I. Multiple Choice Questions: [0.5 x 20 = 10]

1. Organisms which prepare food for themselves using simple naturally available raw materials are referred to as
(a) heterotrophs
(b) autotrophs
(c) parasites
(d) saprophytes
Answer: (b) autotrophs

2. In the process of photosynthesis, which of the following energy conversions occur?
(a) Solar energy is changed into chemical energy.
(b) Solar energy is changed into mechanical energy.
(c) Bioenergy is converted into chemical energy.
(d) Chemical energy is changed into light energy.

Answer: (a) Solar energy is changed into chemical energy.

3.The raw material used by plants during photosynthesis
(a) N2 and O2
(b) O2, H2 and CO2
(c) CO2 and water
(d) water and minerals
Answer: (c) CO2 and water

4. Insectivorous plant among the following is
(a) lichen
(b) Cuscuta
(c) pitcher plant
(d) bread mould

Answer: (c) pitcher plant

5. When we observe the lower surface of a leaf through a magnifying lens, we see numerous small openings. Which of the following is the term given to such openings
(a) Stomata
(b) Lamina
(c) Midrib
(d) Veins
Answer: (a) Stomata

6. In the process of photosynthesis, plants
(a) take O2 and release CO2
(b) take CO2 and release O2
(c) take and release O2
(d) take O2 and release water
Answer: (b) take CO2 and release O2

7. The ultimate source of food on earth is
(a) plants
(b) sunlight
(c) animals
(d) proteins
Answer: (a) plants

8. Fungi is a
(a) parasite
(b) autotroph
(c) saprotroph
(d) insectivore

Answer: (c) saprotroph

9. Parasites obtain their food from
(a) insects
(b) plants
(c) animals
(d) all of these

Answer: (d) all of these

10. Which part of plant is called food factory?
(a) Fruits
(b) Seeds
(c) Leaves
(d) Flowers

Answer: (c) Leaves

11. Which of the following is a nutrient?
(a) Fats
(b) Vitamins
(c) Proteins
(d) All of these

Answer: (d) All of these

12. The process by which green plants prepare their own food in the presence of sunlight is called
(a) saprophytic nutrition
(b) photosynthesis
(c) cellular nutrition
(d) nutrition

Answer: (b) photosynthesis

13. Ultimate source of energy is
(a) chemical energy
(b) wind energy

(c) solar energy
(d) water energy

Answer: (c) solar energy

14. Pitcher plant traps insects because it
(a) is a heterotroph
(b) grows in soils which lacks nitrogen
(c) does not have chlorophyll
(d) has a digestive system like human beings

Answer: (b) grows in soils which lacks nitrogen

15. Yeast, mushroom and bread-mould are
(a) autotrophic
(b) insectivorous
(c) saprophytic
(d) parasitic

Answer: (c) saprophytic

16. Plants take in carbon dioxide from the atmosphere generally through
(a) flowers
(b) stem
(c) root
(d) leaves

Answer: (d) leaves

17. Photosynthesis occurs only in
(a) green plants
(b) fungi
(c) all plants
(d) aquatic plants

Answer: (a) green plants

18. Opening and closing of stomata is controlled by
(a) nucleus
(b) accessory cells
(c) stoma
(d) guard cells

Answer: (d) guard cells

19. Traps the energy from sunlight.
(a) Stomata
(b) Guard cells
(c) Chlorophyll
(d) Xanthophylls

Answer: (c) Chlorophyll

20. The substance synthesised during photosynthesis is
(a) protein
(b) maltose
(c) fructose
(d) glucose

Answer: (d) glucose

II. Fill in the blanks: [0.5 x 5 = 2.5]

A. The food that is synthesised by plant is stored as _____.

Answer: Starch

B. _____ plants traps insect and feed on them.

Answer: Insectivorous

C. The organisms that provides nutrients to parasitic organisms are known as _____.

Answer: hosts

D. _____ derives nutrients from other organisms without benefiting them.

Answer: Parasites

E. Carbohydrates are the products of _____.

Answer: photosynthesis

III. Match the Following [0.5 x 10 = 5]

Column I	Column II	Answer
1. Parasite	(a) green pigment in leaves	
2. Autotrophs	(b) proteins, vitamins, fats, etc.	
3. Chlorophyll	(c) prepare their own food	
4. Stomata	(d) depends on host	
5. Nutrients	(e) tiny pores on leaves	
6. Heterotrophs	(f) food factory	

7. Leaves	(g) parasitic plant	
8. Saprotrophs	(h) Rhizobium	
9. Nitrogen fixation	(i) depends on other for food	
10. Dodder	(j) dead and decaying matters	

IV. Short Answer Questions? [1 x 11 = 11]

Q1. Name the bacteria that can fix atmospheric nitrogen.

Answer: Rhizobium is the bacterium which can fix atmospheric nitrogen.

Q2. Algae are green in colour. Why?

Answer: Algae contain chlorophyll which imparts green colour to them.

Q3. A unique feature in leaves allows them to prepare the food while other parts of plants cannot. Write the possible reason for this.

Answer: Leaves contain chlorophyll which is essential for food preparation and is absent in other parts of plant.

Q4. Algae and fungi form a unique association sharing benefits from each other. What is the name of association between them?

Answer: Lichens.

Q6. In a plant, photosynthesis occurs in a part other than leaf. Name that plant and the part where photosynthesis occurs.

Answer: Cactus, the part where photosynthesis occurs are stem and branches which are green.

Q7. Why insectivorous plants are called partial heterotrophs?

Answer: Insectivorous plants are autotrophs, i.e. they prepare their own food. They are partial heterotrophs as they eat insects for obtaining nitrogen.

Q8. Mosquitoes, bed bugs, lice and leeches suck our blood. Can they be called as parasites?

Answer: Yes, these animals/insects are parasites as they harm the hosts while they suck blood.

Q9. Plants are considered an essential part of earth as they keep a check on lot of process occurring all over. What would happen if all the green plants are wiped from earth?

Answer: Green plants are the source of energy for all the living organisms so that they can perform their normal functions. If all green plants and trees disappear, all the organism depending on them for food and shelter will also die.

The lack of gaseous exchange will lead to increase in amount of CO_2, causing death in humans and other animals also. The cycle of life will gradually disappear.

Q10. Nitrogen is an essential nutrient for plants growth. But farmers who cultivate pulses as crops like green gram, bengal gram, black gram, etc., do not apply nitrogenous fertilisers during cultivation.

The lack of gaseous exchange will lead to increase in amount of CO_2, causing death in humans and other animals also. The cycle of life will gradually disappear.

Q11. Water and minerals are absorbed by the roots and then transported to leaves. How?

Answer: Water and minerals are transported to the leaves by the vessels which run like pipes throughout the root, stem, branches and the leaves. These vessels are xylem and phloem, forming a continuous path or passage for the nutrients to make them reach the leaf.

V. Long Answer Questions. [3 x 4 = 12]

Q1. Distinguish between a parasite and a saprophyte.

Answer:

Saprophytes	Parasites
Acquire nutrients from dead and decaying matter.	Parasites live on or in a host and get their food at the expense of their host.
Example: Fungi	Example: Roundworm

Q2. What are stomata? Explain their function.

Answer: The tiny pores present on the underside of the leaf surface and surrounded by guard cells are called stomata.

The functions of stomata include,

Exchanging gases by the process called diffusion for photosynthesis and respiration.

Transpiration of water i.e. the loss of excess water from the plant by evaporation of water from the upper surface of the leaf.

Q3. Explain the saprotrophic mode of nutrition with an example.

Answer: Partial digestion of substrate outside the body and then absorbing the digested material into the body is called the saprotrophic mode of nutrition.

With the saprotrophic mode of nutrition, the body releases digestive enzymes to the substrate which causes the partial breakdown of the substrate which later on gets absorbed by the body.

Q4. What is symbiosis? Explain with help of an example.

Answer: Symbiosis is a relationship that exists between two organisms living in a close physical association which is mutually beneficial for both.

1. In this relationship, both organisms are equally benefited and no organism is affected by this relationship. These interactions last for a long term with the survival of both species.
2. Examples of organisms that follow symbiosis include lichen, mycorrhiza, etc.