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Class: X
Subject: Biology
Topic: Life Processes
No. of Questions: 20

Q1. The longest part of the alimentary canal is _____.
(a) Small intestine
(b) Large intestine
(c) Oesophagus
(d) rectum

Sol. (a)
The small intestine is the longest part of alimentary canal because it is involved in the dual function of digestion and absorption of digested food. The large intestine is called "large" due to the diameter of its lumen and not for its length. It is shorter than the small intestine in length and plays the role of water absorption only. Esophagus transfers food from mouth to stomach while the rectum temporarily stores the faecal matter. Thus, these both do not require being too long.

Q2. Saprozoic organisms feed on _____.
(a) Blood
(b) Dead decayed matter
(c) Fruits
(d) Members of its own species

Sol. (b)
Saprozoic organisms feed on dead and decayed matter. Those organisms feeding on blood are called sanguivores, and fruit eating animals are called frugivores. Animals that eat members of their own species are called cannibals.

Q3. Which of the following enzymes is responsible for bringing about the emulsification of fats?
(a) Amylase
(b) Pepsin
(c) Mucus
(d) Bile

Sol. (d)

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Email: info@askiitians.com
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Emulsification is the process in which large fat globules are broken down into smaller droplets. This is possible only if certain materials decrease the surface tension of the large molecule and break it. This surfactant property is present in molecules that have both polar (charged) and non polar (non-charged) ends. Bile has this property. Amylase and pepsin are enzymes that catalyze the digestion of carbohydrates and proteins respectively, but they can not break fats. Mucus is present in the stomach to protect the internal lining from acid.

Q4. The energy trapped by chlorophyll molecule is used for _____.
(a) The generation of ATP
(b) The generation of $NADPH_2$
(c) The splitting of water molecule
(d) All of the above

Sol. (d)
Energy is trapped in chlorophyll during day time and it is used to carry out the light reaction of photosynthesis. It is utilised to split water molecules (photolysis) and this energy is stored for dark reaction in the form of ATP and NADPH. Thus, all are correct.

Q5. Which of the following pairs is incorrectly matched?
(a) Parasite : Cuscuta
(b) Parasite : Yeast
(c) Saprophyte : Mushroom
(d) Holozoic : Amoeba

Sol. (b)
Cuscuta is a non-green plant and cannot perform photosynthesis. So, it depends on other plants for nutrition. Hence, it is parasitic. Mushroom, being a fungus is a saprophyte as it draws nutrition from dead and decaying matter. Amoeba uses pseudopodia to ingest food particles and digests it inside its own body, i.e. holozoic nutrition. Yeast is also a fungus and it is saprophytic. Thus, option (2) is incorrect.

Q6. Where does digestion of starch begin in human body?

Sol. The digestion of starch starts in mouth by the action of enzyme salivary amylase.

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Q7. Give one example of saprophytic and parasitic nutrition.

Sol. Saprophytic nutrition- fungi Parasitic nutrition- leech

Q8. What is common for *Cuscuta*, ticks and leeches?

Sol. That they are all parasites.

Q9. Name the substrates for the following enzymes
(a) Trypsin
(b) Amylase
(c) Pepsin
(d) Lipase

Sol. (a) peptides (b) Starch (c) – proteins (d) Lipid

Q10. What is villi? What are its functions?

Sol. Villi are small finger like projections on the surface of small intestine. It increases the absorptive surface area of the small intestine. There are enzymes on the surface which help in digestion.

Q11. What advantage over an aquatic organism does terrestrial organism have with regard to obtaining oxygen for respiration?

Sol. Terrestrial organisms have lungs.

Q12. Differentiate between single and double circulation found in vertebrates.

Sol. In single circulation blood passes through the heart once whereas in double circulation blood passes through the heart twice.

Q13. What are the functions of lymph in our body?

Sol. a) The main function of the lymphatic system is to collect and transport tissue fluids from the intercellular spaces in all the tissues of the body, back to the veins in the blood system.

b) digested fats are absorbed and then transported from the villi in the small intestine to the bloodstream via the lacteals and lymph vessels.

c) new lymphocytes are manufactured in the lymph nodes.

Q14. How is hemoglobin associated with respiration explained?

Sol. Hemoglobin carries oxygen present on RBCS.

Q15. What are the modes of excretion in plants?

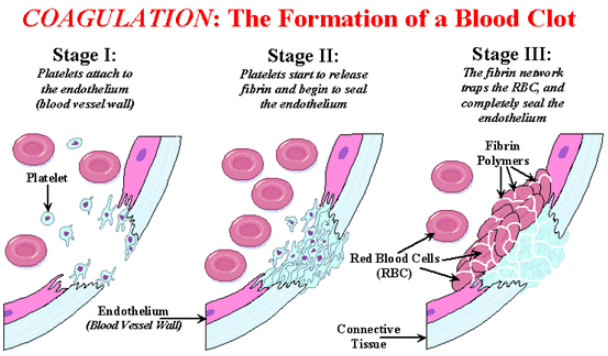
Sol. Diffusion, osmosis, as gums and resins.

Q16. Give an experiment to prove the essentiality of light for photosynthesis.

Sol. Activity 6.1 in NCERT.

Q17. What is clotting of blood? Write a flow chart showing major events taking place in clotting of blood.

Sol. Clotting of blood means coagulation of blood which prevents bleeding from occurring.



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Q18. What are two stages in photosynthesis?

Sol. The two stages in photosynthesis are light phase and dark phase. During light phase, light energy is converted into chemical energy and water molecule is splitted up into hydrogen and oxygen. Reduction of carbon dioxide into carbohydrates.

Q19. What is the difference between arteries and veins?

Sol. Arteries carry oxygenated blood and veins carry deoxygenated blood.

Q20. How s transpiration pull responsible for upward movement of water?

Sol. The water which is lost through the stomata is replaced by water from the xylem vessels in the leaf. In fact, evaporation of water molecules from the cells of a leaf creates a suction which pulls water from the xylem cells of roots. The loss of water in the form of vapor from the aerial parts of the plant is known as transpiration. Thus, transpiration helps in the absorption and upward movement of water and minerals dissolved in it from roots to the leaves. It also helps in temperature regulation. The effect of root pressure in transport of water is more important at night. During the day when the stomata are open, the transpiration pull becomes the major driving force in the movement of water in the xylem.