

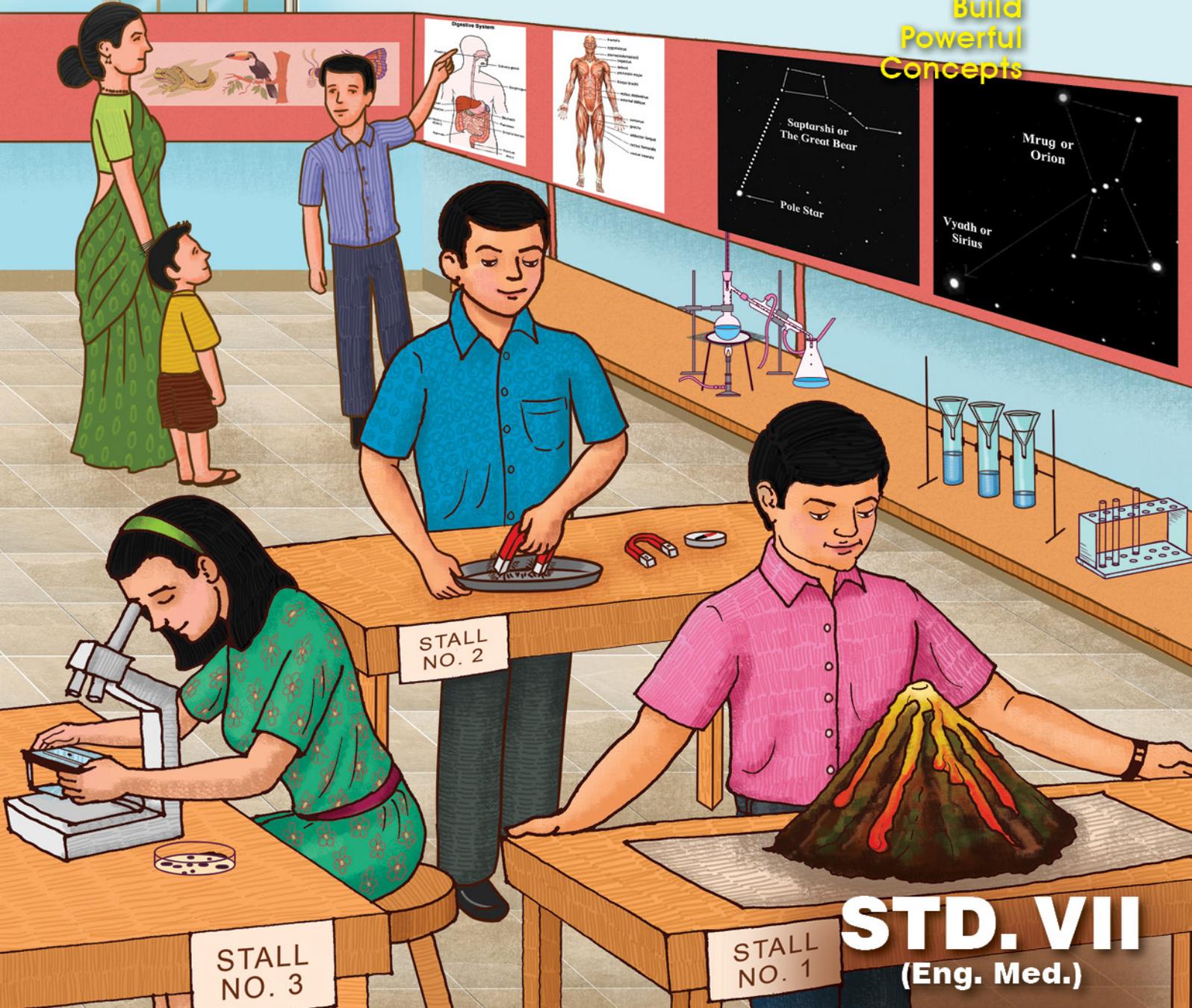
SAMPLE CONTENT



Perfect Notes

GENERAL SCIENCE

Build
Powerful
Concepts



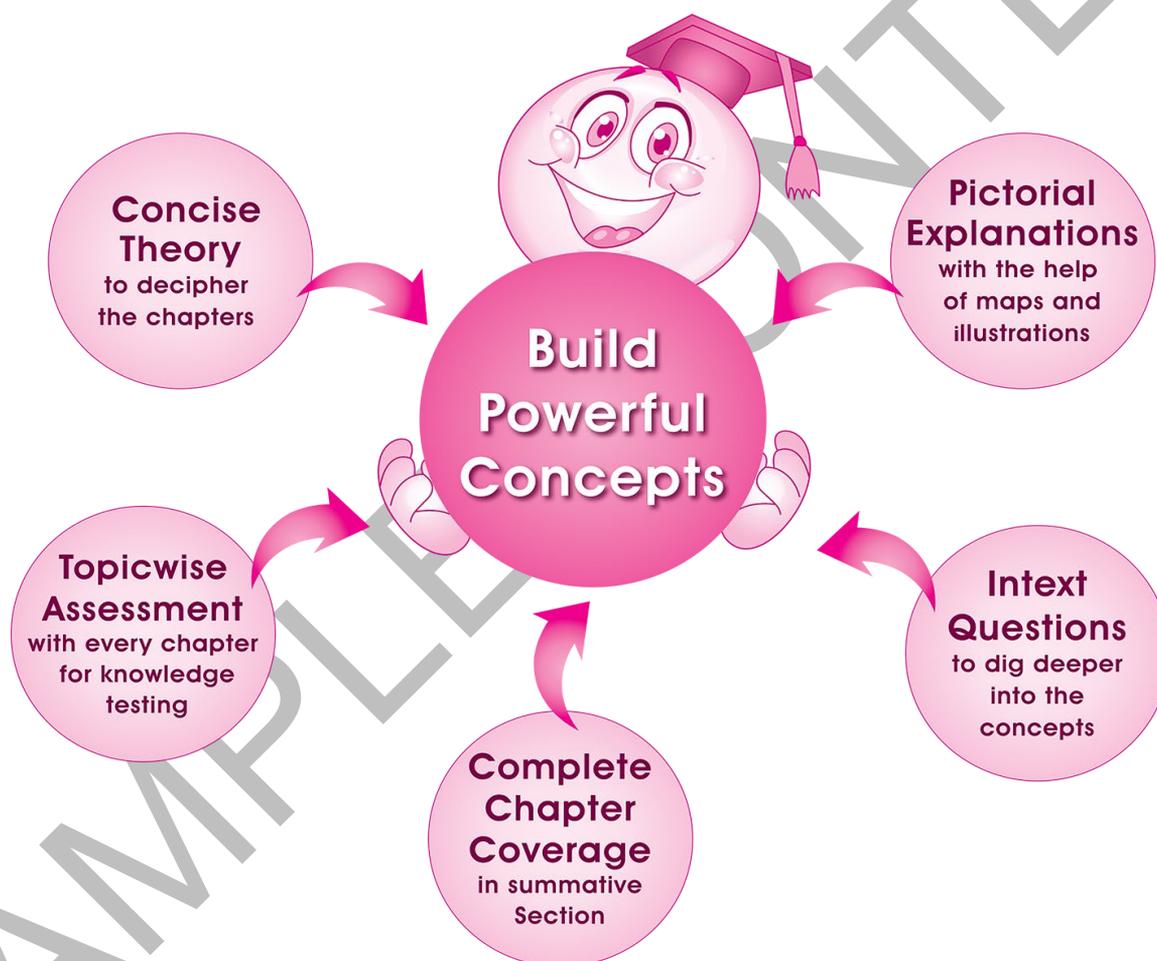
STD. VII
(Eng. Med.)

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STD. VII

General Science



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PREFACE

General Science: Std. VII has been prepared as per the new 'Continuous Comprehensive Evaluation' (CCE) evaluation system which is more child-centric and focuses on active learning and making the process of education more enjoyable and interesting.

We have infused the book with a liberal sprinkling of real life examples, pictorial explanations and additional questions. Questions titled under 'Use your brain power', 'Can you tell' and a series of 'In-text Questions', pave the way for a robust concept building.

Every chapter begins with Point wise Theory and Pictorial Illustrations. It follows through by covering all the textual content in the format of **Summative** and **Formative assessment**. Summative assessment includes Question-Answers, Give Reasons and other type of Questions. Formative assessment is divided into Apply your knowledge, Oral work, Activities and Project which helps students to understand concepts quickly. The chapter also includes **Activity Based Questions** that explain certain concepts to students in a point wise manner through the medium of an activity. The chapter eventually ends with a **Chapter wise Assessment** that stands a testimony to the fact that the child has understood the chapter thoroughly. To provide general and understandable explanations of the difficult terms, '**Glossary**' is included at the end of the book. **Additional information** and **Fun Facts** are added to trigger the students' thought process.

With absolute trust in our work, we hope, our holistic efforts towards making this book an ideal knowledge hub for students pays off.

The journey to create a complete book is strewn with triumphs, failures and near misses. If you think we've nearly missed something or want to applaud us for our triumphs, we'd love to hear from you.

Please write to us at: mail@targetpublications.org

A book affects eternity; one can never tell where its influence stops.

Best of luck to all the aspirants!

From,
Publisher

Edition: Second

Disclaimer

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*Note: Textual Questions are respresented by * mark.*

2. Plants : Structure and Function



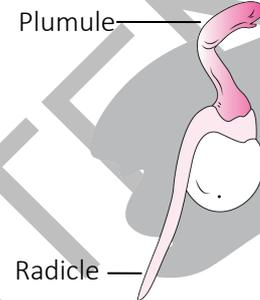
Let's Study

Introduction

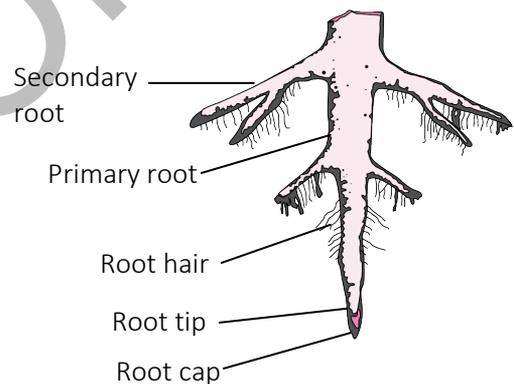
1. The root, stem, leaves, flowers and fruits are different parts of a plant. These parts differ from plant to plant. Thus, we can easily identify the plants with the help of these characteristics.
2. The part that grows from inside the seed towards the soil is called the **radicle** and the part that grows above the soil is called the **plumule**.

Root

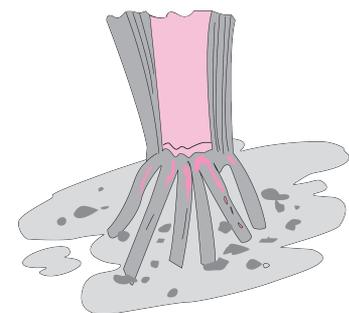
1. Radicle develops into the **root** which grows into the ground for providing support to the plant.
2. Root is thicker near the ground and gradually tapers to a pointed end.
3. In some plants, roots produce secondary roots, which grow obliquely and spread far and wide in the soil, providing support to the plant. Such type of root is called as **tap root**.
4. The **root tip** is delicate and represents the region of the growth of the root.
5. Roots bear hair-like processes near the root tip which are known as **root hair**.
6. Root tip is protected from injuries by a cap like structure called the **root cap**.
7. Thread like or fibre like roots arising from the stem are called **fibrous roots**.
8. Dicotyledonous plants have tap roots, whereas monocotyledonous plants have fibrous roots.
9. In plants like maize, sugarcane, sorghum, some roots are underground whereas some grow from the stem just above the soil.
10. In such plants, the roots that grow above the soil are called **adventitious roots**.
11. The basic function of root is absorption of water and minerals, anchoring and supporting the plants. However, some modified roots perform additional functions.
12. Aerial roots, stilt-roots, runners, breathing roots (pneumatophores), etc. are some examples of modified roots.
13. Roots emerging from the trunk and branches of a banyan tree grow towards the soil. These roots are called as **prop roots**. The number of prop roots in a banyan tree increases as the tree becomes old.
14. In the Indian Botanical Garden, Kolkata, a 250 years old banyan tree is found supported by thousands of prop roots.



Formation of root



Tap root

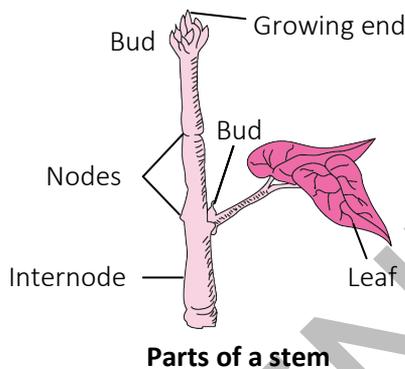


Maize stalk



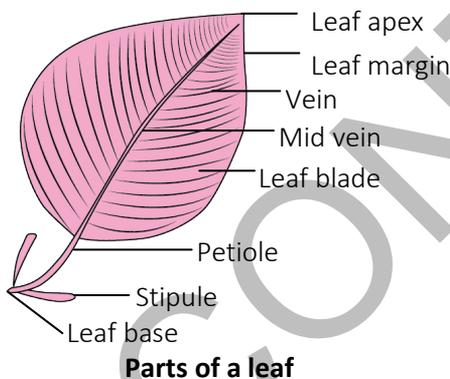
Stem

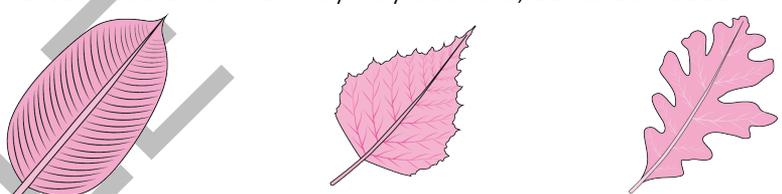
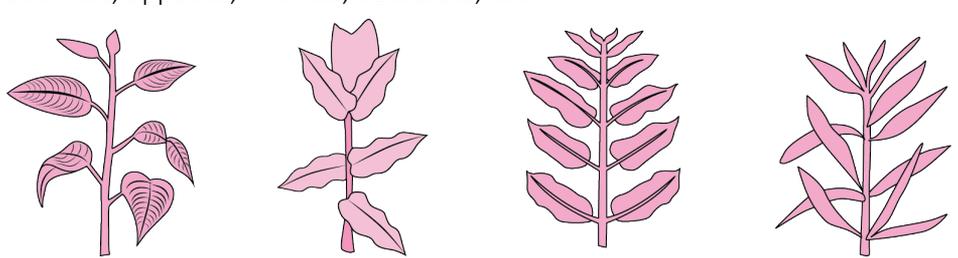
1. The plumule of the sprouting seed develops into the stem, which grows above the soil.
2. As the sprout grows, the length of stem increases gradually.
3. A stem shows **nodes** and **internodes**.
4. Node is a region from which leaves come out, whereas internode is a region between two nodes.
5. The tip or the apical end of the stem is called a **bud**.



Leaf

Leaves are generally thin, flat and green in colour.

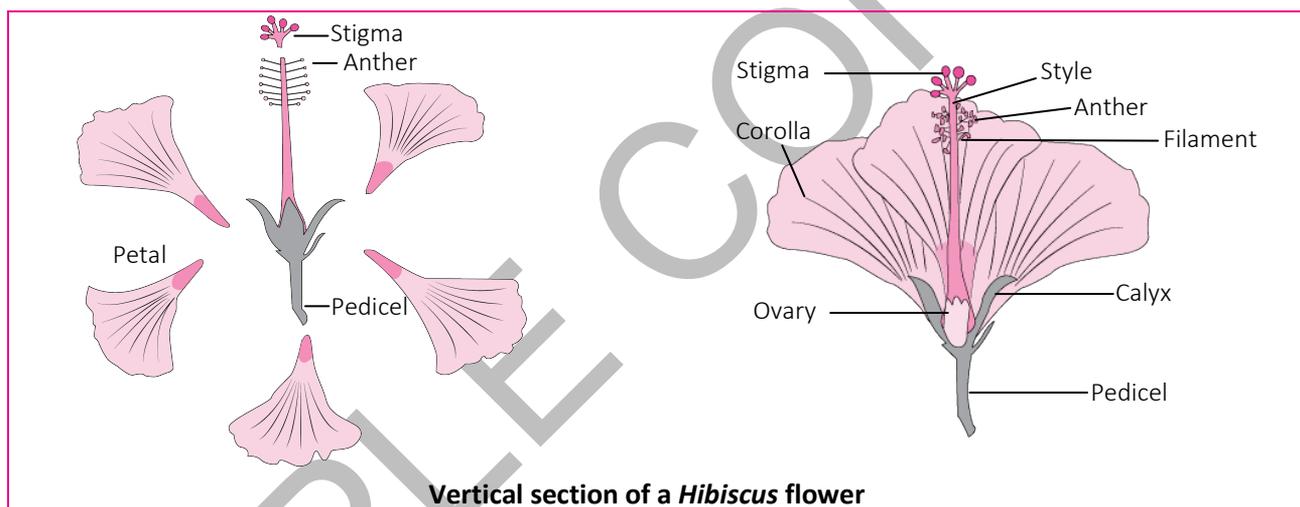


Leaf blade or lamina	A broad, spread out part of the leaf
Leaf margin	Edge of a leaf blade or lamina. They may be entire, dentate or lobed. 
Leaf apex	The tip of the leaf which may be tapering pointed or rounded.
Petiole	Stalk of a leaf. It may be present or absent in leaves of different plants.
Leaf base	The portion of the leaf attached to the stem.
Stipules	The small leaf like structures present near the leaf base of some leaves.
Simple leaves	A single undivided leaf blade and a single mid rib.
Compound leaves	The leaf-blade is divided into many small parts called leaflets.
Arrangement of leaves	Different plants show different arrangement of leaves on a stem. It may be alternate, opposite, whorled, decussate, etc. 



The shape of the leaves	Rounded (obovate), palmate, lanceolate, linear, etc.
Venation	<p>Leaves of some plants such as peepal, show reticulate venation, whereas leaf blade of some plant such as maize show parallel venation.</p> <div style="display: flex; justify-content: space-around; align-items: center;"> <div style="text-align: center;">  <p>Reticulate venation</p> </div> <div style="text-align: center;">  <p>Parallel venation</p> </div> </div> <ul style="list-style-type: none"> • The leaf-blade with reticulate venation shows a single mid-rib which lies along the mid line of the leaf blade. Secondary veins arising from the mid-vein are branched and form a network or reticulum. • In leaf blade with parallel venation, all the veins are parallel, running from leaf base to leaf apex.

Flower



Vertical section of a Hibiscus flower

Pedicel	<ul style="list-style-type: none"> • A stalk of flower which may be long or short. • One end of pedicel is attached to the stem while the other expanded and swollen end is called receptacle. • Petals and other parts of the flower are supported on the receptacle.
Calyx	<ul style="list-style-type: none"> • It is made up of sepals. • In bud condition petals are covered by leaf like, green coloured sepals.
Corolla	<ul style="list-style-type: none"> • It is made up of colourful petals. • The colour and shape of corolla differs from flower to flower.
Androecium	<ul style="list-style-type: none"> • It is the male reproductive part of the flower. • It consists of stamens. Each stamen consists of anther and filament.
Gynoecium	<ul style="list-style-type: none"> • It is the female reproductive part of the flower. • It is made up of carpels. • Each carpel consists of stigma, style and ovary.
Pollination	<ul style="list-style-type: none"> • At maturity, anthers burst and release pollen grains, which fall on the stigma. This process is called as pollination. • As a result of pollination, ovules (egg cells) in the ovary get fertilized and develop into seeds, whereas ovary develops into fruit.



Fruit

1. Different fruits have different shape, colour, taste, etc.
2. Mango contains only single seed, whereas jackfruit consists of many small fruitlets, each with its own seed. In cashew fruit, seed is outside the fruit.
3. Each fruit has a different skin or shell, fleshy part and seed.
4. The seeds which get divided into two equal parts are called as **dicotyledonous seeds**, whereas seeds which do not divide into two equal parts are called **monocotyledonous seeds**.

Summative Assessment



Fill in the blanks

1. Thread-like or fibre-like roots arising from the stem are called
2. The stem grows above the soil from the of the sprouting seed.
3. The part of the stem between two nodes is called
4. In some plants, the small leaf like structure present near the leaf base are called
5. is the female reproductive part of the flower.
6. After fertilization develops into a fruit.

Answers:

- | | | |
|------------------|--------------|--------------|
| 1. fibrous roots | 2. plumule | 3. internode |
| 4. stipules | 5. Gynoecium | 6. ovary |



Choose the correct alternative

1. Root tip is protected from injuries by.....
(A) radicle (B) root hairs (C) petiole (D) root cap
2. Dicotyledonous plants haveroots.
(A) fibrous (B) prop (C) tap (D) adventitious
3. Roots emerging from the trunk and branches of a tree growing towards the soil are called as.....
(A) adventitious roots (B) prop roots (C) fibrous roots (D) tap roots
4. In buds, petals are covered by leaf-like, green coloured.....
(A) corolla (B) sepals (C) androecium (D) pedicel

Answers:

- | | | | |
|--------|--------|--------|--------|
| 1. (D) | 2. (C) | 3. (B) | 4. (B) |
|--------|--------|--------|--------|



Right or Wrong? If Wrong, write the correct sentence.

1. The part that grows from inside the seed towards the soil is called plumule.
2. Leaves of some plants do not have petiole.
3. The peepal leaf blade has parallel venation.
4. The expanded and swollen end of the pedicel is called as receptacle.
5. A carpel consists of anther and filament.
6. In cashew, seed is outside the fruit.

**Answers:**

- Wrong.
The part that grows from inside the seed towards the soil is called the radicle.
- Right.
- Wrong.
The peepal leaf blade has reticulate venation.
- Right.
- Wrong.
A stamen consists of anther and filament whereas a carpel consists of stigma, style and ovary.
- Right.

**Odd One out**

- Alternate, opposite, whorled, palmate, decussate
- Calyx, corolla, petiole, androecium, gynoecium
- Pea, moong, rice, groundnut, gram seeds

Answers:

- Palmate.
Reason: Palmate is shape of a leaf, rest are types of arrangement of leaves on stem.
- Petiole.
Reason: Petiole is a stalk of a leaf, rest are parts of a flower.
- Rice.
Reason: Rice is monocotyledonous seed, rest are dicotyledonous seeds.

**Match the Following**

- Match the description mentioned in Group 'A' with the appropriate words in Group 'B'.

Group 'A'		Group 'B'	
i.	Stalk of leaf	a.	Leaf base
ii.	The portion of the leaf attached to the stem	b.	Leaf margin
iii.	The edge of leaf-blade	c.	Petiole
iv.	The tip of the leaf	d.	Lamina
		e.	Leaf apex

- Match the description mentioned in Group 'A' with the appropriate words in Group 'B'.

Group 'A'		Group 'B'	
i.	Female reproductive part of flower	a.	Androecium
ii.	The part of a flower which is made up of sepals	b.	Corolla
iii.	Male reproductive part of flower	c.	Stipule
iv.	The part of a flower which is made up of petals	d.	Calyx
		e.	Gynoecium

Answers:

- (i – c), (ii – a), (iii – b), (iv – e)
- (i – e), (ii – d), (iii – a), (iv – b)



Compare between the two

*1. What are the similarities and differences between?

- | | |
|--------------------------------|--|
| i. Jowar and Moong | ii. Onion and Coriander |
| iii. Leave of banana and Mango | iv. Coconut tree and Jowar stalk plant |

Ans: i. Jowar and Moong:

Similarities:

- In both jowar and moong, seeds are edible.
- Both jowar and moong are flowering plants.

Differences:

- Seeds of Jowar are monocotyledonous, whereas seeds of moong are dicotyledonous.
- Jowar has underground fibrous roots and adventitious roots above the soil. Moong has tap root.
- Stem of Jowar is unbranched whereas stem of moong plant shows branches.
- Leaf of Jowar shows parallel venation, whereas leaf of moong shows reticulate venation.

ii. Onion and Coriander:

Similarities:

Both onion and coriander are flowering plants.

Differences:

- Seeds of onion are monocotyledonous, whereas seeds of coriander are dicotyledonous.
- Onion plant has fibrous roots, whereas coriander has tap root.
- Stem of onion is unbranched, whereas stem of coriander plant shows branches.
- Leaf of onion shows parallel venation whereas leaf of coriander shows reticulate venation.

iii. Leave of banana and mango:

Similarities:

Leaves of both banana and mango possess petiole and midrib.

Differences:

Banana leaf shows parallel venation, whereas mango leaf shows reticulate venation.

iv. Coconut tree and Jowar stalk plant:

Similarities:

- Seeds of both coconut and Jowar are monocotyledonous.
- Both coconut and Jowar show fibrous root.

Differences:

- Coconut is a tree, whereas Jowar is a shrub.
- Stem of coconut tree is woody, whereas stalk of jowar is soft.



Answer in your own words

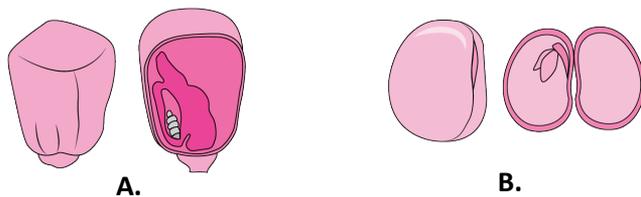
*1. Observe any one flower and its various parts and describe it in your own words.

Ans: The various parts observed in a rose flower are as follows:

- The pedicel of rose flower i.e. stalk is green in colour.
- The leaf like green coloured sepals in rose are calyx.
- The red coloured petals in rose flower are corolla.
- The androecium in rose flower is made up of stamens which consist of anther and filament.
- On observing the vertical section of a rose flower it is possible to see the gynoecium which is the female reproductive part of flower. It is made up of carpels consisting of stigma, style and ovary.



*2. Explain the following images in your own words.



- Ans:** i. Image 'A' indicates maize grain. It is a monocotyledonous seed, thus it cannot be divided into two equal parts.
 ii. Image 'B' indicates Bean seed. It is a dicotyledonous seed, thus it can be divided into two equal parts.



Answer the following

1. What is tap root? Give any three examples of plants which possess tap root.

- Ans:** i. The primary root of some plants produce secondary roots.
 ii. These secondary roots grow obliquely and spread far and wide in the soil. They provide support to the plant and are called as tap roots.
 iii. Tap roots are found in plants like Mustard, Tulsi, Periwinkle, etc.

2. Which are the two types of roots found in maize plant?

- Ans:** i. The two types of roots found in maize plant are fibrous roots and adventitious roots.
 ii. Fibrous roots of maize grow underground, whereas adventitious roots grow from stem just above the soil and provide extra support to the maize plant.

3. Do you know? (Textbook page no. 11)

i. What is the use of prop roots in banyan tree?

Ans: Prop roots in banyan tree are the modified aerial roots. These roots provide extra support to the growing branches of banyan tree.

ii. Is there any banyan tree with thousands of prop roots in your neighbourhood?

Ans: No, I have not seen any banyan tree with thousands of prop roots in our neighbourhood, but there is a huge banyan tree near the playground of my school having many prop roots touching the ground.

4. Find out. (Textbook page no. 11)

Why are the underground parts of plants like radish, carrot, beet and sweet potato thick, fleshy and swollen? Which part of the plant are they?

- Ans:** i. The underground parts of plants like radish, carrot, beet and sweet potato are thick, fleshy and swollen due to storage of food.
 ii. Radish, carrot and beet are the roots modified for storage of food.

5. Complete the following table by giving an example for each type of modified root:

	Modified root	Examples
i.	Aerial root	
ii.	Stilt root	
iii.	Runners	
iv.	Breathing roots (Pneumatophores)	
v.	Root, modified for storage of food	

- Ans:** i – Prop roots of banyan tree, ii – Sugarcane, iii – Grass, iv – Mangrove, v – Carrot



6. Complete the given table. (One has been done for you)

		Answers
i.	Types of leaf margin	Entire, dentate, lobed
ii.	Types of leaf apex	
iii.	Different shapes of leaf	
iv.	Arrangement of leaves on stem	

Ans: ii – Tapering, pointed, rounded;
iii – Rounded, palmate, lanceolate, linear
iv – Alternate, opposite, whorled, spiral.

7. Intext Question. (Textbook page no. 12)
Do you see stipules in all plants?

Ans: No. Stipules are not present in all plants. For e.g. Leaves of rose, *Hibiscus* possesses stipules. However, leaves of peepal, banyan do not possess stipules.

8. What are simple and compound leaves. Give two examples of each.

Ans: i. When leaf has a single undivided leaf-blade and a single mid rib, it is called as simple leaf.
For example: Mango leaf, *Hibiscus* leaf.
ii. When leaf blade is divided into many small leaflets, it is called as compound leaf.
For example: Gulmohar leaf, Neem leaf.

***9. Certain properties are mentioned below. Find a leaf corresponding to each property and describe those plants.**

Leaves with smooth surface, leaves with rough surface, fleshy leaf, spines on leaf

Ans:

	Properties	Leaves	Description
i.	Leaves with smooth surface	Mango Leaf	When we touch the lamina of mango leaf, it appears smooth.
ii.	Leaves with rough surface	Fig Leaf	When we touch the lamina of fig leaf, it appears rough due to presence of some stiff hair like outgrowths.
iii.	Fleshy leaf	<i>Aloe vera</i> Leaf	<i>Aloe vera</i> leaf is modified for storage of water. This helps them to survive in place where very little water is available.
iv.	Spines on leaf	<i>Pandanus</i> (<i>Kewda</i>) Leaf	The long leaves of <i>Pandanus</i> possess prickly spines along the edges and mid rib.

***10. Give examples of 3 plants that have**

- i. Spiny fruits
Ans: Jackfruit, Spine gourd (*Kartoli*), Castor fruit
- ii. Spiny stem
Ans: Rose, Lemon, Cactus
- iii. Red flowers
Ans: Rose, *Hibiscus*, Gulmohar
- iv. Yellow flowers
Ans: Sunflower, Marigold, *Chrysanthemum*
- v. Leaves which close at night
Ans: Rain tree, Tamarind, Gulmohar
- vi. Single-seeded fruits
Ans: Mango, Litchi, Cashew
- vii. Many seeded fruits
Ans: Watermelon, Jackfruit, Orange



Fun Facts

- Pomology is the study of fruits.
- Square Watermelons are grown by Japanese farmers for easier stack and store.

***11. Describe the functions of various parts of a plant.**

Ans: The various parts of a plant are root, stem, leaves, flower and fruit.

Functions:**i. Root:**

The main function of root is absorption of water and minerals, anchoring and supporting the plant. In some plants, roots are modified and perform the function such as breathing (example: pneumatophores in mangroves), storage (example: radish), etc. Adventitious roots grow on the stem above the soil and provide extra support to the plant. (Example: Maize)

ii. Stem: Stem carries water and minerals from roots to other parts of a plant. It also carries food prepared by leaves to other parts of a plant.

iii. Leaves: Leaves contain green coloured pigments called chlorophyll which helps in preparation of food by the process of photosynthesis.

iv. Flower:

Flower is the reproductive part of a plant. It produces fruits and seeds as a result of fertilization.

v. Fruit: It contains seeds. On maturation, seeds are released from the fruit and germinate to give rise to a new plant.

12. What is pollination? What will happen if pollination does not occur in flower?

Ans: i. The matured anther bursts and the pollen grains which are released fall on the stigma. This process is called pollination.

ii. If pollination does not occur in the flower, then fertilization of ovules will not take place. As a result, fruit and seeds will not be formed.

***13. Find the plant parts.**

r	b	u	d	x	s	r	f
o	w	p	y	e	t	a	l
o	l	l	d	n	e	d	o
t	a	o	i	l	m	i	w
c	n	e	t	a	l	c	e
a	v	o	v	u	m	l	r
p	e	t	a	l	s	e	o
r	o	o	t	h	a	i	r

Ans:

r	b	u	d	x	s	r	f
o	w	p	y	e	t	a	l
o	l	l	d	n	e	d	o
t	a	o	i	l	m	i	w
c	n	e	t	a	l	c	e
a	v	o	v	u	m	l	r
p	e	t	a	l	s	e	o
r	o	o	t	h	a	i	r



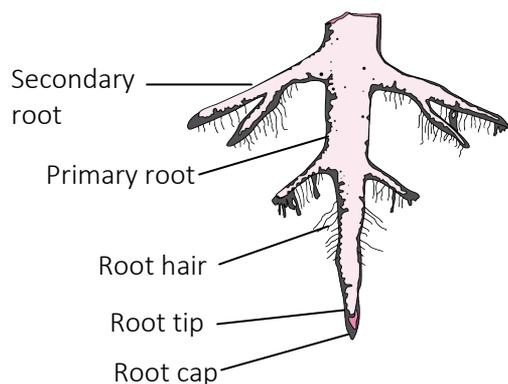
Questions based on diagram

1. Draw a neat and labelled diagram of the following:

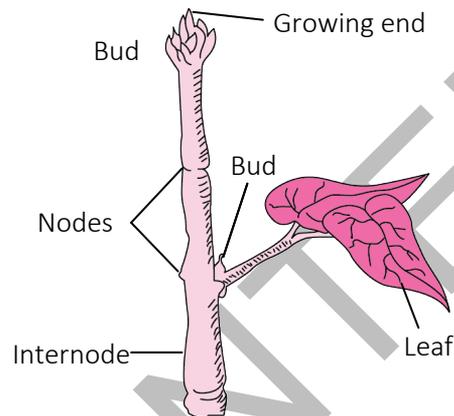
- i. Parts of a tap root
- ii. Vertical section of a *Hibiscus* flower

ii. Parts of a stem

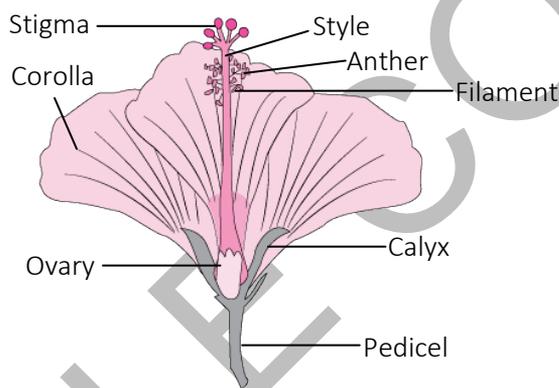
Ans: i. Parts of a tap root



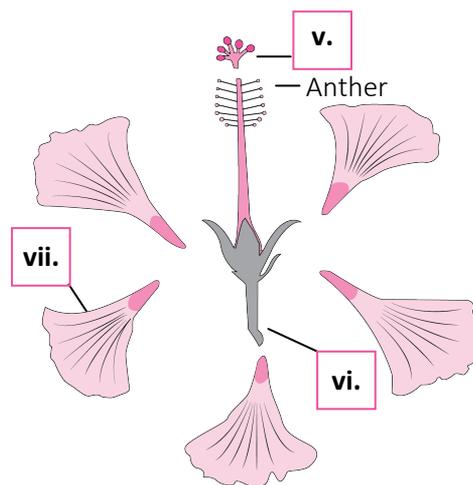
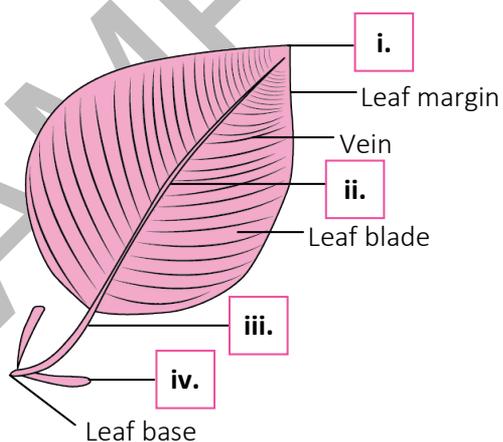
ii. Parts of a stem



iii. Vertical section of a *Hibiscus* flower



2. Observe the given figures and label the missing parts by selecting the correct words from the bracket.



(Petal, Stipule, Mid vein, Pedicel, Leaf apex, Petiole, Stigma)

Ans: i. Leaf apex ii. Mid vein iii. Petiole iv. Stipule
v. Stigma vi. Pedicel vii. Petal



Formative Assessment



Apply Your Knowledge

1. **Let's recall.** (Textbook page no. 10)
- i. **What helps us to easily identify the plants around us?**
Ans: Different characteristics of plants such as their height, shape of leaves, colour of flowers, fruits, etc. help us to identify the plants around us.
- ii. **Which are the various parts of plants?**
Ans: The root, stem, leaves, flowers, fruits, etc. are the different parts of plants.
2. **Try this.** (Textbook page no. 10-11)
- i. **Keep a moistened ball of crumpled paper in a conical flask. Place some soaked *moth* beans/gram seeds in the flask between the paper and the glass wall. Observe and note the changes in the seeds in two or three days.**
Ans: Observation:
In two to three days, the soaked *moth* beans/gram seeds start germinating. A white coloured radicle comes out from the small opening of the seed and holds the moistened surface of the paper.
- ii. **Take a glass jar and fill three-quarters of it with water. Place an onion on the mouth of the jar in such a way that its roots are towards the water. Observe the growth of the roots for eight days.**
Ans: Observation: Thread like or fibre like roots can be seen arising from the base of the onion. These roots grow towards the water.
- iii. **Sow the seeds of plants like mustard, sorghum (jowar), maize (corn), pea, coriander, etc. in an earthen pot. Cultivate the plant for eight days. Once the plants grow 15 to 20 cm high, uproot them carefully while the soil is moist and put them gently in a large conical flask containing water. The soil will get washed off without any harm to the roots. Observe the roots carefully to see which plants have tap roots and which ones have fibrous roots.**
Ans: Observation:
a. Plants having tap roots: Mustard, pea, coriander
b. Plants having fibrous roots: Sorghum (Jowar), maize (corn)
- iv. **Take some water in a small glass jar. Put a plantlet in it in such a way that its roots are dipped in the water. Mark the water-level on the jar and add 5 ml of the oil to the water. Record the water-level on the next day.**
Discuss your observations in the class.
Ans: Observation:
Decrease in water level can be seen in jar containing rooted plantlet. It is because roots absorb water and carry it to the stem and leaves.
3. **Use your brain power!** (Textbook page no. 11)
- i. **What would have happened if plants like tamarind, banyan and mango had fibrous roots?**
Ans: a. If plants like tamarind, banyan and mango had fibrous roots, they would have fallen down easily.
b. It is because these tree grow to a huge size thus only tap root can go deep inside the soil, spread its secondary roots and fix the tree firmly in the soil.
- ii. **What will happen if the root-tip is injured?**
Ans: If the root tip is injured, the root will not grow further. It is because, root tip is the region of the growth of the root.



iii. Which types of roots do the fenugreek, spinach and onion plants have?

Ans: Fenugreek and spinach plants have tap roots, whereas onion plants have fibrous roots.

4. Intext Question. (Textbook page no.12)

Observe a branch of any plant and identify its different parts as per the diagram given on page no. 12 of your textbook.

(Students may attempt this activity on their own with the help of given diagram showing parts of a stem.)

5. Intext Question. (Textbook page no.12)

Complete the Chart (Collect information about other local plants, too).

Name of plant	Thickness (circumference) of node (mm)	Length of internode (mm)
1. Sugarcane	25 mm to 50 mm	Approximately 3000 mm
2. Fenugreek	1 mm to 2 mm	20 mm to 50 mm

Lemon, Tulsi, Periwinkle, *Hibiscus*, *Rose*, etc.

(Students may attempt this activity on their own by studying the given examples of plants.)

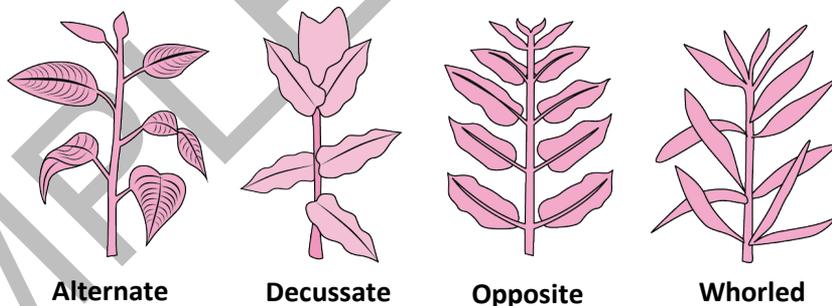
6. Observe and Discuss. (Textbook page no. 13) 

Observe a branch of plants like rose, neem, coriander, *Hibiscus*, etc.

- Ans:
- i. When we observe a branch of plants like rose, neem, coriander and *Hibiscus*, we could see alternate arrangement of leaves on stem.
 - ii. However, shape of leaves is different in these plants. It is as follows:
 Rose: Rounded (obovate)
 Neem: Linear
 Coriander: Deeply lobed, fan-shaped
 Hibiscus: Lanceolate
 - iii. Also, simple type of leaves are found in *Hibiscus*, whereas compound leaves are found in rose, neem and coriander.

7. Intext Question. (Textbook page no.13)

Observe the different types of leaves given below. In the box, draw a special leaf you may have found.



Alternate

Decussate

Opposite

Whorled

Ans:



The given diagram represents compound leaf of a coconut tree. Here, leaves are arranged spirally at the top of the stem making a crown like appearance.

Each leaf consists of linear shaped leaflets showing parallel venation.



8. **Try this.** (Textbook page no. 13) 

Take a peepal leaf and a maize leaf and observe them carefully.

Observe the leaves of some other plants in your surroundings and identify the type of venation.

Ans: Peepal leaf shows reticulate venation, whereas maize leaf shows parallel venation.

(Students can observe leaf-blade of tulasi, banyan, wheat, mint, spinach, grass, onion, etc. and study the type of venation in them.)

9. **A little fun!** (Textbook page no.13) 

Take a fallen peepal leaf and soak it in water for 15-20 days. Dry it and make a greeting card of the lace-like leaf you get.

(Students are expected to perform the above activity on their own.)

10. **Intext Question.** (Textbook page no.13)

Complete the chart given on page no. 13 of your textbook by observing the plants around you.

Ans:

Sr. No.	Name of plant	Type of leaf	Shape of leaf blade	Venation	Shape of leaf margin	Shape of leaf apex	Petiole Yes/No	Stipule Yes/No	Arrangement on stem
i.	Maize	Simple	Linear	Parallel	Entire	Tapering	No	No	Alternate
ii.	Canna	Simple	Ovate	Parallel	Entire	Pointed	No	No	Alternate
iii.	Peepal	Simple	Cordate (heart shape)	Reticulate	Entire	Pointed	Yes	No	Alternate
iv.	Rose	Compound	Rounded	Reticulate	Dentate	Pointed	Yes	Yes	Alternate

11. **Try this.** (Textbook page no. 14) 

i. Carefully observe a fully opened *Hibiscus* flower.

ii. Take a vertical section of a *Hibiscus* flower with the help of a sharp blade, by cutting the flower vertically from stigma to pedicel. Both sections of the flower will be seen to have the same structure.

[Students are expected to perform the above activity in class on their own.

Students should observe following parts in the dissected flower:

Calyx (sepals), *Corolla* (petals), *Androecium* (filament, anthers), *Gynoecium* (style, stigma and ovary)

Students can also observe tiny ovules inside the ovary.]

12. **Use your brain power!** (Textbook page no. 14) 

Of what use to a plant are the insects flitting about around its flowers?

- Ans:**
- Insects are the pollinating agents. They bring about the process of pollination in flowers.
 - When insects like honeybees visit a flower for collecting nectar, the pollen grains stick to their legs.
 - When such insects visit another flower of the same species, these pollen grains fall on the stigma and bring about pollination.
 - Pollination further results in fertilization by which flowers produce fruit and seeds.

**13. Intext Question.** (Textbook page no.14)

Observe the various flowers and complete the chart given on page no.14 of your textbook.

Ans:

Name of flower	Number of Sepals	Sepals free/united	Number of petals	Petals free/united	Form of androecium and gynoecium
Hibiscus	5	United	5	Free	Androecium is made up of many stamens. Gynoecium is made up of 5 carpels.
Gulmohar	5	Free	5	Free	Androecium is made up of 10 stamens. Gynoecium is made up of single carpel.
Chilly	5	United	5	United	Androecium is made up of 5 stamens. Gynoecium is made up of 2 carpels.

14. Intext Question. (Textbook page no.15)

Observe the fruits of *ber* (*Ziziphus*), mango, chikoo, apple, etc. What do you observe?

Ans: Different fruits like *ber* (*Ziziphus*), mango, chikoo, apple, etc. have different skin or shell, fleshy part and seed.

15. Intext Question. (Textbook page no.15)

Soak the seeds of pea, wheat, rice, jowar, groundnut in water for 3-4 hrs. Press the seeds with your fingers and observe them. Which seeds get divided into two equal parts?

Ans: Seeds of pea and groundnut get divided into two equal parts, whereas seeds of wheat, rice and jowar do not divide into two equal parts.



Oral work

1. Name the hair-like processes near the root tip.

Ans: Root hairs

2. Mention the part of a root which protects root tip from injuries.

Ans: Root cap

3. Which type of root grows from the stem just above the soil?

Ans: Adventitious root type of root grows from the stem just above the soil.

4. Name the broad spread out part of the leaf.

Ans: Leaf-blade or Lamina

5. In which type of leaf, leaf-blade is divided into many leaflets?

Ans: Compound leaves

6. Name the process due to which fertilization of ovules in the ovary takes place.

Ans: Pollination



Activities

***1. Sketch various types of leaves in Paintbrush on the computer and save the sketches in a folder of your own name.**

(Students are expected to perform the above activity on their own.)

2. Techno-support. (Textbook page no.11)

Collect images of different types of roots and send them to your friends via e-mail.

(Students are expected to perform the above activity on their own.)

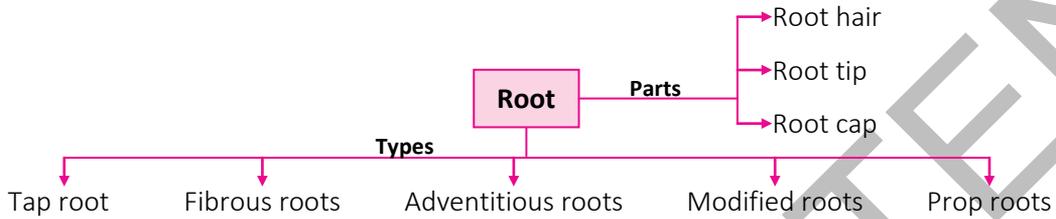


Memory Maps

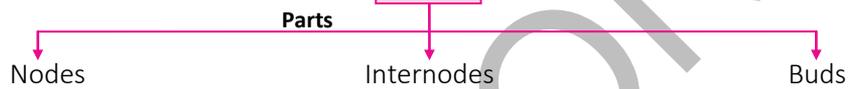
Parts of a Plant



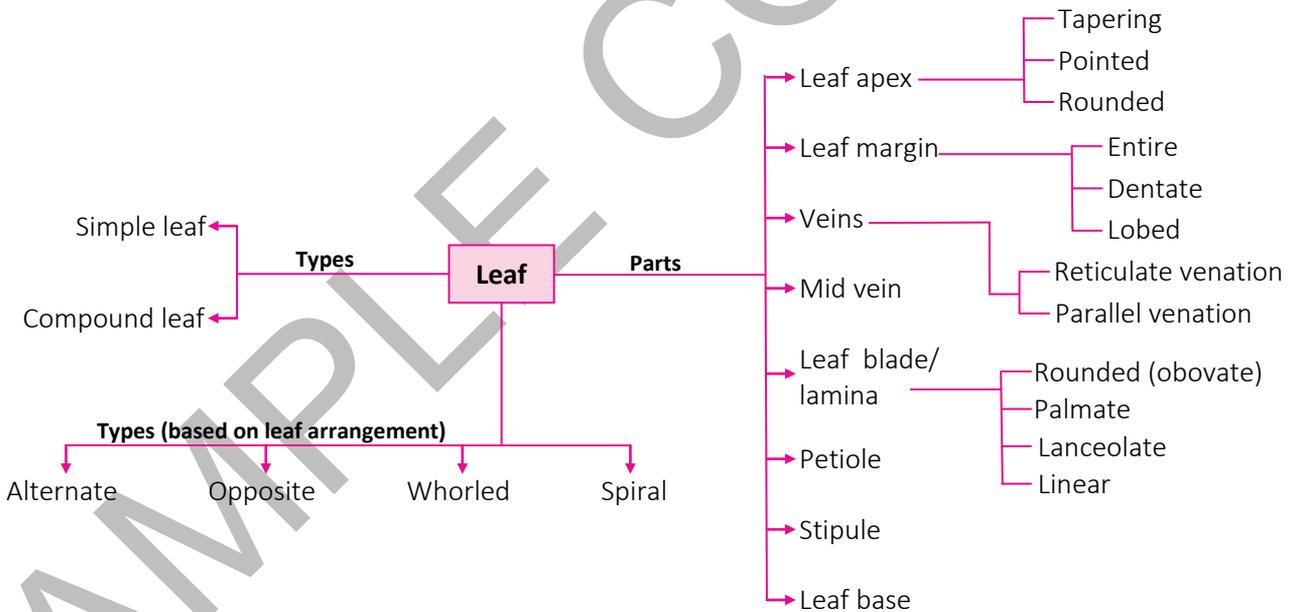
Root



Stem



Leaf



Flower



Seeds





Chapter Assessment

1. Choose the correct alternative.

- i. is found in mango plant.
(A) Breathing root (B) Stilt root
(C) Tap root (D) Fibrous root
- ii. Nodes and internodes are the parts of
(A) Root (B) Stem (C) Leaf (D) Fruit

2. Right or wrong? If wrong, write the correct sentence.

- i. Dicotyledonous plants have tap roots.
ii. The seeds which can be divided into two equal parts are called as monocotyledonous seeds.

3. Answer the following in one sentence.

- i. Which are the two main types of leaves?
ii. What is the function of root cap?

4. Draw a well labelled diagram of vertical section of a *Hibiscus* flower.**Answers:**

1. i. (C) ii. (B)
2. i. Right.
ii. Wrong.
The seeds which can be divided into two equal parts are called as dicotyledonous seeds.
3. i. Simple leaf and compound leaf are the two main types of leaves.
ii. Root cap protects the root-tip from injuries.
4. Refer Question based on diagram Q.1(iii).



Std. VII



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