Q: How does lymph function as a middlemen?

Ans: Lymph acts as a middle man by transporting food materials, oxygen, hormones etc to the body cells and brings carbon dioxide and other metabolic wastes from the body cells to blood.

Q: What are lymphocytes & why do we need them.

Ans: A lymphocyte is a type of white blood cell that is part of immune system and is present in lymph. There are two types of lymphocytes: B cells & T cells. The B cells produce antibodies that are used to attack invading bacteria, virus & toxins.

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

Ans: Blood is red in colour, whereas lymph is colourless fluid. Blood has RBC, WBC and Platelets whereas lymph has lymphocytes. Blood flows through blood vessels and lymph through lymphatic vessels.

Q: How does lymph help in fat absorption?

Ans: Special lymph capillaries, called lacteals, in the centre of each villus absorb the fats from the intestine. The lymph nodes feed the lymphatic trunks which join to form collecting ducts and then empty into the subclavian veins that feed blood back to the heart. Thus, level of fat never rises sharply in blood & it helps in maintaining the health

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2: Q: Why is excretion necessary in organisms?

Ans: Excretion is necessary in organisms because, it helps in removal of waste products from the body in the form of urine and feaces or latex or guttation.

Q: Name any two latex which is used for human welfare.

Ans: Rubber and Gum.

Q: How does transpiration occur?

Ans: Transpiration mainly takes place in aerial part of the plant, Stomata of leaves evaporate high amount of water in form of vapour which helps to keep the plant cool. Cellulose microfibrils open the Stomata when guard cells lose turgor, due to loss of water the inner walls regains their original shape and becomes flaccid.

Q: What are secondary metabolites?

Ans: alkaloids, latex, tannins etc.

Two marks question

1: Peristalsis movement of digestive system helps the food to move downwards from mouth to the stomach through oesophagus. esophagus is involved in it

2: In translocation food molecules enter the part of the phloem called the sieve tubes where they can be transported upwards or downwards to all the part including root. It is achieved by utilising ATP energy

3: The breathing cycle involves inhalation and exhalation of air due to alternate expansion & contraction of thoracic cavity. Thus it is a rythmic process. But exchange of gases is a continous process as it takes place btw the blood & and cell by diffusion.

4: Nephron: Urine formation is regulated by nephron of kidneys by 3 -

(i) Glomerular filteration of blood.

(ii) Selective reabsorption of water & useful substance.

(iii) Tubular secretion.

* The unfiltered dirty blood containing waste (urea) is brought by renal artery enters the glomerus.

(i) Glomelular filteration:-

* Urine formation begins by filtration of blood in glomerulus and then blood enters into the Bowman's capsule where the glomelular filtrate is formed.

* The afferent arteriole being wider than the efferent arteriole entering the glomerulus helps in increasing the blood pressure thereby helping in filteration of blood.

(ii) Tubular reabsorption:-

* The filterate containing useful as well as waste passes through the tubule and essential nutrients like glucose, aminoacids, most salts, some water and ions are reabsorbed into blood through blood capillaries.

* The ADH finally acts in reabsorbing excess water & decreases volume of urine to be formed.

(iii) Tubular secretion:-

* On entering tubule; creatinine, uric acid are secreted by through active transport or diffusion across membrane, H^+ ions, K^+ ions, NH_3. certain drugs are secreted into the filterate.

* Now, the liquid consist of waste substances (urea), some unwanted salts & excessive water remaining = Urine.

* The nephron carries this urine into the collecting duct of kidney from where it is carried to ureter.
* From ureter, urine passes to the urinary bladder where it is stored for some time and later disposed off through urethra.

5: Leakage of blood vessels may be because of high blood pressure and the walls of blood vessels being incapable does not able to handle the pressure exerted by fast flowing blood and this leads to the rupture of the blood vessels. This prevents the efficiency of the heart pumping blood to different organs.

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1. a) Blood transports gases during heart circulation. The carbon dioxide gas present in blood reaches the right atrium where it is purified & sent to right ventricle and from right ventricle to left ventricle, then to left atrium & then through aorta that purified blood which contains oxygen is transported to different parts of the body & CO_2 is released out.

b) Heat produced by our like functions, by our limbs when we use them and in the brain, is carried by blood throughout our bodies. If the temprature starts to go up, blood going through the hypothalamus triggers blood rush to the hands, feet & skin to dump heat. If it still goes on sweating starts. If we start to get cold, blood to limbs and skin is restricted to conserve heat. If it isn't controlled shivers begins.

c) Blood contains cells that are beneficial for body defence. One of these is WBC's. These blood cells produce antibodies and protect the body when a harmful bacteria or germs appear. Thus, it helps in body defence.

	PHOTOSYNTHESIS	RESPIRATION
⇒)	Carbon dioxide is used up and oxygen is released.	⇒) Oxygen is used up and carbon dioxide is released.
⇒)	Occurs in plants & some bacteria.	⇒) Occurs in all living organisms.
⇒)	Glucose is produced.	⇒) Glucose is broken down into energy.
⇒)	Raw materials:- H_2O, CO_2 & Sunlight.	⇒) Raw materials :- Glucose

3. Nutrition in Amoeba occurs in the following way:-

⇒) Ingestion:- Amoeba ingests food with the assistance of it's finger like projections called pseudopodia. At the point when a food molecule approaches Amoeba, it produces pseudopodia around it & structures a food vacuole inside the amoeba.

⇒) Digesting:- various catalysts from the cytoplasm go into the food vacuole & separate them into straight-forward dissolvable atoms.

⇒) Ingestion:- The basic dissolved food is consumed by cytoplasm of Amoeba from food vacuole through diffusion.

=> Osmosis:- Amoeba cell acquires vitality from the retained food through breath. The vitality is used by Amoeba for its development and Kin of the body.

=) Egestion:- When a lot of undigested food gets gathered inside amoeba, its cell film breaks & loses out the undigested food.

4) Dark Reaction is the second step of photosynthesis that doesn't require light & ~~is called as~~ occurs outside the thylakoids. It makes use of the organic molecule (ATP and NADPH). It occurs outside the thylakoids.

It chemical equation:-

$$ATP + NADPH + CO_2 + H_2O \longrightarrow C_6H_{12}O_6$$