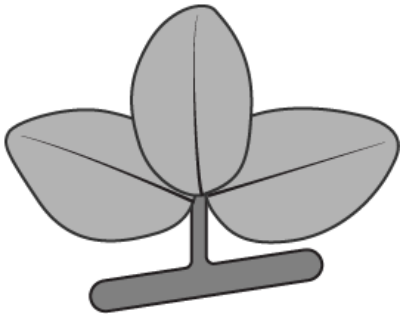
INDIAN SCHOOL AL WADI AL KABIR

Class: VI	**DEPARTMENT: SCIENCE** **2023-2024**	**DATE: 27.08.23**
WORKSHEET NO: 6 **WITH ANSWERS**	**TOPIC:** **GETTING TO KNOW PLANTS**	**NOTE: A4 FILE FORMAT**
NAME OF THE STUDENT:	**CLASS & SEC:**	**ROLL NO.**

I. OBJECTIVE TYPE QUESTIONS:

1. A student observed some leaves that were attached to a stem, as shown in the image.

   Which part of the leaf helps them to become attached to the stem?



   a) Lamina b) Midrib

   c) Petiole d) Veins

2. Which of the following type of plants have thick, hard and woody stem?

   a) Trees b) Herbs

   c) Shrubs d) All of these

3. Which is the correct set of parts of pistil?

   a) Ovary, Style, Filament **b) Ovary, style, stigma**

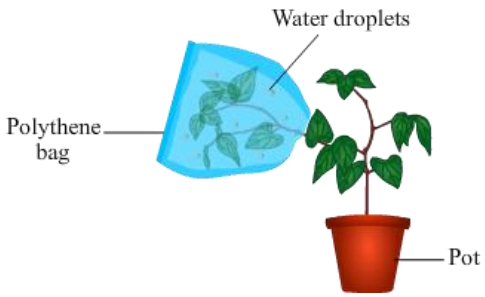
   c) Ovary, anther, filament d) Filament, anther

4. If a plant has fibrous root, what type of venation are its leaves likely to have-

   a) Reticulate venation **b) Parallel venation**

c) No such relation can be observed d) Reticulate and parallel

5. A student took a healthy, well-watered plant and enclosed a leafy branch of it in a polythene bag. After a few hours, the student observed some water drops on the inner side of the polythene bag. What likely can be concluded from this activity?



a) Leaves help in transpiration. b) Leaves help in respiration.

c) Leaves help in photosynthesis. d) Leaves help in the transportation of food.

6. The leaves of plants help it to make food by the process of photosynthesis. Plants perform photosynthesis in the presence of sunlight and chlorophyll. What other components are needed by the plants to undergo photosynthesis?

a) Oxygen and water b) Carbon dioxide and oxygen

c) Oxygen and nitrogen d) **Carbon dioxide and water**

For the questions that follows, two statements are given- one labelled Assertion (A) and the other labelled Reason (R). Select the correct answer to these questions from the codes (i), (ii), (iii) and (iv) as given below:

i) Both A and R are true and R is correct explanation of the assertion.

ii) Both A and R are true but R is not the correct explanation of the assertion.

iii) A is true but R is false.

iv) A is false but R is true.

7. **Assertion (A)** - The stem conducts water from roots to leaves and food from leaves to other parts of the plant.

Reason (R) - The stem bears leaves, flowers and fruits.

ii) Both A and R are true but R is not the correct explanation of the assertion.

8. **Assertion (A)** - Plants help in maintaining moisture conditions in the environment.

Reason (R) - Plants release a lot of water into the air through the process of transpiration.

i) Both A and R are true and R is correct explanation of the assertion.

9. **Assertion (A)** - The parts of a typical flower are sepals and petals only.

Reason (R) - The parts of stamen are filament and anther.

iv) A is false but R is true.

10. **Assertion (A)** - Leaves are generally green in colour.

Reason (R) - Leaves are green in colour due to the presence of chlorophyll.

i) Both A and R are true and R is correct explanation of the assertion.

II. VERY SHORT ANSWER TYPE QUESTIONS (2M):

1. What are lateral roots?

[Hint: The smaller roots that grow on the main tap root are called lateral roots.]

2. What is transpiration?

[Hint: Transpiration is the loss of water from the aerial parts of the plant in the form of vapour.]

3. Why are leaves generally green?

[Hint: The green colour of leaves is because of the presence of chlorophyll.]

4. What are shrubs?

[Hint: Shrubs are medium-sized plants with a hard stem branching out near the base.]

5. Write the functions of sepals and petals.

[Hint: Functions of sepals: Sepals protect the inner parts of flower when it is a bud. Function of petals: Petals attract the insects which are the agents of pollination by colour and fragrance.]

6. Name the reproductive part of a plant. What are the specialised reproductive parts in it?

[Hint: Flower is the reproductive part of a plant. Stamen is the male reproductive part of the flower. Pistil is the female reproductive part of the flower.]

7. Define the following –

i) Petiole - **The stalk of a leaf by which it is attached to the stem is called petiole.**

ii) Lamina - **The broad green flat part of a leaf is called lamina.**

iii) Leaf venation - **The design made by veins in a leaf is called leaf venation.**

8. Rohit tries to pull out a grass and a rose plant from the soil. Which one will he be able to pull

out more easily and why?

[Hint: He will be able to pull out grass more easily as compared to rose plant because fibrous roots are found in grass which does not go down much deep in soil.]

III. SHORT ANSWER TYPE QUESTIONS (3M):

1. How do you identify the root system of a plant without pulling it out of soil?

   [Hint: By looking at the venation of the leaves, we can identify the root system of plants. Plants with leaves having parallel venation have fibrous root and leaves having reticulate venation have taproot.]

2. What are the main functions of roots?

   [Hint: i) Roots absorb water and minerals from the soil.
   ii) Roots help in holding the plant firmly in the soil.]

3. Transpiration amounts to loss of water in plants. Yet, it is a useful process, both for the plant and the environment. Justify.

   [Hint: The loss of water in the form of water vapour from the plant cools down the plant when the weather is
   hot and helps the plant to absorb water and minerals from the soil. Transpiration is very important for maintaining moisture conditions in the environment. 10 percent of the moisture in the Earth's atmosphere is from transpiration of water by plants.]

4. Will a leaf taken from a potted plant kept in a dark room for a few days turn blue-black when tested for starch? Give reasons for your answer.

   [Hint: No, it will not turn blue-black because all the starch present in the leaf would have been used up by the plant. And due to the non-availability of sunlight, no starch would be synthesised in the leaves.]

5. Do you think that the creeping habit in a pumpkin is desirable? Why?

   [Hint: The creeping habit in pumpkin is desirable. Because of weak stem and huge fruit, it is not possible for pumpkin to grow on trees. The big fruit cannot be supported when it climbs. Therefore, pumpkin is always a creeper and it is desirable for better growth of the fruit.]

6. What are the functions of flower?

   [Hint: It is used for reproduction and results in the formation of fruits and seeds. Seeds on germination give rise to new plants.

It is the source of food for many insects.

Flowering plants are grown in gardens and in homes because of the bright colour and fragrance of the flowers. Therefore, they beautify the surroundings and provide aesthetic value.]

7. Differentiate between Parallel and reticulate venation.

[Hint:

PARALLEL VENATION	RETICULATE VENATION
Veins run parallel to each other from the petiole to the tip of the leaf.	**Main vein runs through the center giving rise to several smaller veins.**
Examples- Banana, Grass	**Examples- Peepal,Mango**

IV. LONG ANSWER TYPE QUESTIONS (5M):

1. Can the stem of a plant be compared with a street with two-way traffic? Give reason.

[Hint: Yes, the stem of a plant can be compared with a street with two-way traffic. It is because in the stem, water and mineral move in an upward direction and food moves in a downward direction. The stem transports water and minerals from the root to leaves and other parts of the plant (upward).The food prepared by the leaves travels through the stem to different parts of plant and roots (downward).]

2. Boojho wanted to test the presence of starch in leaves. He performed the following steps.

(i) He took a leaf and boiled it in water.

(ii) He placed the leaf in a petri dish and poured some iodine over it. He did not get the expected result. Which step did he miss? Explain.

[Hint: After boiling the leaf in water, it has to be boiled in alcohol so that chlorophyll is removed and the green colour of the leaf comes out. Boojho did not boil the leaf in alcohol to remove the chlorophyll and therefore, he did not get the expected result (i.e. change in colour of the leaf).]

3. Do all flowers have the same parts and are they arranged in the same way?

[Hint: The flowers of different species of plants are different. The number of petals and sepals are different in different flowers. Some of the flowers have stamens and some flowers have only pistil, others have both. Sepals may be connected with petals in some

cases; but in other cases, these may be separated. Thus, the properties of flowers are different.]

4. Observe the picture of an activity given in the picture carried out with leaves of plants and polythene bag. Answer the following.

a) Which process is demonstrated in the activity?

[Hint: The process of transpiration is being demonstrated in the given activity.]

b) When will this activity show better results on a bright sunny day or a cloudy day?

[Hint: The activity will show better results on a bright sunny day because the rate of transpiration increases in the presence of sunlight.]

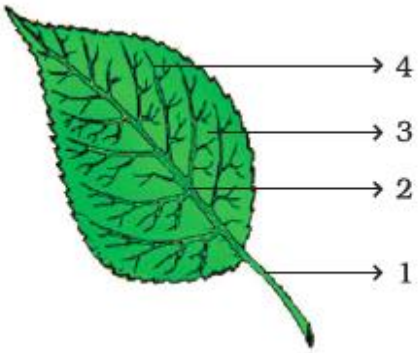
c) What will you observe in the polythene bag after a few hours of setting up the activity?

[Hint: After a few hours, small drops of water will be seen inside the polythene bag.]

d) Mention any one precaution you must take during this activity.

[Hint: (i) The set-up must be airtight. (ii) Polythene bag must be dry. (iii) The twig must be fresh with 10-12 leaves.]

5. Observe Figure and attempt the questions that follow it.



a) Label the parts 1, 2, 3 and 4 in the diagram.

[Hint: Part 1 – Petiole, Part 2 – Midrib, Part 3 – Lamina, Part 4 – Veins]

b) What type of venation does the leaf have?

[Hint: The leaf has reticulate venation. In reticulate venation, veins form a network like appearance.]

c) What type of venation is seen in grass leaves?

[Hint: In grass leaves, parallel venation is seen.]

V. SOURCE-BASED/CASE STUDY BASED QUESTIONS:

Read the following passage and answer the questions.

1. Take a white flower with a part of its stem. In a glass of water, add a few drops of red ink. Put the flower with its stem in the glass undisturbed for 12 hours. You will see that the white flower is not white anymore.

a) What will be the colour of the flower after 12 hours?

i. Half red and half blue

ii. Red

iii. Blue

iv. No change

b) What is the conclusion of the experiment?

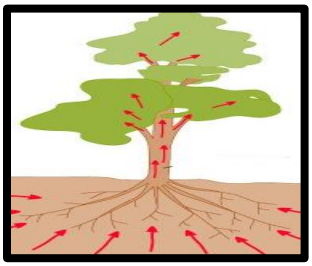
i. Stem conducts water.

ii. Root carries water.

iii. Leaf produces food.

iv. Leaf stores food.

2. Which of the following substances are transported by the arrows shown in the given plant?



i) Water ii) Carbon dioxide iii) Mineral salts

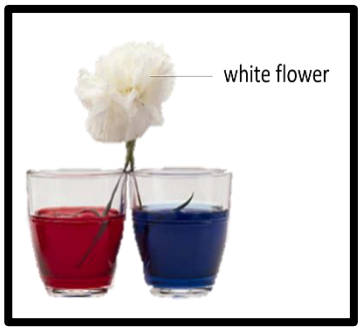
a. (i)

b. (i) & (ii)

c. (i) & (iii)

d. (ii) & (iii)

3. Paheli splits the stem halfway along its length and drops the two ends in the water in glasses A and B as shown in the picture. She put a few drops of red ink in glass A and blue ink in glass B and left the setup undisturbed for 8 hours. She wants to know what would be the colour of the flower?



a. No change b. Red

c. Blue **d. Half red and half blue.**

4. Rima kept some soaked gram seeds for sprouting. But she forgot about this. On fifth day she suddenly remembered and opened the container having seeds. She found that small leaves along with white sprouts have grown out of the seed.

a) What does the white structure of sprout give rise to?

[Hint: White structure of the sprout give rise to root of the plant.]

b) What kind of root is found in gram plant?

[Hint: Taproot.]

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