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RRB science MCQs Quiz 9

Directions: Kindly Study the following questions carefully and choose the right answer.

1. What is the most basic criteria used to decide whether something is alive?

- A. Walking B. Breathing C. Molecular movements D. Life processes

2. Which of the following processes are essential for maintaining life?

- A. Nutrition B. Respiration C. Transportation D. All of the above

3. Organisms using simple food material acquired from inorganic sources in the form of carbon dioxide and water are called

- A. Autotrophs B. Heterotrophs C. Organotroph D. Both A and C

4. Photosynthesis is the process by which autotrophs take in carbon dioxide and water and convert them into carbohydrates in the presence of sunlight and _____.

- A. Energy B. Chlorophyll C. Enzymes D. Bio-catalysts.

5. In plants, the carbohydrates which are not used immediately are stored in the form of starch, which serves as the internal energy reserve to be used as and when required by the plant. A somewhat similar situation is seen in humans where some of the energy derived from the food is stored in the body. This is in the form of _____.

- A. Glucose B. Fats B. Glycogen B. Proteins

6. The exchange of gases takes place in the leaves through these pores for the purpose of photosynthesis. These pores are called-

- A. Guard Cells B. Stomata C. Chloroplast D. None of the above

7. The opening and closing of the stomatal pores is a function of the

- A. Guard cells B. Chloroplast C. Xylem D. Phloem

8. Which of the following is an essential element used in the synthesis of proteins and other compounds?

- A. Phosphorus B. Iron C. Magnesium D. Nitrogen

9. Which of the following is true about the digestion process of the Paramecium?

I. Food is taken in at a specific spot.

II. Food is moved to this spot by the movement of cilia.

III. Cilia are present only at the front and back of the organism.

- A. Only I B. Only III C. Only I and II D. All of the above

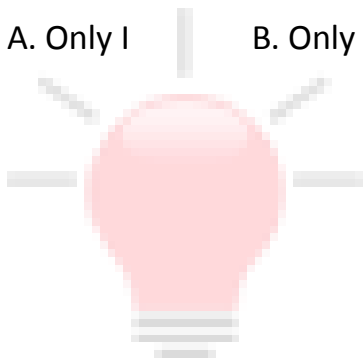
10. Which of the following is/are true with respect to Amoeba?

I. It is a multi-cellular organism.

II. It takes in food using temporary finger-like extensions called Pseudopodia.

III. It forms a food vacuole around the food particle.

- A. Only I B. Only II and III C. Only I and II D. All of the above



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Correct Answers:

1	2	3	4	5	6	7	8	9	10
D	D	A	B	C	B	A	D	C	B

Explanations:

1.

Mostly, any kind of *visible* movement such as breathing, walking or growing is referred to decide if something is alive or not. But, a living organism may have movements not visible to the naked eye. Thus, it is the presence of life processes that is the basic criteria to decide whether something is alive or not.

Hence, option D is correct.

2.

The following life processes are essential for maintaining life:

Nutrition

Respiration

Transportation

Excretion

Hence, option D is correct.

3.

Autotroph means *self-feeding* in Greek or *producer* and is an organism that produces complex organic compounds such as carbohydrates, fats, and proteins from simple substances using energy from light. They are the producers in a food chain, such as plants on land or algae in water. Ex: Plants are the most familiar type of autotroph. Algae, which live in water and whose larger forms are known as seaweed, is autotrophic. Phytoplankton, tiny organisms that live in the ocean, are autotrophs. Some types of bacteria are autotrophs.

A heterotroph is an organism that absorbs organic carbon rather than fix carbon from inorganic sources such as carbon dioxide in order to be able to produce energy and synthesize compounds to maintain its life.

An organotroph is an organism that obtains hydrogen or electrons from organic substrates.

Hence, option A is correct.

4.

Plants use sunlight and chlorophyll to convert substances into carbohydrates.
Hence, option B is correct.

5.

Energy is stored in the human in the form of glycogen.
Hence, option C is correct.

6.

Stomata are tiny pores present on the surface of the leaves via which exchange of gases takes place in the leaves for the purpose of photosynthesis. However, exchange of gases *also* occurs across the surface of stems, roots and leaves as well. Since large amounts of water can also be lost through these stomata, the plant closes these pores when it does not need carbon dioxide for photosynthesis.

Hence, option B is correct.

7.

The opening and closing of the pores is a function of the **guard cells**. They swell when water flows into them, causing the stomatal pore to open and likewise, the pore closes if the guard cells shrink.

Hence, option A is correct.

8.

Although all of the elements above are used by plants and taken up via the soil, nitrogen is especially essential and used specifically for the for the synthesis of proteins and other compounds. It is taken up in the form of **inorganic nitrates or nitrites**. Or it is taken up as **organic compounds** which have been prepared by bacteria from atmospheric nitrogen.

Hence, option D is correct.

9.

I and II are correct. However, III is incorrect.

Cilia are microscopic, hair-like structures that extend outward from the surface of the organism. Paramecium feeds on microorganisms like bacteria, algae, and yeasts. The paramecium uses its

cilia to sweep the food along with some water into the cell mouth after it falls into the oral groove. Cilia cover the entire surface of the cell.

Hence, option C is correct.

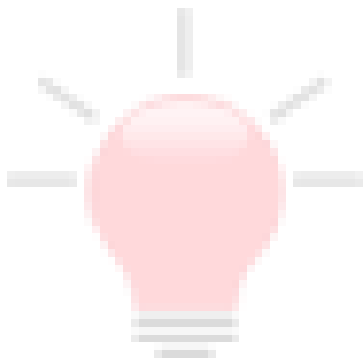
10.

I is incorrect as the Amoeba is a uni-cellular organism.

Both II and III are correct.

Amoeba takes in food using temporary finger-like extensions of the cell surface which fuse over the food particle forming a food-vacuole. Inside the food vacuole, complex substances are broken down into simpler ones which then diffuse into the cytoplasm.

Hence, option B is correct.



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