

# Class 10th Science

## Chapter - 6

### Life Processes

---

#### Textual Questions and Answers :

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

Ans :- In multicellular organisms all the cells of body may not be in direct contact with surrounding source of oxygen , thus simple diffusion will not meet the oxygen requirements of all the cells .

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

Ans :- Features of living organisms :-

( i ) Movement.

( ii ) Growth.

( iii ) Metabolism.

( iv ) Respiration.

( v ) Nutrition.

( vi ) Transportation.

( vii ) Reproduction.

( viii ) Exertion.

( ix ) Cellular body.

( x ) Respond to stimuli.

**Q.3. What are out side raw materials used by living organisms .**

**Ans :-** The outside raw materials used by living organisms are :

( i ) Food.

( ii ) Oxygen.

( iii ) Water .

**Q.4. What processes would you consider essential for maintaining life .**

**Ans :-** Essential process for maintaining life are

( i ) Nutritation.

( ii ) Respiration.

( iii ) Transportation. And

( iv ) Excretion.

**Q.1. What are the differences between autotrophic and heterotrophic nutrition ?**

Ans :- Autotrophic nutrition :- In this type of nutrition , It occurs in green plants and blue green algae  $\text{CO}_2$  organic compound . They need chlorophyll and sunlights.

Heterotrophic nutrition :- In this type of nutrition , It occurs in animals and insectivorous plants . They depend on plants and herbivores for their food . There is no need of chlorophyll and sunlight .

**Q.2. Where do the plants get each of the raw materials required for photosynthesis ?**

Ans :- Required materials for photosynthesis are : -

( i ) Carbon - dioxide :- Which plants get from atmosphere .

( ii ) Water :- Which plants get from soil .

( iii ) Sunlight :- Which plants get from sun .

( iv ) Chlorophyll :- It is present in green leaves plant .

**Q.3. What is the role of acid in our stomach ?**

Ans :- Function of acid (  $\text{HCl}$  ) :-

( i ) To create acidic mediums which is necessary for the activation of the enzyme pepsin .

( ii ) Destroys the bacteria present in food .

#### Q.4. What is the function of digestive enzymes ?

Ans :- These enzymes convert the non - diffusible form of food into diffusible form .

( i ) Ptyalin converts starch into maltose .

( ii ) Pepsin breaks down proteins into peptides and amino acids .

( iii ) Lipase acts on fats and forms fatty acid and glycerol .

( iv ) Maltase acts on maltose and forms glucose .

#### Q.5. How is the small intestine designed to absorb digested food ?

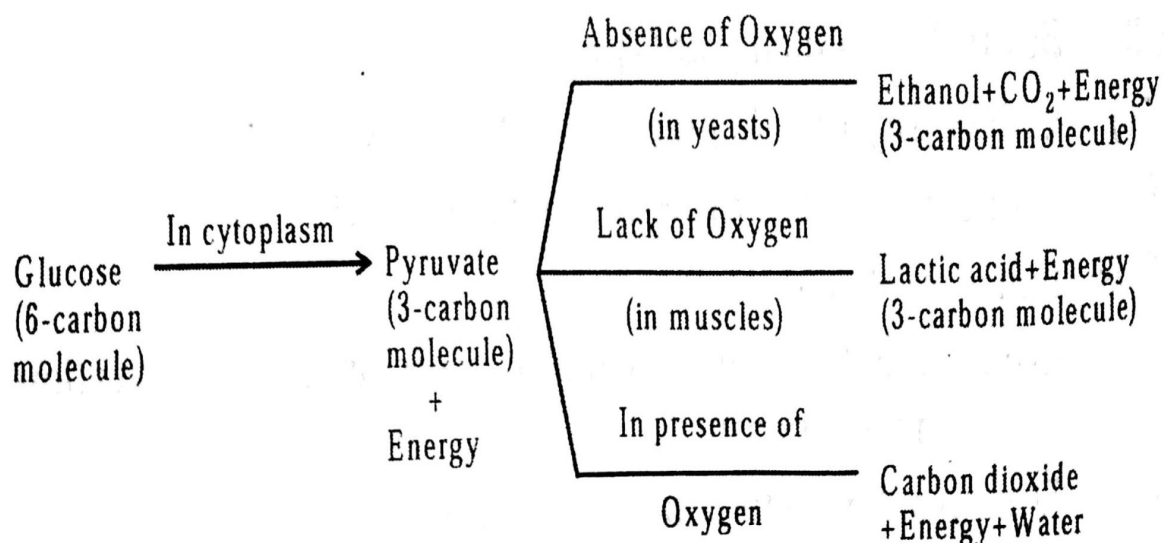
Ans :- Small intestine is the longest part of the alimentary canal which is fitted into a compact space because of extensive coiling . The inner lining of the small intestine has numerous finger like projections called villi which increase the surface area for absorption . The villi are richly supplied with blood vessels which take the absorbed food to each and every cell of the body , where it is utilised for obtaining energy, building up new tissues and the repair of old tissues .

Q.1. What advantage over an aquatic organism does a terrestrial organism have with regard to obtaining oxygen for respiration ?

Ans :- The amount of oxygen dissolved in water is very low as compared to amount of oxygen in air . So terrestrial organism have much less breathing rate than aquatic organisms.

Q.2. What are the different ways in which glucose is oxidised to provide energy in various organisms ?

Ans :- Different pathways to provide energy from glucose :-



Q.3. How is oxygen and carbon dioxide transported in human beings ?

Ans :- The respiratory pigment present in the blood take up the oxygen from the air in the lungs . They carry the oxygen to tissues which are deficient in oxygen before releasing it . In human beings , the respiratory pigment , called haemoglobin present in the red blood corpuscles carries oxygen to different tissues of the body .

Carbon dioxide is more soluble in water . Hence is mostly transported from body tissues in the dissolved form in our blood plasma to lung where it diffused from blood to air in the lungs .

Q.4. How are the lungs designed in human beings to maximise the area for exchange of gases ?

Ans :- Within the lungs , the primary bronchi divides into smaller and smaller tubes which finally terminate into balloon - like structures called alveoli . These alveoli increase surface area for exchange of gases . There are 750 million alveoli in the lungs of man . If the alveolar surface is spread out it would cover about  $80\text{m}^2$  . Thus it makes efficient exchange of gases .

**Page -110**

Q.1. What are the component of transport system in human beings ? What are function of these components ?

Ans :- The transport system in human beings mainly consist of heart , blood and blood vessels .

## Functions of the components:

( i ) Heart :- Heart is a pumping organ to push blood around the body . It receives deoxygenated blood from the body parts and pump it to lungs for enriching with oxygen . It receives purified blood from lungs and pumps it around the body .

( ii ) Blood :- Blood is fluid connective tissue . It consists of plasma in which the cells are suspended , such as WBC and RBC . Plasma transports food , carbon dioxide and nitrogenous wastes in dissolved form . RBC transports oxygen . Blood also transport many other substances like hormones , salt etc. Platelets present in the blood stop bleed from injuries by forming blood clots .

( iii ) Blood vessels :- The blood vessels which carry oxygenated blood are called arteries . They divide to form capillaries of finer dimensions . Exchange of materials takes place across the capillaries . It is possible because the wall of capillaries are extremely thin. The blood from the tissues is returned by veins.

**Q.2. Why it is necessary to separate the oxygenated and deoxygenated blood in mammals and birds ?**

**Ans :-** The separation of the right side and left side of the heart is useful to keep oxygenated and de oxygenated blood from mixing . Such separation allows a highly efficient supply of oxygen to the body . This is useful in animals that have high energy needs , such as

birds and mammals , which constantly use energy to maintain their body temperature.

### Q.3. What are the components of the transport system in highly organised plants ?

Ans :- The component of the transport system in highly organised plants are -

( i ) Xylem.

( ii ) Phloem .

### Q.4. How are water and minerals transported in plants ?

Ans :- In xylem tissue , vessels and tracheids of the roots , stems and leaves are interconnected to form a continuous system of water and minerals conducting channels reaching all parts of the plant . At the roots , cells in contact with the soil actively take up ions .

This creates a difference in the concentrations of these ions between the root and the soil . Water and dissolved minerals , therefore , moves into the root from the soil to eliminate this difference . This means that there is a steady movement of water and minerals into the root xylem , creating a column of water that is steadily pushed upwards .

However , this pressure by itself is unlikely to be enough to move water and minerals over the heights that we commonly see in plants . Plants use another strategy to



move water in the xylem upwards to the highest points of the plant body .

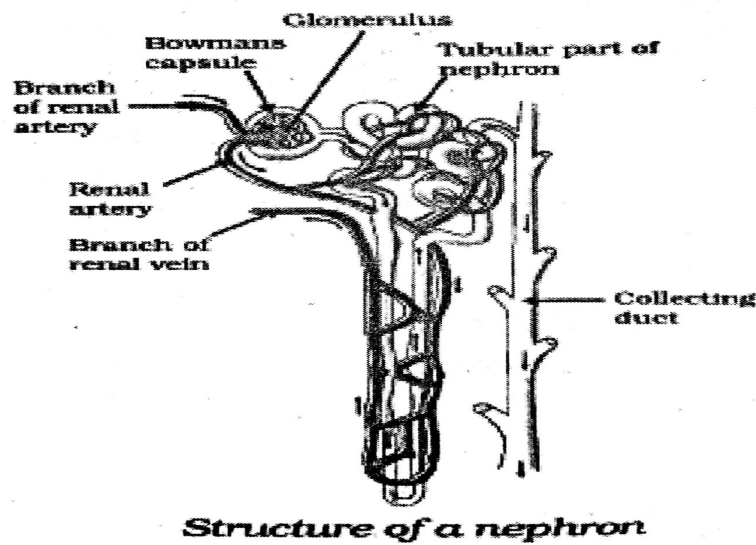
#### Q.5. How is food transported in plants ?

Ans :- Plants transport of soluble products of photosynthesis like carbohydrates , amino acids and other substances through phloem to storage organs of roots , fruits and seeds and also to growing organs . This transport of soluble product of photo synthesis through phloem is known as trans location . The transport kof prepared food and other substances takes place both in upward and downward directions . This movement of food materials is carried out in phloem by sieve tabes with the help of companion cells .

**Page - 112**

#### Q.1. Describe the structure and functioning of nephron .

Ans :- Structure of Nephron :- A nephron is made up of a globular double walled . Bowman's capsule around a clump of capillaries of glomerulus and a tubule surrounded by blood capillaries . The tabule consists of a proximal convoluted portion , the loop of Henle , with descending and ascending limbs and a distal convoluted part .



**Structure of a nephron**

Function of nephron :-

( i ) Filtration of blood takes place in Bowman's capsule from the capillaries of glomerules . The filtrate passes into the tubular part of the nephron . This filtrate contains glucose , amino acids , urea , uric acid , salts and a major amount of water .

( ii ) As the filtrate flows along the tubule , useful substances such as glucose , amino acids , salts and water are selectively reabsorbed into the blood by capillaries surrounding the nephron tubule .

( iii ) The filtrate which remained after reabsorption is called urine , urine contains dissolved nitrogenous waste i.e. urea and uric acid , excess salts and water . Urine is collected from nephrons by the collecting duct to carry it to the ureter .

**Q.2. What are the methods used by plants to get rid of excretory products ?**

Ans :- Plants can get rid of excess water by transpiration. For other wastes , plants use the fact that many of their tissues consist of dead cells and that they can even lose parts such as leaves . Many plant waste products are stored in cellular vacuoles . Waste products may be stored in leaves that fall off . Other waste products are stored as resins and gums , especially in old xylem . Plants also excrete some waste substances into the soil around them .

### Q.3. How is the amount of urine produced regulated ?

Ans :- ( i ) Amount of urine formed depends upon how much excess water there is in the body .

( ii ) When there is more quantity of dissolved wastes in the body , more quantity of water is required to excrete them . So the amount of urine produced increases .

( iii ) The amount of urine produced is also regulated by certain hormones which control the movement of water and Na ions and out of the nephrons .

**Page - 133**

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

( a ) Nutrition.

( b ) Respiration.

( c ) Excretion.

( d ) Transportation.

Ans :- ( c ) Excretion .

Q.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.

Ans :- ( a ) Transport of water .

Q.3. The autotrophic mode of nutrition requires :

( a )  $\text{CO}_2$  and water.

( b ) Chlorophyll.

( c ) Sunlight.

( d ) All of above.

Ans :- ( d ) All of above .

Q.4. The breakdown of pyruvate to give  $\text{CO}_2$ , water and energy takes place in :

( a ) Cytoplasm.

( b ) Mitochondria.

( c ) Chloroplast.

( d ) Nucleus.

Ans :- ( b ) Mitochondria .

### **Textual Questions and Answers :**

Q.1. How are fats digested in our bodies ? Where does the process take place ?

Ans :- The food coming from the stomach is acidic and has to be made alkaline for the pancreatic enzymes to act . Bile juice from the liver accomplishes this in addition to acting on fats . Fats are present in the intestine in the form of large globules which makes it difficult for enzymes to act on them . Bile salts break them down into smaller globules increasing the efficiency of enzyme action . The pancreas secretes pancreatic juice which contains enzymes like trypsin for digesting proteins and lipase for breaking down emulsified fats .

The walls of the small intestine contain glands which secrete intestinal juice . The enzymes present in it finally

convert the fats into fatty acids and glycerol . Digestion of fat takes place in the small intestine.

Q.2. What is the role of saliva in the digestion of food ?

Ans :- The saliva contains an enzyme called salivary amylase that breaks down starch which is a complex molecule to give sugar . The food is mixed thoroughly with saliva and moved around the mouth which is chewing by the muscular tongue .

Q.3. What are the necessary conditions for autotrophic nutrition and what are its by - products ?

Ans :- Necessary conditions for autotrophic nutrition : -

( i ) Presence of chlorophyll in the living cells .

( ii )  $\text{CO}_2$  is necessary.

( iii ) Sunlight is necessary .

( iv ) Water is required .

By - products :- Molecular oxygen is liberated as a byproduct .

Q.4. What are the differences between aerobic and anaerobic respiration ? Name some organisms that use the anaerobic mode of respiration .

Ans :-

<b>Aerobic respiration</b>	<b>Anaerobic respiration</b>
1. It takes place in the presence of oxygen.	1. It takes place in the absence of oxygen.
2. Complete oxidation of glucose takes place.	2. Glucose molecule is incompletely broken down.
3. Large amount of energy is released.	3. Small amount of energy is released.

An aerobic respiration take place in bacteria , yeast and Muscle cells .

**Q.5. How are the alveoli designed to maximise the exchange of gases ?**

Ans :- The alveoli are thin walled and richly supplied with a network of blood vessels to facilitate exchange of gases between blood and the air filled in alveoli . Alveoli have balloon like structure . Thus provides maximum surface for exchange of gases .

**Q.6. What would be consequences of a deficiency of haemoglobin in our bodies ?**

Ans :- Haemoglobin is a respiratory pigment present in RBC of Blood . Haemoglobin has high affinity for oxygen. One molecule of haemoglobin carries 4 molecules of oxygen . If simple diffusion were to move oxygen in our body , it is estimated that it would take 3

years for a molecule of oxygen to reach tip of toes from lungs.

Q.7. Describe double circulation in human beings . Why is it necessary ?

Ans :- Double circulation :- In human beings the blood goes through the heart twice during each cycle . i.e. , the blood passes through the human heart two times to supply once to the whole body . So , it is called the double circulation of blood .

The double circulation of blood includes

( i ) Systemic circulation and

( ii ) Pulmonary circulation.

( i ) Systemic circulation :- It supplies oxygenated blood from left auricle to left ventricle there by pumped to various body parts . The deoxygenated blood is collected from the various body organs by the veins to pour into vena cava and finally into right atrium . Right atrium transfers the blood in to the right ventricle .

( ii ) Pulmonary circulation :- The deoxygenated blood is pushed by the right ventricle into the lungs for oxygenation . The oxygenated blood is brought back to left atrium of the human heart . From left atrium the oxygenated blood is pushed into the left ventricle . The left ventricle pumps oxygenated blood into aorta for systemic circulation .



( iii ) Necessity of double circulation :- The right side and the left side of the human heart is useful to keep deoxygenated and oxygenated blood from mixing . This type of separation of oxygenated and deoxygenated blood ensures a highly efficient supply of oxygen to the body . This is useful in case of humans which constantly require energy to maintain their body temperature .

Q.8. What are the differences between the transport of materials in xylem and phloem ?

Ans :-

<b>Xylem</b>	<b>Phloem</b>
1. Water and minerals are transported through xylem from soil.	1. Sucrose , amino acids and other substances are transported through phloem.
2. In xylem , upward , movement of water and dissolved minerals transferred into phloem tissue is mainly achieved by transpiration pull .It is caused due to suction , created by evaporation of water molecules from the cells of leaves.	2. In translocation , material is transferred in the phloem tissue emerge from ATP. This increase the osmotic Pressures that moves the material in the phloem to tissue which have less pressure.

Q.9. Compare the functioning of alveoli in the lungs and nephrons in the kidneys with respect to their structure and functioning .

Ans :-

<b>Alveole</b>	<b>Nephron</b>
1. Alveoli have thin walled balloon like structure . Scarface is fine and delicate.	1. Nephron have thin walled cup shaped structure attached with thin walled tubule.
2. Alveoli only provide surface for exchange of gases in the lungs.	2. Tubular part of nephron also carries the urine to collecting duct.

### **Additional Questions and Answers :**

Q.1. Why are molecular movements needed for life ?

Ans :- Molecular movements are required to provide various essential molecules throughout the body of an organism for repairing and maintaining their structures .

Q.2. What is nutrition ?

Ans :- The sum total of processes by which living organisms obtain food materials and prepare them for use in the growth , repair and providing energy is termed nutrition.

Q.3. List six features of living organisms .

Ans :- ( i ) Growth.

( ii ) Movements.

( iii ) Cellular body.

( iv ) Nutrition.

( v ) Respiration.

( vi ) Reproduction .

Q.4. Name the main modes of nutrition .

Ans :- Autotrophic and heterotrophic .

Q.5. What is aerobic respiration ?

Ans :- Aerobic respiration is the process in which glucose is completely broken down in  $\text{CO}_2$  and  $\text{H}_2\text{O}$  in presence of oxygen .

Q.6. What is anaerobic respiration ?

Ans :- Anaerobic respiration is the process in which food is broken down incompletely in ethyl alcohol or lactic acid in the absence of oxygen.

Q.7. What is photosynthesis ?

Ans :- The process of synthesis of food from raw materials  $H_2O$  and  $CO_2$  in presence of sunlight by the green plants is known as photosynthesis .

Q.8. What is transpiration ?

Ans :- The loss of water in vapour from mainly from the leaves is called transpiration .

Q.9. What are the raw materials of photosynthesis ?

Ans :- The raw materials of photosynthesis are -

( i )  $CO_2$ .

( iii ) Water.

( iii ) Light.

( iv ) Chlorophyll.

Q.10. Name the photosynthetic pigment present in a chloroplast.

Ans :- Chlorophyll .

Q.11. What is meant by digestion ? Give the important steps the process of protein digestion in man .

Ans :- The process of mechanical and chemical breakdown of ingested complete food material into simpler soluble and absorbable molecules is called

digestion . In man , it starts from mouth and continues until the small intestine .

The digestion of protein in man starts in stomach . The gastric juice of stomach contains pepsin enzyme . It converts complete protein molecules into smaller molecules - peptones .

In duodenum , pancreatic juice enzyme trypsin also acts upon protein molecules to convert it into peptides and peptones . In ileum intestinal juice enzymes convert simple molecules of proteins into amino acids . Proteins are absorbed as amino acids by the intestinal villi .

Q.12. What do you mean by Dialysis ?

Ans :- The procedure used in artificial kidney in place of normal is called dialysis .

Q.13. What are blood vessels ?

Ans :- The vessels in which blood flows throughout the body are called blood vessels like artery , veins and capillaries .

Q.14. Name the following :

( i ) Thin walled air sacs of the lungs .

( ii ) The respiratory pigment in man .

( iii ) A gas present in large proportion in the expired air .

Ans :- ( i ) Alveoli.

( ii ) Haemoglobin.

( iii ) Carbon dioxide .

Q.15. Name the respiratory organs of :

( i ) Fish.

( ii ) Mosquito.

( iii ) Earthworm.

( iv ) Dog .

Ans :- ( i ) Gills.

( ii ) Trachea.

( iii ) Body wall.

( iv ) Lungs.

Q.16. Name the term for transport of food from leaves to other in parts of the plants .

Ans :- Translocation of food .

Q.17. Give one reason why multicellular organisms require special organs for exchange of gases between their body and their environment .

Ans :- All the cells of multicellular organism are not in direct contact with the surrounding environment .

#### Q.18. What is double circulation ?

Ans :- The blood flows twice through the heart in one cycle , it is called double circulation .

#### Q.19. Write major functions of stomata present in the epidermis.

Ans :- ( i ) Stomata are essential for exchange of gases between the plant and the atmosphere .

( ii ) Normally , plants eliminate excessive water in the form of vapour through stomatal openings .

( iii ) When there is shortage of water , stomatal openings get closed . Thus , reduce water lose . Stomatal openings also close down during night.

#### Q.20. What are villi and what is their function ?

Ans :- Villi are the fingers like structures present on the inner surface of the small intestines . About five millions of villi are present in the intestine thus they increase the absorptive surface of the intestine considerably and facilitate quick absorption of the digested food , Each villus contains a network of blood capillaries with a central lacteal vessel.

Q.20. What are the functions of pancreas in the human body ?

Ans :- Pancreas secretes pancreas juice . The pancreatic juice contains digestive enzymes . The trypsin enzyme for digesting proteins , pancreatic amylase for breakdown of starch and pancreatic lipase to digest fats . Pancreas also secrete hormones , known as insulin and glucagon .

Q.22. What are villi and what is their function ?

Ans :- Villi are the fingers like structures present on the inner surface of the small intestines . About five millions of villi are present in the intestine thus they increase the absorptive surface of the intestine considerably and facilitate quick absorption of the digested food . Each villi contains a network of blood capillaries with a central lacteal vessel .

Q.23. What are the functions of pancreas in the human body ?

Ans :- Pancreas secretes pancreas juice . The pancreatic juice contains digestive enzymes . The trypsin enzyme for digesting proteins , pancreatic amylase for breakdown of starch and pancreatic lipase to digest fats . Pancreas also secrete hormones , known as insulin and glucagon .

Q.24. Photosynthesis is called a light dependent process . comment .



Ans :- As the process of photosynthesis occurs only in the presence of light , it is called a light dependent process .

Q.25. Differentiate chloroplast and chlorophyll .

Ans :-

<b>Chloroplast</b>	<b>Chlorophyll</b>
1. It is a organelle of cell.	1. It is green pigment of chloroplast.
2. It is living.	2. It is non - living.

Q.26. Give an account of small intestine.

Ans :- It is the longest part of alimentary canal . It is thin walled and highly coiled tubular structure . It is about 3-3.5 meters long and occupies most part of abdominal cavity . It is coiled upon itself .

The inner wall of small intestine is thrown into many finger like processes called villi . These villi increase the surface area for absorption

Q.27. What is respiratory pigment ?

Ans :- A respiratory pigment is a chemical substance which can combine with oxygen in lungs where the partial pressure of oxygen is more and releases oxygen in the tissue where partial pressure of oxygen is less .

Q.28. Why are mitochondria known as ' power house of the cell ?

Ans :- Mitochondria carry out all the oxidation reaction of respiration and yield energy . They have a number of enzymes to carry out energy giving reactions . So , they are known as power house of the cell .

Q.29. Define breathing .

Ans :- The mechanism by which organisms obtain oxygen from the environment and release carbon dioxide is called breathing .

Q.30. List the four major components of blood .

Ans :- ( i ) RBC.

( ii ) WBC.

( iii ) Thrombocytes.

( iv ) Plasma.

Q.31. How does Lymph formed ?

Ans :- Through the pores present in the walls of blood capillaries , blood cell like white blood cells , plasma , some proteins and salts . This fluid forms lymph or tissue fluid .

Q.32. Name the four chambers of heart .

Ans :- ( i ) Left ventricles.

( ii ) Right ventricles.

( iii ) Left Atrium.

( iv ) Right Atrium.

### Q.33. What is blood ? Describe its composition .

Ans :- Blood is a fluid . It is a connective tissue . Blood contains the following components :-

( i ) Plasma :- It is a fluid matrix . It is colourless and contains a lot of water , many proteins and salt .

( ii ) RBC :- Blood looks red because of the red coloured pigment haemoglobin present in the Red Blood Cells .

( iii ) WBC :- These are lesser in number than the RBC . They are white or colourless cells . They protect us from infection .

( iv ) Blood platelets :- Blood platelets are fragments of cells and they do not possess nuclei . They help in clotting of blood .

### Q.34. What is diffusion ?

Ans :- The movement of the molecules of gases , liquids, and solulis from the region of higher

concentration to the region of lower concentration is known as diffusion .

Q.35. What is osmosis ?

Ans :- Osmosis is special type of diffusion of a liquid , when solvent moves through a semipermeable membrane from a place of higher diffusion pressure to a place of lower diffusion pressure .

Q.36. What are the functions of kidneys ?

Ans :- Function of kidneys :-

( i ) To separate urea and other waste products from the blood and to form the urine .

( ii ) It also removes the excess of salt .

( iii ) To maintain the water - salt balance of the body .

( iv ) To maintain the internal concentration .

Q.37. Name the two kinds of cells of xylem .

Ans :- ( i ) Tracheids.

( ii ) Vessels.

Q.38. What is the full form of ATP .

Ans :- Adenosine triphosphate .

Q.39. What do the following transport ?

( i ) Xylem.

( ii ) Phloem.

( iii ) Pulmonary Vein.

( iv ) Vena Cava .

Ans :- ( i ) Transports water and dissolved minerals in plants .

( ii ) Transports prepared food in plants .

( iii ) Transports oxygenated blood from lungs to left - ventricle of hearts .

( iv ) Transports deoxygenated blood from body to right ventricle .

Q.40. Explain the importance of soil for plant growth .

Ans :- Importance of soil for plant growths .

( i ) Soil allows fixing of plant .

( ii ) Soil is the source of water and minerals .

( iii ) Soil air has available oxygen for respiration to root cell .

Q.41 . List three differences between respiration in plants and respiration in animals .

Ans :-

<b>Respiration in plants</b>	<b>Respiration in animals</b>
1. All the cells of plant parts perform the respiration individually .	1. It is performed by specific respiratory organs for all the cells of body.
2. There is a little transport of gases from one part to the other .	2. Transport of gases is maximum.
3. Rate of respiration is low .	3. Rate of respiration is high .

Q.42. State the functions of blood .

Ans :- ( i ) Blood supplies nutrients and oxygen to various organs and cells of the body .

( ii ) It carries the waste matter formed in the cells to the excretory organs .

( iii ) It regulates the temperature of the body .

( iv ) It supplies hormones to different parts of the body .

Q.43. Match the words of column A with column B.

<b>Column A</b>	<b>Column B</b>
( a ) Phloem	( i ) Excretion
( b ) Nephron	( ii ) Translocation of food
( c ) Veins	( iii ) Clotting of blood
( d ) Platelets	( iv ) Deoxygenated blood

Ans :-

<b>Column A</b>	<b>Column B</b>
( a ) Phloem	( ii ) Translocation of food
( b ) Nephron	( i ) Excretion
( c ) Veins	( iv ) Deoxygenated blood
( d ) Platelets	( iii ) Clotting of blood

**Q.44. Why is transpiration important for plants ?**

Ans :- Importance of transpiration :+

( i ) Transpiration helps in absorption of water from soil .

( ii ) It helps in absorption and conduction of minerals also .

( iii ) By its cooling effect it - maintains temperature also.

#### Q.45. What are artificial kidneys ? How do they work ?

Ans :- An artificial kidney is a device to remove nitrogenous waste products from the blood through dialysis . Artificial kidneys contain a number of tubes with a semi - permeable lining , suspended in a tank filled with dialysing fluid . This fluid has the same osmotic pressure as blood , except that it is devoid of nitrogenous wastes . The patient's blood is passed through these tubes . During this passage , the waste products from the blood pass into dialysing fluid by diffusion . The purified blood is pumped back into the patient . This is similar to the function of the kidney , but it is different since there is no re - absorption involved .

#### Q.46. Which parts are include in human excretory system ?

Ans :- ( i ) a pair of kidneys.

( ii ) a pair of ureters.

( iii ) a urinary bladder.

( iv ) a urethra.

#### Q.47. Define excretion.

Ans :- The biological process involved in the removal of the excess of water, salts and toxic wastes from the body is called excretion.



## Multiple choice questions :

Q.1. The green color of plants is due to the presence of

( a ) Chlorophyll.

( b ) Carotene.

( c ) Xanthophyll.

( d ) Starch.

Ans :- (a) Chlorophyll.

Q.2. Saliva contains :

( a ) Renvin.

( b ) Pepsin.

( c ) Ptyalin.

( d ) Trypsin.

Ans :- ( c ) Ptyalin.

Q.3. The first step of break down of glucose takes place in

( a ) Nucleus.

( b ) Mitochondria.

( c ) Cytoplasm.

( d ) Lysosomes.

Ans :- (c) Cytoplasm.

Q.4. Water absorption by roots is under the influence of

( a ) Evaporation pull.

( b ) Transpiration pull.

( c ) Soil air.

( d ) Availability of soil water.

Ans :- ( d ) Availability of soil water.

Q.5. Which is end product of glycolysis ?

( a ) Pyruvic acid.

( b ) Acetyl Co A.

( c ) Lactic acid.

( d ) Citric acid.

Ans :- ( a ) Pyruvic acid.

Q.6. Functional unit in kidney is -

( a ) Nephron.

( b ) Nephritis.

( c ) Neuron.

( d ) Loop of Henle.

Ans :- ( a ) Nephron.

Q.7. The conversion of proteins waste , the ammonia into urea occurs mainly is

( a ) Liver.

( b ) kidney.

( c ) Lungs.

( d ) Intestine.

Ans :- ( a ) Liver.

Q.8. The chemical process that causes digestion of food by enzymes is called

( a ) Dehydration.

( b ) Hydration.

( c ) Hydrolyses.

( d ) Oxidations.

Ans :- ( c ) Hydrolyses .

Q.9. Major function of Hcl of gastric juice is

( a ) Providing acidic medium for pepsin.

( b ) Facilitates absorption of food.

( c ) kills microorganisms.

( d ) ( a ) and ( c )

Ans :- ( d ) ( a ) and ( c )

Q.10. Urea formation takes place in

( a ) Liver.

( b ) kidney.

( c ) Lungs.

( d ) Skin.

Ans :- ( a ) Liver.