

CLASS 10; WORK SHEET 2: CHAPTER-6 /2014

1. Why is diffusion insufficient to meet oxygen requirements of multi-cellular organisms like humans?

In single-celled organisms the entire surface of the organisms is in contact with the environments for the diffusion of substances. In multi-cellular organisms all the cells may not be in direct contact with the surrounding environment. So simple diffusion will not meet the requirements of all the cells.

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

3. Why are molecular movements needed for life?

Living organisms are well organized structures. The ordered nature of living organism can break down over time due to the effects of the environments (if the order breaks down, the organism cannot remain). To repair and maintain the order of these structures, molecular movements are needed for life.

4. What are Life Processes?

5. What is Nutrition?

6. What is the function of food?

7. What is Respiration?

8. What is the need for a transportation system in organisms?

9. What is Excretion?

10. What are the outside raw materials used by an organism?

The outside raw materials, food and oxygen are used for production of energy and biosynthesis of body constituents.

11. What processes would you consider essential for maintaining life?

12. How do living things get their food?

Autotrophic Nutrition - From simple inorganic substances like carbon dioxide and water.

Heterotrophic Nutrition – From complex food synthesized by the autotrophs.

13. What is the difference between autotrophic and heterotrophic nutrition?

In autotrophs, food is synthesized from simple inorganic substance like carbon dioxide and water whereas in heterotrophs, food is derived from the complex food synthesized by the autotrophs. They have enzymes for breaking down the complex food taken from autotrophs. Examples of autotrophs are green plants, some bacteria, etc. Examples of heterotrophs are animals, fungi, etc.

14. What are Enzymes? A. Enzymes are biocatalysts.

15. What is Photosynthesis?

16. What is the function of carbohydrates in the body?

The function of carbohydrates in the body is to provide energy to the body.

17. Name the internal energy reserve in the form of carbohydrates

a) In plants

b) In the human body

a) Starch b) Glycogen

18. Draw cross-section of a leaf showing the internal structure of the leaf.

19. Name the pigment that absorbs sunlight.

Chlorophyll

20. Name the organelle necessary for photosynthesis.

Chloroplast

21. What is the result of starch test done with a variegated leaf?

Only the green colored parts of the leaf will show blue-black colour showing that starch is produced only there, i.e. chlorophyll is necessary for photosynthesis.

22. Draw open and closed stomata and label its parts.

23. What are Stomata? What are their functions?

Stomata are tiny pores on the surface of a leaf.

Functions of stomata:

a. Exchange of gases – Carbon dioxide and Oxygen. b. Transpiration

24. What is the function of guard-cells?

The function of the guard-cells are to help the opening and closing of the stomatal pore.

25. What causes the stomatal pore to open and close?

The guard-cells swell when water flows into them causing the stomatal pore to open when the guard-cells shrink, the stomatal pore closes.

26. Draw and describe an experiment to show that sunlight is essential for photosynthesis.

Write your own answer based on lab manual

27. Where do plants get each of the raw materials required for photosynthesis?

Carbon dioxide – Land plants - From the atmosphere.

Aquatic Plants - From the carbon dioxide dissolved in water.

Water – From the soil.

28. Name a few elements taken by plants from the soil.

Nitrogen, Phosphorous, Iron and Magnesium.

29. Name the element absorbed from the soil which is essential for protein synthesis. In what form is it absorbed?

Nitrogen. Nitrogen is absorbed in the form of nitrites, nitrates and organic compounds prepared by nitrogen fixing bacteria in the soil.

Now answer these questions in your note book

1. Write the three events occurring during photosynthesis.
2. Draw and describe the experiment to show that carbon dioxide is essential for photosynthesis.

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3. How do you test the presence of starch in a leaf?
4. What is the chemical equation for photosynthesis?