

Multiple choice questions:

1. Put a tick mark (✓) against the correct alternative in the following statements:
  - a) In a germinating seed, the roots develop from → (i) Radicle.
  - b) In a germinating seed, the shoot develops from → Plumule (ii).
  - c) Which one of the following is a monocotyledonous seed?  
(iii) Maize.
  - d) If the cotyledons are pushed above the soil, then such type of germination is called: (i) Epigeal.
  - e) If the cotyledons remain under the soil, then such type of germination is called → (ii) Hypogeal.
  - f) Pollen is produced in the: (iv) Anther.
  - g) Reproductive whorls of a flower are: (i) Stamens and Carpels.
  - h) Which one of the following is a false fruit? (ii) Apple.
  - i) In a seed, food is generally stored in: (iv) Cotyledons or endosperm.

SHORT ANSWER QUESTION:

1. Label the parts 1 to 5 and write their functions

Ans: '1' - Testa (seed coat)

Function: It protects the seed from insects and bacteria as well as from mechanical injury.

'2' - Plumule

Function: It develops into a shoot

'3' :- Radicle

Function :- It develops into a root.

'4' :- Micropyle

Function :- It absorbs and allows the entry of as much water as is required for germination.

'5' :- Cotyledons.

Function :- It contains stored food material which is used by the seedling for growth.

2. Name the following:

- (a) A seed which shows hypogeal germination :- rice / maize / groundnut
- (b) A monocot seed :- maize / rice
- (c) A dicot seed :- bean / pea
- (d) A seed which shows epigeal germination :- bean / tamarind / papaya / cucumber

3. Differentiate between the following pairs of terms:

(a) <u>Radicle</u> It develops into a root.	<u>Plumule</u> It develops into a shoot.
(b) <u>Hilum</u> It marks the place where the seed was attached to the fruit-wall.	<u>Micropyle</u> It absorbs and allows the entry of as much water as is required for germination.

c. <u>Testa</u>	<u>Tegmen</u>
It is the outer exposed part of the seed-coat	It is a thin membrane which lies under the testa

4. Give two functions of a fruit.

Ans. The two functions of a fruit are:

1. It protects seeds from the unfavourable environmental conditions.

2. It stores food inside them

5. Match the columns:

(a) — (iii)

(b) — (i)

(c) — (ii)

(d) — (v)

(e) — (iv)

6. Radicule emerges out of the seed earlier than plumule.  
State one advantage served by this:

Ans - The radicle emerges out of the seed and develops into a root as it needs to start absorbing water for seed development and also helps to fix the plant in the soil.

7. State whether the following statements as True or False

(a) False (b) True (c) False (d) True.

8. State one function of the following

(a) Radicle :- It develops into a root

(b) Cotyledons :- It contains stored food material which is used by the seedling for growth.

(c) Endosperm :- It stores food in the form of starch in monocot seeds.

(d) Micropyle :- It absorbs and allows the entry of as much water as is required for germination.

9. The three conditions necessary for germination of seeds are:

(a) Oxygen, suitable temperature and water

10. Name the part of the seed from which the following are given out:

(a) Roots :- Radicle (b) Leaves :- Plumule.

### LONG ANSWER QUESTIONS

1. What is meant by pollination? Name the two types of pollination.

Ans Pollination is the transfer of pollen grains from the anthers to stigma of a flower.

The two types of pollination are :-

(i) self pollination.

(ii) Cross pollination.

2. Imagine all the seeds produced by a plant happen to fall under the same plant and sprout into new-plants. Mention any two problems that will be faced by the new plants.

Ans. The two problems that would be faced by the new plants are :-

- (i) Shortage of space for the growth of their roots.
- (ii) They would not get favourable conditions for growth

3. What is a flower? Draw a typical flower and label its different parts

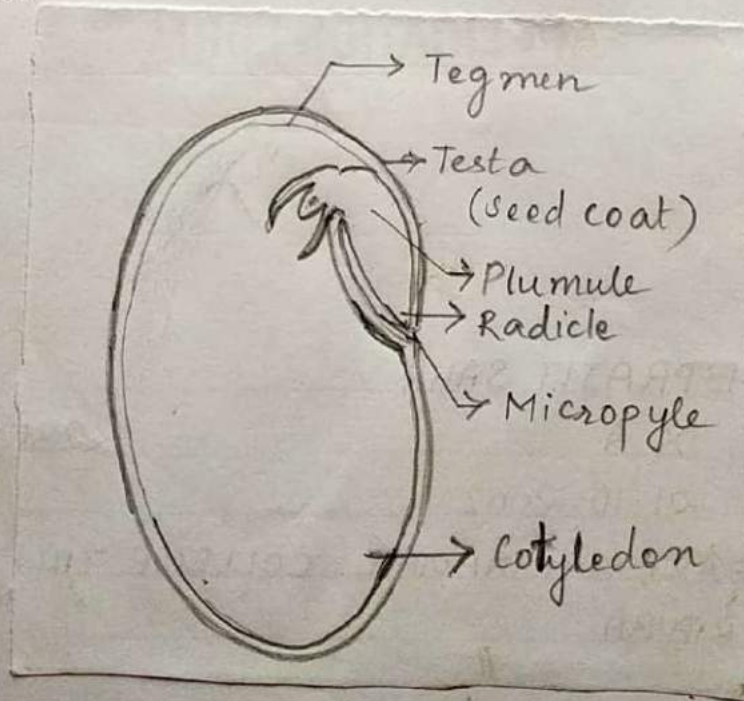
Ans. A flower is usually the most beautiful and colourful part of a plant which serves as the reproductive organ. It is attached to the shoot by means of a stalk or pedicel. The tip of the stalk is enlarged and slightly flattened (thalamus) from where the petals and other floral parts arise.

Diagram of a typical flower with labelling → H/W.

34. With the help of a suitable labelled diagram, describe the structure of a dicot seed.

Ans: The bean seed (Dicot) is protected by a thin, greenish outermost covering called the seed coat. The seed coat is made up of two parts - the outer exposed part is called the testa and the inner part called the tegmen.

On the concave side of the seed there is a scar called hilum, which marks the place where seed was attached to the fruit wall. Above the hilum is a small pore called micropyle. (micro = small, pyle = passage). The seed is made up of two fleshy seed leaves called the cotyledons. In between the two cotyledons is located the delicate embryo which consists of a radicle and a plumule. The radicle develops into a root and the plumule develops into a shoot.



A bean (dicot seed).

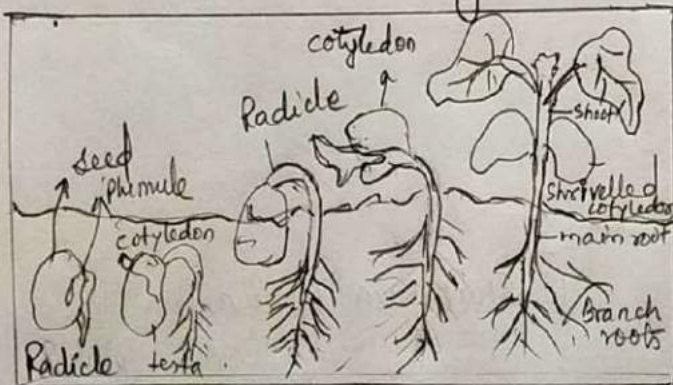
Q5- Define germination. Name the two types of germination. Explain with examples.

The process by which an embryo within the seed becomes active and grows into a young plant is called germination.

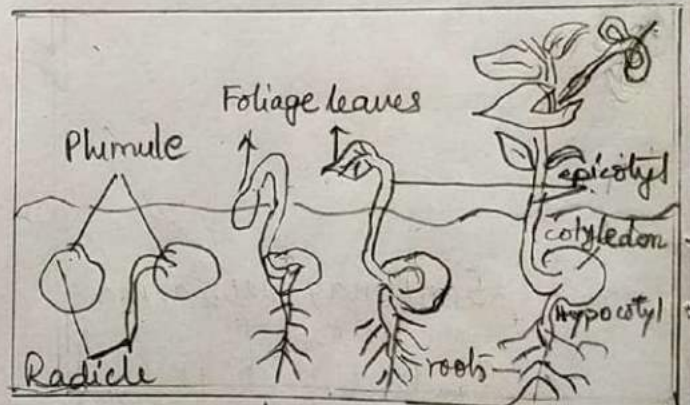
The two types of germination are (i) Epigeal germination and (ii) Hypogeal germination.

Epigeal germination: In this type of germination, cotyledons are pushed above the ground. Hypocotyl elongates faster than epicotyl, hence cotyledons get pulled above. Eg: bean, tamarind, papaya etc

Hypogeal germination: In this type of germination, cotyledons remain in the ground. Epicotyl elongates faster than a hypocotyl, hence cotyledons remain below. Eg: maize, rice, groundnut.



Germination of a bean seed



The pea seeds remain in the soil - example of the hypogeal germination.

36.

What are the three conditions necessary for the germination of seeds.

Ans.

Water, air and favourable temperature are the three necessary conditions for the germination of a seed.

Q7.

Give the main differences between hypogeal and epigeal germination.

Ans.

The main differences between hypogeal and epigeal germination are:-

Epigeal germination	Hypogeal germination
1. Cotyledons are pushed above the ground. 2. Hypocotyl elongates faster than epicotyl, hence cotyledons get pulled above. eg: bean, tamarind, papaya, cucumber	1. Cotyledons remain in the ground. 2. Epicotyl elongates faster than hypocotyl hence cotyledons remain below. eg: maize, rice, groundnut

8. State the location of the following in a flower.

(a) Sepals :- They are found in the outer most part of the flower. The sepals are collectively known as calyx.

(b) Petals :- They are found just above the sepal layer. It forms the second inner whorl and are collectively known as corolla.

(c) Anthers :- They are found at the tip of the stamen of androecium or the male parts of a flower.

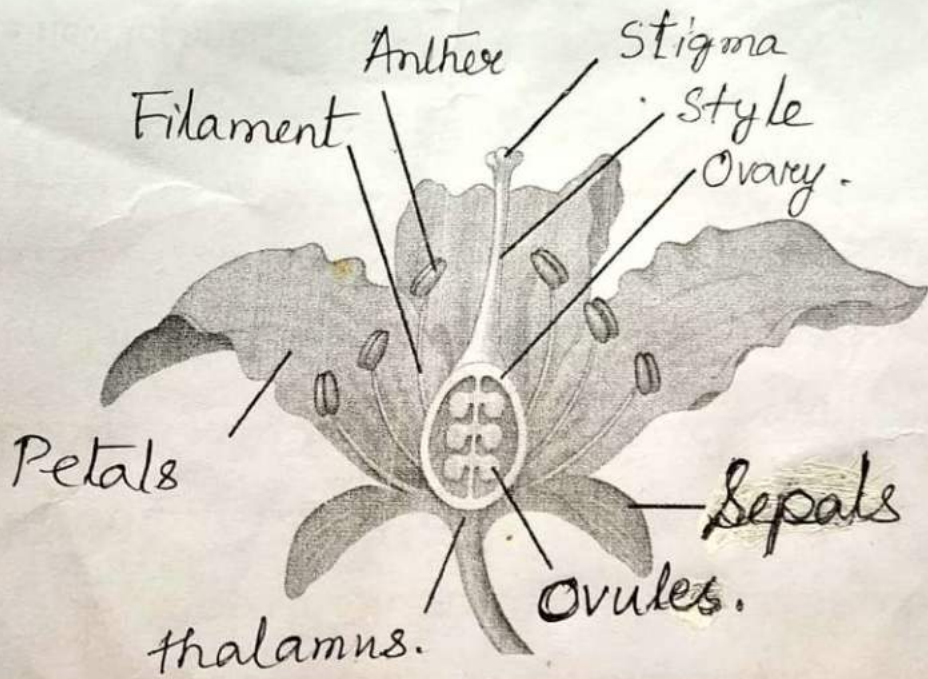
(d) Stigma :- It is found at the tip of the carpel or pistil of gynoecium or the female parts of a flower.



Q10. Give the difference in the function between the following parts.

Ans (a)	Ovary	Ovule.
	It grows into a fruit	It develops into seeds.
(b)	Petals	Sepals
	It makes the flower attractive and hence attract insects for pollination	It encloses the inner parts of the flower to provide necessary protection to the growing bud.
(c)	Filament	Style
	It supports the anther which is the structure that produces pollen.	It transfers the male gametes of the pollen grains into the ovary.
(d)	Pollen grains	Ovule.
	It contains the male-gametes in a plant and facilitates the sexual reproduction in plants	It contains the female gametes and eventually develops into a seed after fertilization.

Given below is the diagram of a typical flower. Label the parts marked by guidelines.



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## Inside questions of ch:2 'The flower'.

Terms for definitions / one word / Fill in the blanks / Differentiation

stalk or pedicel, Thalamus, Calyx, Corolla, sepals, Petals, Androecium, Gynoecium, complete or bisexual flower, Incomplete flower, (unisexual flower), self pollination and cross pollination, Fertilization, Fruit, False fruits, Fleshy and dry fruits, Seed, Endosperm, Aleurone layer, Dicot and Monocot seed.

Question / Answers :-

1. Name the four whorls of a flower and write their functions.
2. What are the two types of flowers? Name them.
3. Name the four agents of cross pollination.
4. Mention the characteristics of an insect and wind pollinated flowers with examples.
5. What is the fate of each part of the flower after fertilization?
6. Why are Apple and Pear called as False fruits?
7. What are the three parts of a Pericarp. Define them.
8. Why do seeds need (i) air and (ii) suitable temperature for germination?

H/W :- Copy the answers and support them with neat labelled diagrams.