

Homework

① Life Processes

Case based questions

1. Q. How does Lymph function as a middleman?

ans - It transports food materials, oxygen, hormones etc. to the body cells and brings carbon dioxide and other metabolic wastes from the body cells to blood and then finally pours the same into venous system.

Q. What are lymphocytes and why do we need them?

ans- Lymphocytes are a type of WBCs (leucocytes) which ~~are fight against~~ are a major part of the lymph. Lymphocytes have a very significant role in our body. We need lymphocytes to fight against infection. Lymphocytes are responsible for immune responses of the body.

Q. With respect to composition how is blood different from lymph?

ans- Blood is composed of plasma and formed elements. But lymph is composed of plasma except blood proteins, RBC and platelets.

Q. How does lymph help in fat absorption?

ans- The fatty acids and glycerol being insoluble, can't be absorbed into the blood. They are absorbed by the lymph vessels (lacteals) present in the villi in the form of chylomicrons.

Q. Why is excretion necessary in an organism?

ans - During biochemical reactions, many toxic waste products of metabolism are formed. If allowed to accumulate, these products of organism's cells could generally be harmful and prevent the maintenance of a steady state.

Qe Name any two latex which is used for human welfare.

ans - * Rubber
* Chicle

Qe How does transpiration occur?

ans - Transpiration mainly occurs by the process of diffusion through stomata. There is loss of excess water in the form of water vapours through stomata.

Qe What are secondary metabolites?

ans - Secondary metabolites are the waste products which are rendered harmless and then stored in the plant body as solid bodies. Like - Raphides, tannins, resins, gum, rubber and essential oils.

Two mark questions

1. Explain the significance of peristalsis in the process of digestion. Which organ is involved in it?

ans- * Peristalsis is a movement which involves the contraction and expansion movement of walls.

* Peristalsis helps the partially digested food to be pushed forward in the track.

* It occurs throughout the alimentary canal. Organs such as - Oesophagus, stomach, intestines and rectum exhibit this movement.

2. How does translocation take place in plants?

ans- * Translocation or transport of food from leaves to other parts of plant is carried out through phloem which is a complex permanent tissue. The phloem elements remain in close contact with the mesophyll cells of leaves.

* Soluble carbohydrates enter the phloem elements from mesophyll cells of the leaf. Once the food molecules

enter into the phloem, they are transported upward, downward or lateral directions. They are transported to the stem, the roots, developing buds, flowers, fruits, growing apex etc.

3. "Breathing cycle is rhythmic while gaseous exchange is a continuous process." Justify

ans - * The breathing cycle involves inhalation and exhalation of air due to alternate expansion and contraction of thoracic cavity. Thus, it is a rhythmic process.

* Exchange of gases is a continuous process as it takes place between the blood and each and every cells by diffusion. Hence, the breathing cycle is rhythmic whereas, exchange of gases is a continuous process.

4. Which is the functional unit of kidney? Explain regulation of urine formation.

ans - * The functional unit of kidney is nephron

* Urine formation involves three major processes &

→ Ultra filtration of blood to form glomerular filtrate

→ Selective reabsorption of substances (oxygen, glucose, amino acids ions Na^+ , K^+ , Cl^- etc) from the filtrate.

→ Secretion of certain substances into the filtrate.

5. Leakage of blood from the vessels reduce pumping efficiency. How?

ans - Whenever there is leakage of blood from the vessels, there is a loss of pressure inside the blood vessels. This results for increased heart beat, failure of organs and death of the individual. Thus the leakage would reduce the efficiency of the pumping system. To avoid this, the blood has platelets which circulate around the body and plug these leaks by helping to clot the blood at these points of injury.

Three marks

1. How does blood

(a) Transport gases

(b) Regulate body temperature

(c) Helps in body defence

ans. (a) blood transports gases by the help of respiratory pigment haemoglobin present in the RBCs and by the dissolution of gases in blood plasma.

(b) Blood regulates body temperature by the help of plasma proteins. Plasma proteins help in uniform distribution of heat all over the body.

(c) Blood helps in body defence by the help of immunoglobulin and lysosomes (type of WBC).

Q4

Photosynthesis

* It takes place in green cells of plants

* It occurs during day time only.

* Energy is stored.

* CO_2 and H_2O both are used up.

* It is an anabolic process.

Respiration

* It takes place in all living beings.

* It occurs throughout the life of an organism.

* Energy is released.

* CO_2 and H_2O are released.

* It is a catabolic process.

3. Explain nutrition in Amoeba.

ans - * When Amoeba comes in contact with food particles, it forms pseudopodia which engulf the prey by forming a food cup. This process is called phagocytosis.

* When the tips of encircling pseudopodia touch each other, the food is encaptured into a bag, called food vacuole. The food vacuole serves as a temporary stomach secreting digestive juices. The digested food gets absorbed and diffuses into the cytoplasm and then assimilated.

* The egestion of undigested food takes place at any point on the surface of the body.

4. What is dark reaction? where does it occur? write its chemical reaction.

ans - Dark reaction is totally enzymatic process which is light independent reaction of photosynthesis. It involves the formation of glucose with the use of products formed in light reaction. It occurs in the stroma part of chloroplast.

Net reaction of calvin cycle

