Class IX

EXPERIMENT No: 9

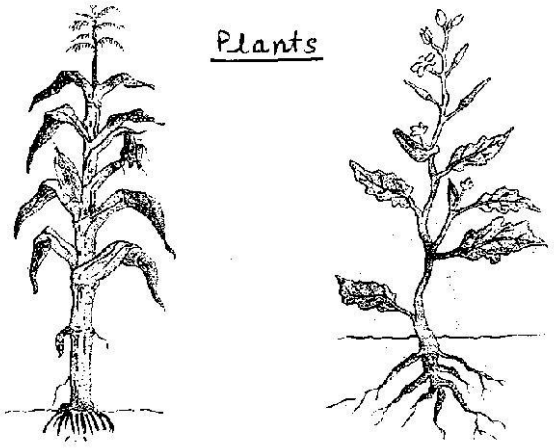
AIM: To study the external features of root, stem, leaf and flower of monocot and dicot plants.

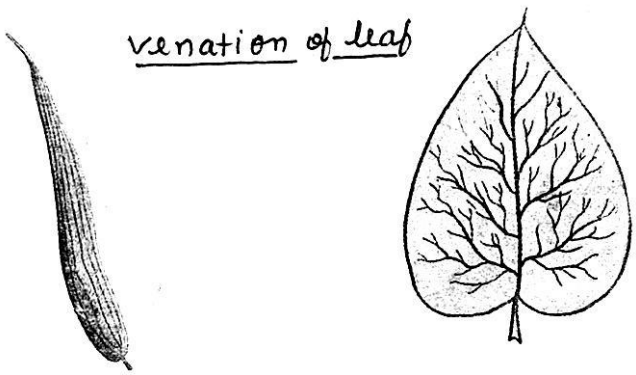
Material Required :

Plants of Hibiscus/Peturnia/rose/pea and grass/maize/bamboo/lily or, any other ornamental herb with flower and fruits, simple or dissecting microscope, hand lens, slide, coverslip and razor /blade.

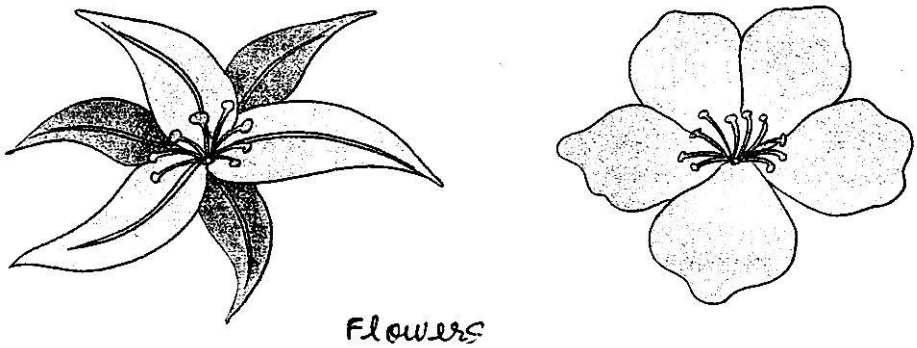
Procedure :

1. Observe the differences in the external features of stem, leaf, root, flowers and seeds.
2. To study the leaf, see their shape and venation i.e. parallel or reticulate.
3. To study the roots, wash them properly and then spread on the paper and study their nature i.e. tap root or fibrous.



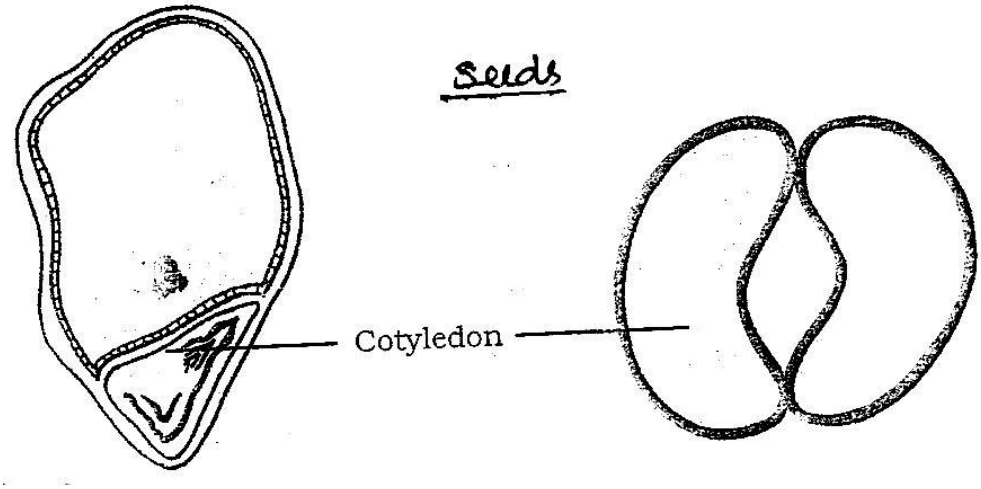


4. To study the flower, count the number of sepals & petals in the flower is trimerous or pentamerous.

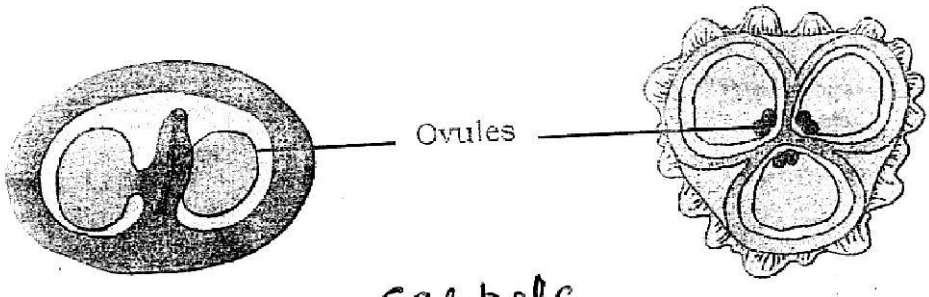


Flowers

5. Remove the seed coat and count the number of cotyledons is mono cotyledon or dicotyledon.



6. Take a transverse section of ovary and count the number of carpels ie bicarpillary or tricarpellary.



Observations :

Observe the important features that distinguish a monoct and a dicot plant and list the features of difference between than in the table given below.

S. No.	Feature	Monocot	Dicot
1.	Leaf venation: (Parallel/Reticulate)		
2.	Leaf shape : (broad/narrow)		
3.	Roots : Fibrous/ tap root		
4.	Floral parts : multiple of 3 or 5		
5.	Sepal : number and colour		
6.	Petals : number and colour		
7.	Pistil : number of carpels		
8.	Cotyledon : one or two		

Inference :

The monocot plants can be differentiated from dicot plants by the presence of parallel venation in leaf, narrow leaves, fibrous roots, floral parts in the multiple of 3 and one cotyledon in their seeds.

Precautions :

1. A hand lens must be used to see the leaf venation or number of cotyledons.
2. Small / Tiny plants must be selected for study.
3. The plants bearing plowers and/or