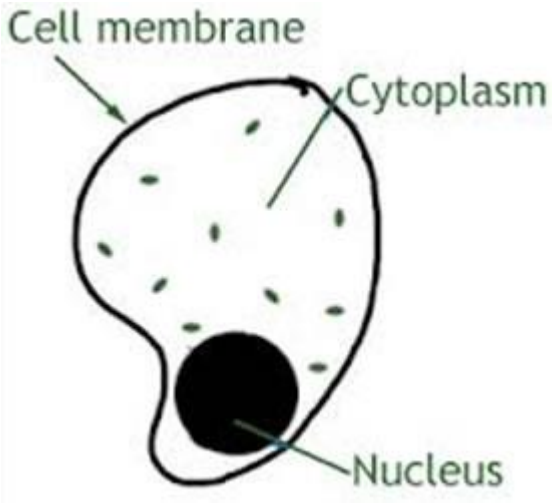
SHORT ANSWER QUESTIONS:

1. Differentiate between nutrients and nutrition.
   Carbohydrates, proteins, fats, vitamins and minerals are essential components of food, these components are called nutrients, but Nutrition is the mode of taking food by an organism and its utilisation by the body.

2. Differentiate between autotrophs and heterotrophs.
   Green plants are called autotrophs as they prepare their own food from simple substances, but animals and most other organisms are called heterotrophs as they take in ready-made food prepared by the plants

3. Explain the food factory of plants.
   Leaves are called food factory of plants, as the synthesis of food takes place in leaves of plants. Water and minerals present in soil are absorbed by roots and transported to leaves via stem. Carbon dioxide from air is taken in through tiny pores on surface of leaves called stomata.

4. Draw a labelled diagram of cell showing nucleus and cytoplasm.



5. How water and minerals are transported to leaves from roots?
   There are vessels inside a plant which run like pipes throughout the root, stem branches and leaves, by going through these vessels water and minerals are transported to leaves from roots

6. Explain the role of chlorophyll in the process of photosynthesis.
   Chlorophyll is the green colour pigment which helps leaves to capture energy from sunlight to carry out the food making process of plants by the leaves. It is the green photosynthesis pigment which provides energy necessary for photosynthesis.

7. Define photosynthesis along with the equation for the same.
   Photosynthesis is the food manufacturing process of green plants containing chlorophyll, in presence of sunlight, with the help of carbon dioxide and water to synthesise carbohydrates. The equation for the process is as follow:
   Carbon dioxide + water ——————> carbohydrate + Oxygen

8. What is the function of stomata in leaf of a plant?
   Stomata are the tiny pores present on the surface of leaves which helps in exchange of gases, the pores in stomata are surrounded by guard cells.

9. How humans and animals are directly or indirectly dependent on plants?
   All living organisms require food. Plants can make their food themselves by organic substances but animals including humans cannot make their food themselves. They get it from plants or animals that eat plants. Thus, humans and animals are directly or indirectly dependent on plants.

10. Why colours of algae are green?

Algae contain chlorophyll which gives them green colour and because of chlorophyll it can also prepare their own food by photosynthesis.

11. From where do the plants obtain nitrogen?

Soil has certain bacteria that convert gaseous nitrogen into a usable form and release it into the soil. These soluble forms are absorbed by the plants along with water. By adding fertilizers rich in nitrogen to the soil farmers also made nitrogen available for plants.

12. What is saprotrophic mode of nutrition?

This mode of nutrition in which organisms take in nutrients in solution form from dead and decaying matter is called saprotrophic nutrition. Plants which use saprotrophic mode of nutrition are called saprotrophs. Example Fungi that secrete digestive juices on the dead and decaying matter and convert it into a solution. Then they absorb the nutrients from it.

13. Sun is called the ultimate source of energy for all living organisms. Comments.

The solar energy is very important to carry out the process of photosynthesis, it is captured by the leaves and stored in the plant in the form of food. And this in turn use by other organism to get food to obtain energy Thus, we say that sun is the ultimate source of energy for all living organisms.

14. 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. **Green plants**

(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. **mushroom**

15. How are nutrients replenished in the soil?
    a. Spreading manure or fertilizers in the fields (Fertilizers and manures contain plant nutrients such as nitrogen, potassium, phosphorous, etc.)These nutrients need to be added from time to time to enrich the soil.
    b. Growing leguminous plant (that can fix atmospheric nitrogen with the help of rhizobium bacteria).
    c. Mixed cropping,
    d. Crop rotation,
    e. Field fellow
    f. Making compost,
    g. Vermicomposting**.**

16. Draw the diagram of stomata and label the parts.