Nutrition in Plants

Select the correct option:

Q1. Iodine shows blue-black colour with

i. glucose ii. protein iii. starch iv. fat

Q2. Photosynthesis converts

a. solar energy to mechanical energy b. mechanical energy to solar energy

c. solar energy to chemical energy d. chemical energy to solar energy

Q3. Mode of nutrition in fungi is

a. autotrophic b. parasitic c. saprophytic d. insectivores

Q4. Organisms that can synthesize their own food with the help of simple inorganic substances are called

a. autotrophs b. saprophytes c. parasites d. carnivores

Q5. In the absence of which of the following will photosynthesis not occur in leaves?

a. Guard cells b. Chlorophyll c. Vacuole d. Space between cells

Q6. The term that is used for the mode of nutrition in yeast, mushroom and bread-mould is

a. Autotrophic b. insectivorous c. Saprophytic d. parasitic

Q7. Two organisms are good friends and live together. One provides shelter, water and nutrients while the other prepares and provides food. Such an association of organisms is termed as

a. Saprophytes b. parasite c. Autotroph d. Symboisis

Q8. Which of the following raw material is available in the air for photosynthesis?

a. Oxygen b. Carbon dioxide c. Nitrogen d. Hydrogen

Answer the following

Q1. What is the immediate product of photosynthesis?

Q2. What is the ultimate source of energy on earth?

Q3. What is the small openings on the leaf which allow gaseous exchange?

Q4. Write the similarity between the following pairs.

i) Bread mould and mushroom

ii) Venus's flytrap and pitcher plant

iii) Mistletoe and Cuscuta

iv) Rhizobium in leguminous plants and lichen

Q5. What type of plant is Cuscuta?

Q6. When iodine is added to starch, it becomes _____ in color.

Q7. What is the ultimate source of all the energy needs of our body?

Q8. Some green plants are also heterotrophic in nature. True of false?

Q9. Which cells control the opening and closing of stomata?

Q10. Potato and ginger are both underground parts that store food. Where is the food prepared in these plants?

Q11. Nitrogen is an essential nutrient for plant growth. But farmers who cultivate pulse crops like green gram, Bengal gram, black gram, etc. do not apply nitrogenous fertilizers during cultivation. why?

Q12. Wheat dough if left in the open, after a few days, starts to emit a foul smell and becomes unfit for use. Give reason.

Q13. Sunlight, chlorophyll, carbon dioxide water and minerals are raw materials essential for photosynthesis. Do you know where they are available? Fill in the blanks with appropriate raw materials.

a) Available in the plant : _____

b) Available in the soil : _____, _____

c) Available in the air : _____

d) Available during day : _____

Q14. Fill in the blanks of the paragraph given below with the words provided in the box.

Chlorophyll, energy, food, carbon dioxide, water, photosynthesis

NOTE: A word can be used more than once.

Leaves have a green pigment called _____ which captures _____ from sunlight. This _____ is used in the process of _____ and along with other raw materials like _____ and _____ synthesize _____.

Q15. Can you give me a name?

Solve each of the following riddles by writing the name of the organism and its mode of nutrition. One riddle is solved to help you.

(a) I am tall but I cannot move. I am green and can prepare my own food. tree, autotroph

(b) I live in water; people keep me in an aquarium and food me. _____

(c) I am small and I can fly. I disturb your sleep, bite you and suck your blood which is my food. _____ , _____

(d) I am white and soft. I grow well in the rainy season. Children pluck me from the ground and admire me. I absorb nutrients from decomposed dead parts of plants and animals in the soil. _____ , _____.

Q16. Why can't animals make food from carbon dioxide, water and sunlight, like plants do?

Q17. The pitcher plant and Venus flytrap are green plants that can photosynthesize. Why do they need to feed on insects?

Q18. Plants can synthesize only carbohydrates. then, how is the requirement of other nutrients met in plants?

Q19. Are all plants autotrophs? Support your answer with suitable examples.

Q20. Give reasons for the following:

i) The Venus's flytrap and pitcher plant perform photosynthesis, yet they trap insects.

ii) In the absence of photosynthesis, life is not possible on earth.

iii) Fungi can be useful as well as harmful for humans.

iv) Saprophytes are called cleaners of the environment.

Q21. Give one similarity and one dissimilarity between parasites and saprotrophs.

Q22. Leaves are called the kitchens of the plants. We also make our food in the kitchen. Are we autrotrophs too?

Q23. Why are plants not found on the ocean bed?

Q24. Raju is a poor farmer. He cannot spend money on buying fertilizers. What suggestion will you give him to increase fertility of his farmland?

Q25. Sumit had lunch in school but forgot to take home his lunch box on Saturday. When he opened it on Monday, he found that it had some blackish brown cotton-like stuff in it. What was it? How do you think it got there?

Answers

Select the correct option:

Q1. Starch
Q2. Solar energy to chemical energy
Q3. saprophytic
Q4. autotrophs
Q5. Chlorphyll
Q6. saprophytic
Q7. symbiosis
Q8. Carbon dioxide

Answer the following

Q1. Glucose
Q2. Sun
Q3. stomata
Q4. i) fungi / saptophytes ii) insectivores iii) parasites iv) Symbiotic relationship
Q5. Cuscuta is a parasitic plant which obtain food from the other plants.
Q6. blue black
Q7. Food
Q8. True
Q9. The guard cells
Q10. In potato and ginger plants, leaves are above ground whereas underground stems store the reserve food material. The leaves prepare food through photosynthesis and transport it to the underground parts for storage.
Q11. Pulse crops like green gram, bengal gram, black gram etc., are the leguminous crops which have symbiotic association with Rhizobium bacteria. Rhizobium converts the atmospheric nitrogen into a soluble form (nitrogen fixation) in the soil. Plants absorb this soluble form of nitrogen from the soil. Thus, growing of leguminous crops helps to enrich soil with nitrogen and there is no need to apply nitrogenous fertilisers to the leguminous crops.

Q12. Carbohydrate in wheat dough encourages growth of yeast and other saprophytic fungi which breakdown carbohydrates and emit a foul smell.

Q13. (a) ChlorophyII
(b) Water, minerals
(c) Carbon dioxide
(d) Sunlight

Q14. (a) chlorophyll
(b) energy
(c) energy
(d) photosynthesis
(e) carbon dioxide
(f) water
(g) food

Q15. (b) Fish, heterotroph
(c) Mosquito, parasite
(d) Mushroom, saprophyte

Q16. Unlike plants, animals lack chloroplast in their body. So, animals can not prepare their food from carbon dioxide, water and sunlight. Chloroplast is an organelle which is specifically present in green plants. It has a green coloured pigment called chlorophyll. This chlorophyll traps the sunlight and enables plants to make food, which animals can not.

Q17. Even though Venus flytrap and pitcher plant are green plants, they can not perform photosynthesis because they grow in a soil which is poor in nutrients. Therefore, to obtain nutrition they feed on insects. This nutrition supplements the food prepared by them via photosynthesis.

Q18. No

Q19. No, Insectivorous (Heterotrophs) also cuscutta.

Q20. i) To fulfill their nutritional requirements.
ii) No oxygen, no food
iii) Can cause diseases and food poisoning. And its useful as food nourishes clean environment.
iv) They feed on dead decaying matter on earth.

Q21. Heterotrophs, Parasites live on living things and Saprotrophs on dead and decaying.

Q22. No, since our bodies don't make our own food.

Q23. This is because sunlight is unable to reach the ocean bed, and thus only very few plants grow on the ocean bed.

Q24. He should grow leguminous plants like gram and peas. This is because their roots contain Rhizobium bacterial which can fix atmospheric nitrogen into a soluble form in the soil.

Q25. The blackish-brown, cotton-like stuff was Fungi (bread mould). It grow in moisture. the spores of fungus were circulating in the air. When they found favorable conditions they began to grow.