Doon Public School Bhuj

This is your home assignment which you have to complete in your science notebook. Write both the chapters neatly in the notebook and learn the same. I wish you to have a great time with your family during vacation. Take care and stay safe.

UT-1

Ch-1 **Holiday Homework** **Date-08/05/2020**

Nutrition in Plants

Answer in detail-

Q1. Describe the process of photosynthesis. Also give its equation.

Ans1. The process by which green plants prepare their food is called photosynthesis (photo-light, synthesis-to combine). During this process, plants absorb the sun's light through their leaves and convert it into food energy, using raw materials from the atmosphere and soil.

- Water is taken from the roots of the plant, and it is transported to leaves of the plant.
- Carbon dioxide from air enters the leaves through pores called stomata. This diffuses the cell containing chlorophyll.
- Water molecule is broken down into Hydrogen and Oxygen with the help of sunlight.
- Hydrogen combines with Oxygen and Hydrogen to form carbohydrates.
- Photosynthesis is represented by the following equation.

$$6CO_2 + 6H_2O \xrightarrow{\text{sunlight}} C_6H_{12}O_6 + 6O_2$$

(Carbon dioxide) (water) (carbohydrate) (oxygen)

Q2. Describe how non green plants obtain their food.

Ans2. The non green plants depend on the food prepared by other plants. This is called heterotrophic mode of nutrition. These are of four types-

1. **Parasitic Plants**- The non green plants which live on other living organisms and obtain their food from them are called parasitic plants. The living organisms from which a parasite derives its food is called host. For example-Cuscuta (amarbel)

2**. Saprophytic Plants**- The plants which live and feed on dead and decaying organic matter are called saprophytic plants. For example- mushroom, moulds and yeast

3**. Insectivorous Plants-** plants which eat insects are called insectivorous plants. For example-Pitcher plant, Venus flytrap

4. **Symbiotic Plants**-plants which live in association with other plants and share shelter and nutrients are called symbiotic plants. For example-Lichen

Q3. How does a pitcher plant catch insects?

Ans3. In pitcher plant, the pitcher like structure is the modified part of the leaf. The leaf tip is modified to form a lid which can open and close the mouth of the pitcher. Inside the pitcher, downward-pointing hair are present. Once an insect enters the pitcher, the lid closes and the insect gets trapped in the hair. Digestive juices secreted in the pitcher now digest the insect.

Q4. Give differences between the following:

1. Parasites and saprophytes **2. Autotrophs and heterotrophs**

Ans4.

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

Autotrophs	Heterotrophs
They can prepare their own food	They cannot prepare their own food.
They take in simple inorganic substances and change it into complex organic food,e.g green plants	They take in complex food and breakdown it into simple compounds, e.g all animals, fungi

<u>Answer Briefly-</u>

Q1. Why do we need food?

Ans1. Food is needed to perform basic life processes.

Q2. Mention: a. the role of chlorophyll in photosynthesis and

b. the part of plant in which food is made.

Ans2. (a) Chlorophyll is the green pigment , it helps leaves to capture the sun's energy which is used to prepare food from carbon dioxide and water.

(b) Synthesis of food takes place in leaves.

Q3. How would you test for the presence of starch in leaves?

Ans3. By using iodine solution, we can test the presence of starch in leaves.

Q4. What is produced as a result of photosynthesis?

Ans4. Carbohydrate and oxygen are produced as a result of photosynthesis.

Q5. What will happen to the life on earth in the absence of photosynthesis?

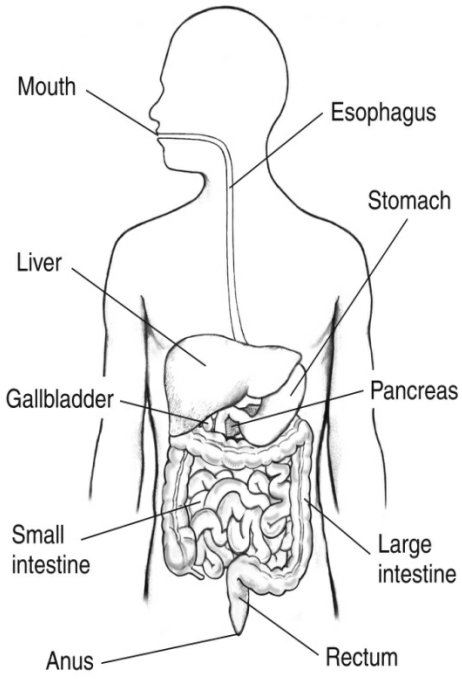
Ans5. Since by- product of photosynthesis is oxygen. This gas is essential for the survival of all living organisms, so life is not possible on the earth in the absence of photosynthesis.

Ch-2 **Holiday Homework** **Date-08/05/2020**

Nutrition in Animals

Answer in Detail-

Q1. Draw a labelled diagram of the human digestive system.



Q2. Mention the functions of each of the following-

a. Saliva b. Tongue c. Pancreas d. Livere. Pseudopodia

Ans2. **(a) Saliva**- It is the watery substance that is present in the mouth. It is secreted by three pair of salivary glands. The juices present in saliva help in chemical digestion of starch into sugars.

(b) Tongue- It helps in mixing the chewed food with saliva, swallowing food and it also helps to detect tastes of food, with the help of taste buds.

(c) Pancreas-This gland is cream coloured and located just below the stomach. The pancreatic juice acts on proteins, starch and fats and changes them into simpler forms.

(d) Liver-It secretes bile juice which helps in the digestion of fats.

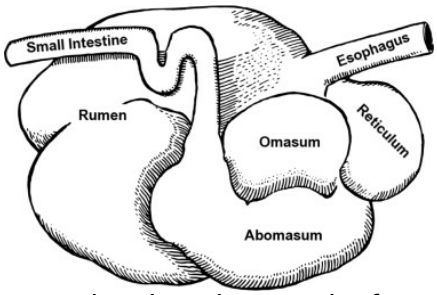
(e) Pseudopodia-It is finger like projections present in amoeba, which help in movement and capturing food.

Q3. How does digestion takes place in ruminants? Explain with the help of a diagram.

Ans3. In ruminants, stomach has four chambers-rumen, reticulum, omasum and abomasum.

The first chamber of a ruminant stomach is the rumen. It is the largest chamber. The food is stored here and digestion of cellulose also takes place. From the rumen, the food enters the second chamber called reticulum. In these two chambers, the food is partially digested and converted into soft pulp called the cud. The pulpy food is brought back to the mouth. After

chewing, the food from the mouth is pushed into omasum. It is the smallest chamber. From here the food enters the fourth chamber called the abomasum. This is true stomach. Digestive juice is secreted here to help in the process of digestion. From the fourth chamber; the food enters the small intestine. Absorption of nutrients occur here.



Four chambered stomach of a ruminant

Q4. How is digestion different in humans from that of ruminants?

Digestion in Humans vs Digestion in Ruminants	
1. Digestion in humans is the process which involves the breakdown of both plant and animal matter into absorbable forms.	1. Digestion in ruminants is the process which involves only the digestion of plant matter.
2. The human digestive system has a single stomach.	2. Ruminants have a complex stomach with four different chambers.
3. Humans do not digest cellulose.	Ruminants can digest cellulose.

Q5. Give the difference between the following-

1. Alimentary canal and digestive system

2. Food canal and food pipe

Ans 5. (1) The alimentary canal forms one part of the digestive system, and it is the long tubular canal that runs from mouth to anus. But, on the other hand, the digestive system is the complete organ system including the alimentary canal and and associated glands that carries out digestion in heterotrophs.

(2) Food canal is also called alimentary canal, pathway by which food enters the body and solid wastes are excreted. The alimentary canal includes the mouth, pharynx, esophagus, stomach, small intestine, large intestine and anus.

Food pipe is also known as oesophagus. The oesophagus is the tube that carries swallowed food from mouth to stomach. It runs along the neck and the chest.

Answer briefly-

Q1. What is bile? Where is it produced? Give its functions.

Ans1. Bile is a liquid secreted in liver. It helps in digestion of fats.

Q2. List various steps in the process of nutrition.

Ans2. Steps in the process of nutrition are-

Ingestion → digestion → absorption → assimilation → egestion

Q3. Name the four different types of teeth found in humans and give their function.

Ans3. Types of teeth	Function
1. Incisors	cutting and biting food
2. Canines	piercing and tearing food
3. Premolars	chewing and grinding food
4. Molars	chewing and grinding food

Q4. What are villi? What is their location and function?

Ans4. The inner wall of small intestine has a number of finger-like outgrowths called villi. The villi increase the surface area for absorption of the digested food.

Q5. What are the two roles performed by the small intestine in humans?

Ans5. (1)Digestion of all type of food is carried out and completed.

(2) Absorption of digested food.

Q6. Where does digestion start in humans?

Ans6. Digestion starts in the mouth.

Q7. Which part of the alimentary canal is involved in

(a) Ingestion of food - mouth

(b) Chewing of food- mouth (teeth and tongue)

(c) Pushing down of food- oesophagus

(d) Killing of bacteria- stomach

(e) Complete digestion of food- small intestine

(f) Absorption of digested food- small intestine

(g) Absorption of water- large intestine

(h) Storage of undigested waste food- rectum

Textbook work

Ch1 Nutrition in Plants

C1. Name the following-

1. Heterotrophic nutrition

2. Cuscuta

3. Stomata

4. Insectivorous plant

5. Oxygen

C2. Fill in the blanks-

1. Starch

2. Iodine

3. Other plants and animals

4. cuscuta

5. Chlorophyll

6. Saprophytes

7. carbon-dioxide, oxygen

C3. Match the following

1(iv) 2(iii) 3(v) 4(ii) 5(i)

C4. Multiple choice questions

1. (c) Leaves

2. (c) Mushroom

3. (d) sunlight, chlorophyll, water and carbon dioxide

4. (b) Lichen

5. (a) Guard cells

Ch2 Nutrition in animals

C1. Fill in the blanks-

1. Holozoic
2. Digestion
3. Mechanical
4. proteins
5. small
6. bile juice
7. pseudopodia
8. four

C2. True or False

1. False
2. False
3. True
4. False
5. True
6. False
7. True
8. True

C3 Match the following

1(iii) 2(i) 3(ii) 4(vi) 5(iv) 6(v) 7(viii) 8(vii)

C4. Multiple choice questions

1. (b) butterfly
2. (c) omnivores
3. (c) 32
4. (a) mouth
5. (b) small intestine
6. (c) Small intestine
7. (a) starch
8. (a) cellulose