

CLASS & SECTION: X

SUBJECT: BIOLOGY

LESSON – LIFE PROCESSES

1. **Define life processes.**

ANS Processes that are essential for the survival and the maintenance job of an organism are known as life processes.

2. **Is ‘nutrition’ a necessity for an organism? Discuss.**

ANS Nutrition is required by every organism for various purposes. An organism needs energy to carry out various metabolic activities, and this energy comes from nutrients present in food, which is the most potential source of nutrition.

3. **If a plant is releasing carbon dioxide and taking in oxygen during the day, does it mean that there is no photosynthesis occurring? Justify your answer.**

ANS If a plant is releasing carbon dioxide and taking in oxygen during the day, it means that respiration is happening in plant. But it does not mean that photosynthesis is not happening. Carbon dioxide is released after respiration comes out of stomata. Respiration is independent of photosynthesis.

4. **Leaves of a healthy potted plant are coated with Vaseline. Will this plant remain healthy for long? Give reasons for your answer.**

ANS If leaves of a healthy potted plant are coated with Vaseline, it will block the stomatal pores on leaves. Blockage of stomata will stop transpiration and exchange of gases from leaves. Transpiration plays an important role in ascent of sap in plants. Hence, lack of transpiration will stop ascent of sap. Moreover, stoppage of exchange of gases would also stop respiration and photosynthesis in leaves. This will result in death of leaves and finally the plant would die due to lack of food.

5. **What are the differences between autotrophic and heterotrophic nutrition.**

ANS	Autotrophic respiration	Heterotrophic respiration
	The mode of nutrition in which an organism makes its own food from simple inorganic substances such as CO ₂ and water in the presence of sunlight and chlorophyll	Food is obtained directly or indirectly from autotrophs. This food is broken down with the help of enzymes.
	Presence of green pigment (chlorophyll) is required	No pigment is required in this type of nutrition
	Food is generally prepared during daytime	Food is prepared at all times
	All green plants and some bacteria have this type of nutrition	All animals and fungi have this type of nutrition

6. **What are the adaptations of leaf for photosynthesis?**

ANS Leaves show the following adaptations for photosynthesis:
 i. Flat surface to allow greater exposure to sunlight
 ii. Presence of chlorophyll to trap solar energy
 iii. Larger number of stomata on lower surface for easy transpiration.

7. **Differentiate between aerobic and anaerobic respiration. Name some organisms that use the anaerobic mode of respiration?**

ANS

Some organisms that use the anaerobic mode of respiration are - yeast, bacteria.

Aerobic respiration	Anaerobic respiration
Takes place in presence of oxygen	Take place in absence of oxygen.
Its end products are carbon dioxide and water	Its end products are ethanol and carbon dioxide.
More energy is released.	Less energy is released.
It takes place in cytoplasm and mitochondria.	It takes place only in the cytoplasm
Complete oxidation of glucose takes place.	Incomplete oxidation of glucose takes place

8. **What will happen if platelets were absent in the blood?**

ANS

Platelets play an important role in clotting of blood. Clotting of blood is a defence mechanism. It prevents excess loss of blood in case of injury. Lack of platelet will not allow the blood to clot. This will result in excess loss of blood in case of injury. This may prove fatal for the person.

9. **Compare and contrast arteries and veins on the basis of their structure and function.**

ANS

ARTERIES	VEINS
Carry oxygenated blood from heart to body parts except pulmonary artery	Carry deoxygenated blood from body parts to heart except pulmonary vein
Also called distributing vessel	Also called collecting vessel
Have thick and elastic walls	Have thin and less elastic walls
Valves are absent	Valves are present to prevent the back flow of blood.
Deeply seated	Superficially placed
Blood flows under high pressure	Blood flows under low pressure

10 List out the difference between the transport of materials in xylem and phloem

ANS.

Xylem	Phloem
Transport water and minerals from the roots to other parts of the plant	Transport the product of photosynthesis from leaves to other parts of the plant
Transport is unidirectional	Transport is bidirectional
Transport in xylem occurs with the help of simple physical forces such as transpiration pull	Transport of food in phloem requires energy in the form of ATP

Instructions – Write down all the question and answers 1-10 in Biology class work.

Draw all the diagrams of Lesson – 6 in the class work.

Note - Students those who have submitted their class work in the school can complete the writing work after reopening. Sufficient time will be given to them. Those students can draw the diagrams in A4 sheets and later can be pasted in the class work.