



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16. What are the components of the transport system in highly organised plants ?



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17. How are water and minerals transported in plants ?



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18. How is food transported in plants ?



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19. Describe the structure and functioning of nephrons.



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20. What are the methods used by plants to get rid of excretory product ?



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21. How is amount of urine produced regulated ?



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Ncert Corner Textbook Exercises

1. The kidneys in human beings are a part of the system for

A. nutrition

B. respiration

C. excretion

D. transportation

Answer: C



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2. The xylem in plants are responsible for

A. transport of water

B. transport of food

C. transport of amino acids

D. transport of oxygen

Answer: A



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3. The autotrophic mode of nutrition requires

A. carbon dioxide and water

B. chlorophyll

C. sunlight

D. all of the above

Answer: D



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4. The breakdown of pyruvate to give carbon dioxide, water and energy takes place in

A. cytoplasm

B. mitochondria

C. chloroplast

D. nucleus

Answer: B



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



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



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7. What are necessary conditions for autotrophic nutrition and what are its by product ?



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8. What are the differences between aerobic respiration and anaerobic respiration. Name some organism that use anaerobic mode of respiration.



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9. How are alveoli designed to maximise exchange of gases ?



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10. What are the consequences of deficiency of haemoglobin in our bodies ?



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



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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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