Chapter 1
Nutrition in Plants

ASSIGNMENT FOR SA AND FA

1. Match the following:
   1. Tapeworm  
      2. Autotrophs  
      3. Cuscuta  
      4. Lichen  
      5. NPK  
      parasite  
      symbiotic  
      internal parasite  
      compound fertilizer  
      producers

2. Multiple choice questions:
   1. In a pitcher plant, ____________ is modified into pitcher.
      (a) leaf  (b) stem  (c) fruit  (d) flower
   2. Which of the following groups is necessary for a plant to survive?
      (a) roots, leaves and stem  (b) food, water and air
      (c) light, soil and nutrients  (d) fruits, flowers and leaves
   3. Where do plants get carbon dioxide from?
      (a) soil  (b) sand  (c) leaves  (d) air
   4. Lichens are:
      (a) carnivorous plants  (b) interdependent algae
      (c) autotrophs  (d) symbiotic algae and fungi
   5. Water is absorbed by the ____________ of a plant.
      (a) leaves  (b) stem  (c) root  (d) none

3. Very short answer questions:
   1. Slimy, green patches in ponds and stagnant water are ____________.
   2. Plants excrete gases through ____________.
   3. Cuscuta lives as a parasite on ____________.
   4. Leguminous plants have their roots modified into nodulated roots. True or false?
   5. The organisms that obtain food from other sources instead of preparing their own.
      ____________.
   6. The bacteria present in root nodules of leguminous plants that fixes atmospheric nitrogen.
      ____________.

4. Short answer questions:
   1. What is the function of nodulated roots?
   2. What are parasites? Name some parasitic plants.
   3. What is the main function of veins present in leaves?
   4. How does a mushroom plant get its food?
   5. What is the main function of chlorophyll?
5. **Long answer questions:**
   1. Explain heterotrophs in your own words.
   2. Describe an activity to show that CO₂ is necessary for photosynthesis.
   3. How are water and minerals used by plants?
   4. Explain the importance of nutrients for plants, other than carbohydrates.
   5. Lichens are composite organisms. How?
   6. Write a short note on replenishment of nutrients in soil.

6. **HOTS questions (Higher Order Thinking Skills):**
   1. What would happen if the leaves did not possess chlorophyll?
   2. A potato plant produces seeds but a new potato plant does not grow from seeds. Why?

**ASSIGNMENT FOR FA**

**A. Classroom activities**
1. You have used iodine to test the presence of starch in leaves in your previous class. Similarly, you can also use it for testing starch in several other food items.
   Bring the following food items to the classroom and perform the iodine test.
   (i) Boiled egg
   (ii) Boiled potato
   (iii) Boiled rice
   (iv) Cooked pulses
   Now put 2-3 drops of iodine solution one by one on each of these items. Observe carefully which of these food items shows blue-black colour on pouring iodine solution. If any food item does not show colour change on pouring iodine, what does this indicate?
2. Collect pictures of several heterotrophic plants and bring them to the classroom. Take a chart paper and paste these pictures on it. Also, write a brief note with each picture. The information can be taken from books, encyclopedias, internet, etc.

**B. Conversation activities**
1. Organize a group discussion in your class. Make groups of 5-6 students each. Select a topic from the given list and discuss.
   (i) Nutrients are continuously absorbed by plants from the soil. How does the soil replenish the lost nutrients?
   (ii) What role does nitrogen play in the growth of crops?
   (iii) Cooking of food can also be called as a kind of autotrophic nutrition. How is it different from the autotrophic nutrition in plants?
2. Some green plants like venus flytrap and pitcher plant can also carry out photosynthesis. Still, they are called heterotrophic. Why? Discuss with your classmates.

**C. Exploration activities**
1. Visit a nearby crop field where you can see legume crops growing. Ask the farmer to let you pull out a plant. Observe the nodules on the roots. The rhizobium bacteria live in these nodules. How do they help the legume plants while living inside the nodules? Explore.
2. Food chains are an important part of our environment. Try to explore at least five food chains from your surrounding places, like a pond, crop field, sea, grassland, garden, etc.

D. **Experiments/Projects**
1. A Dutch scientist, Jan Ingenhousz discovered that plants take in carbon dioxide and release oxygen in the presence of sunlight. Find out more about his discoveries, contributions and findings, and make a project on it.
2. Make a model showing the process of photosynthesis. Demonstrate the chemical reaction that undergoes during this process.

E. **Crossword**

Solve the following crossword with the help of the clues given below:

**Across:**
2. Feed on dead and decayed organic matter.
3. Parasite live on it.
4. Used for starch test.

**Down:**
5. Make their own food.
6. Organism that cannot prepare their own food.
7. Bacteria that fixes nitrogen.
8. Shows symbiosis.
Chapter 2

Nutrition in Animals

ASSIGNMENT FOR SA AND FA

1. Match the following:
   1. Amoeba
   2. Camel
   3. Nectar
   4. Abomasum
   5. Proteins
      proboscis
      true stomach
      intracellular digestion
      amino acids
      ruminant

2. Multiple choice questions:
   1. The cavity present in the tooth is called ____________ cavity.
      (a) nasal
      (b) chest
      (c) abdominal
      (d) none of these
   2. The food is obtained by amoeba through:
      (a) tongue
      (b) proboscis
      (c) pseudopodia
      (d) cilia
   3. Name the process of breaking down of food by chewing:
      (a) mastication
      (b) assimilation
      (c) digestion
      (d) salivation
   4. Which organ carries digested food in the body?
      (a) Heart
      (b) Water
      (c) Blood
      (d) Lungs
   5. The inner layer of the stomach releases:
      (a) digestive juices
      (b) blood
      (c) water
      (d) minerals
   6. Where do we find taste buds in humans?
      (a) Tongue
      (b) Palate
      (c) Mucous lining
      (d) None of these
   7. Stomach secretes:
      (a) dilute sulphuric acid
      (b) dilute nitric acid
      (c) dilute hydrochloric acid
      (d) none of these

3. Very short answer questions:
   1. Organism that traps food with the help of cilia _________________
   2. _________________ are used for tearing food.
   3. Milk teeth start falling at the age of 10. True or false?
   4. The organ where water is mainly absorbed _________________
   5. Stomach wall produces acid. Do you agree?
   6. Digestion starts in the mouth. Is it true?
   7. The organisms that do not have a backbone _________________

4. Short answer questions:
   1. Which gland is associated with the digestive system of man?
   2. Why can’t we digest roughage?
   3. What is the difference between liver and pancreas in terms of digestion in humans?
4. Give at least one important function of the following:
   (a) salivary amylase  (b) molars and premolars
5. What happens to the food after it reaches the small intestine?
6. Name the type of permanent teeth found in our mouth along with the number of each.

5. **Long answer questions:**
   1. Explain the steps of nutrition in amoeba.
   2. Describe the process of absorption in holozoic mode of nutrition.
   3. How does our tongue help us in digestion?
   4. What are the enzymes present in the pancreatic juice? Also write down their action.
   5. Draw a well labelled diagram of:
      (a) human digestive system  (b) digestive system of a ruminant

6. **HOTS questions (Higher Order Thinking Skills):**
   1. Why do only female mosquitoes bite and suck blood?
   2. The stomach wall is not digested by its own enzymes. Why?

**ASSIGNMENT FOR FA**

**A. Classroom activities**
1. Ruminant is an animal that regurgitates its food and digests it in steps. For example, cow, buffalo, goat, sheep, camel, etc., are some ruminants. Bring the pictures of digestive system of these animals and of humans. Make groups of 5-6 students each and compare the digestive systems of ruminants and humans.
2. Humans have two sets of teeth – temporary teeth (milk teeth) and permanent teeth. Make a list of at least 15 students of yours as well as other classes in your notebook. Ask these students the age in which their first and last milk teeth fell/shed. Note the age in your notebook and observe the pattern. What is the average age of shedding of milk teeth that you get from this survey? When did your milk teeth fall?

**B. Conversation activity**
Constipation is a condition in which an individual has fewer than normal bowel movement. The stool is generally hard, dry, small and difficult to pass. Discuss with your classmates about its causes and prevention methods.

**C. Exploration activities**
1. Liver is a digestive gland of our digestive system. It secretes bile that gets stored in a small sac-like structure called gall bladder. Sometimes, a disease called gall stones occurs in the gall bladder. Explore the causes, symptoms and treatment of this disease.
2. Sometimes, eating stale and unhygienic food leads to food poisoning in our digestive system. Find out the treatment and preventive methods to avoid this condition.

**D. Experiments/Projects**
1. Take a chart paper and draw a neat and colourful digestive system of humans. Label its various organs.
2. Collect information about animals having different modes of procuring food. For example, butterfly, frog, hydra, paramecium, amoeba, bird, etc. Take a scrapbook and draw the process of ingestion in these animals. Write the uniqueness of the ingestion process in each organism.
ASSIGNMENT FOR SA AND FA

1. Match the following:
   1. Finest wool  
   2. Greasy wool  
   3. Silkworm caterpillars  
   4. Multifaceted utility  
   5. Strong shiny fibre  
       mulberry leaves  
       sheep farming  
       silk  
       merino sheep  
       lanolin

2. Multiple choice questions:
   1. Which of the following is the most appropriate function of hair in animals?
      (a) To keep body cool  
      (b) To trap air  
      (c) To give beauty  
      (d) To protect internal organs
   2. Which of the following completes the missing step in given process?
      Shearing → ( ) → Sorting
      (a) Weaving  
      (b) Knitting  
      (c) Separating  
      (d) Scouring
   3. ____________ shawls are woven from fur of cashmere goat.
      (a) Pashmina  
      (b) Simia  
      (c) Parsi  
      (d) none of these
   4. Which of the following is present in silk fibre?
      (a) Fats  
      (b) Proteins  
      (c) Carbohydrates  
      (d) All of them
   5. Sheep are usually kept indoors and fed on dry fodders and leaves, etc., during ________ season.
      (a) summer  
      (b) rainy  
      (c) autumn  
      (d) winter

3. Very short answer questions:
   1. Sheep require extremely sophisticated shelters. True or false?
   2. ____________ burns slowly and melts.
   3. Silkworms are killed before they reach moth stage for obtaining silk fibre. Do you agree?
   4. Sheep help in weed removal. Is it true?
   5. Bends in the wool fibre ____________
   6. Killing silkworms with heat ____________
   7. Person who removes sheep wool ____________
4. Short answer questions:
   1. What is anthrax and whom does it infect the most?
   2. Write one characteristic property each of cotton, silk and wool fibres.
   3. How does length determine the quality of wool?
   4. Why is underhair of sheep preferred for obtaining wool?
   5. Comment on wool fibre obtained from camels.

5. Long answer questions:
   1. Write a short note on sheep farming.
   2. Why is cleaning grease from fleece of sheep necessary?
   3. What are the various types of silk usually found? Describe.

6. HOTS questions (Higher Order Thinking Skills):
   1. Name some insects that have similar stages in their life cycle to a silkmoth.
   2. What are the differences between fur and hair in animals?
   3. Clothing is a necessity for humans, for protective as well as aesthetic reasons. Explain.

ASSIGNMENT FOR FA

A. Classroom activity
   Let students of your class be divided into groups and each group should collect more
   information on any one of the following topics. With collective efforts, each group should
   prepare a collage, poster or chart on its selected topic to display in the classroom.

   Topics:
   (i) Sheep farming
   (ii) Selective breeding
   (iii) Sericulture
   (iv) Ahimsa silk

B. Exploration activity
   Wool and silk come in many varieties. Through internet and by talking to your elders, find out
   these varieties, their characteristics, sources and processes of final produce.

   Also explore their various uses.

C. Experiments/Projects
   1. Prepare a write-up on the advent of clothing from pre-historic era till date. Paste relevant
      pictures and present it in a story form. You may even imagine few stages. Do it in your
      scrapbook.
   2. Talk to an elderly lady to find out how they knit the wool into beautiful sweaters, mufflers,
      gloves, scarves, etc.
      Try to do it yourself also.