

Short Answer Questions:

2. Name the following:

- a) A seed which shows hypogeal germination - Pea
- b) A monocot seed - Maize grain
- c) A dicot seed - Bean Seed
- d) A seed which shows epigeal germination - Bean Seed

3. Differentiate between the following pairs of terms:

a) Radicle and Plumule

Ans - The radicle develops into a root, while the plumule develops into a shoot.

b) Hilum and micropyle

Ans - Hilum is the inner concave side of the seed, where the seed was attached to the fruit wall. Micropyle is a small pore which absorbs and allows water required for germination.

c) Testa and tegmen.

Ans - Testa is the outer exposed part of the seed coat, whereas tegmen is a thin membrane and lies under the testa. It is the inner part of the seed coat.

4. Give two functions of fruit.

Ans- The two functions of fruits are
i) It protects the seed from the unfavorable environmental conditions.
ii) Fruits store food inside them.

5. Match the columns:

| Column A | Column B |
|--------------|---|
| a) Radicle | i) Shoot |
| b) Plumule | ii) Store food material |
| c) Cotyledon | iii) Root |
| d) Testa | iv) Absorb water needed for germination |
| e) Micropyle | v) Protection of seed |

Ans- a-iii, b-i, c-ii, d-v, e-iv

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

Ans- As the radicle emerges out of the seed earlier and develop into a root, it helps in providing water and minerals for further growth of the plumule.

7. State whether the following statements are True or False.

- a) Some seeds have no cotyledons. **False**
- b) Warmth is necessary for germination of seeds. **True**
- c) All seeds have two cotyledons. **False**
- d) Oxygen is necessary for germination of seeds. **True**

8. State one function of the following:

- a) Radicle: It develops into a root.
- b) Cotyledons: It stores the food material which is used by the seedling for growth.
- c) Endosperm: It stores food in the form of starch.
- d) Micropyle: It absorbs and allows the entry of as much as water as is required for germination.

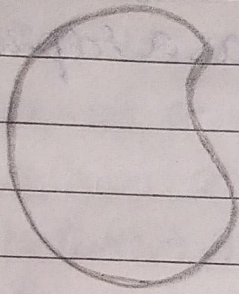
9. The three conditions necessary for germination of seeds are (Tick the correct answer):

Ans- a) Oxygen, suitable temperature and water

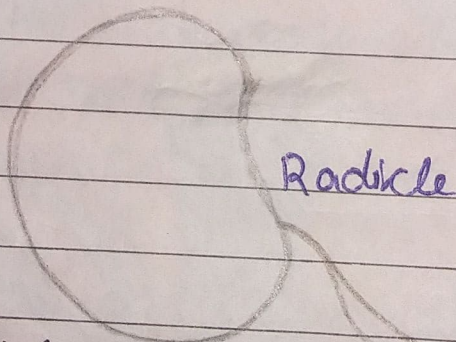
10. Name the part of the seed from which the following are given out:

- a) Root: Radicles
- b) Leaves: Plumule

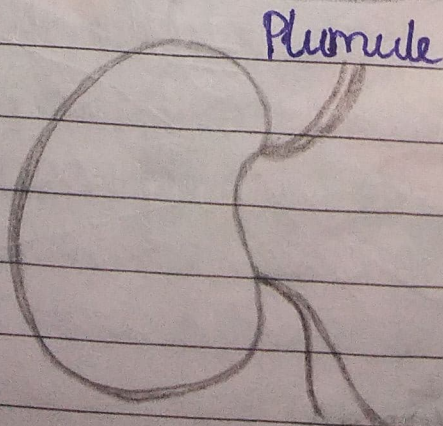
11. In the spaces provided below, draw labelled diagrams to show the three stages in the germination of any seed you have observed.



Complete Seed



Radicle emerged

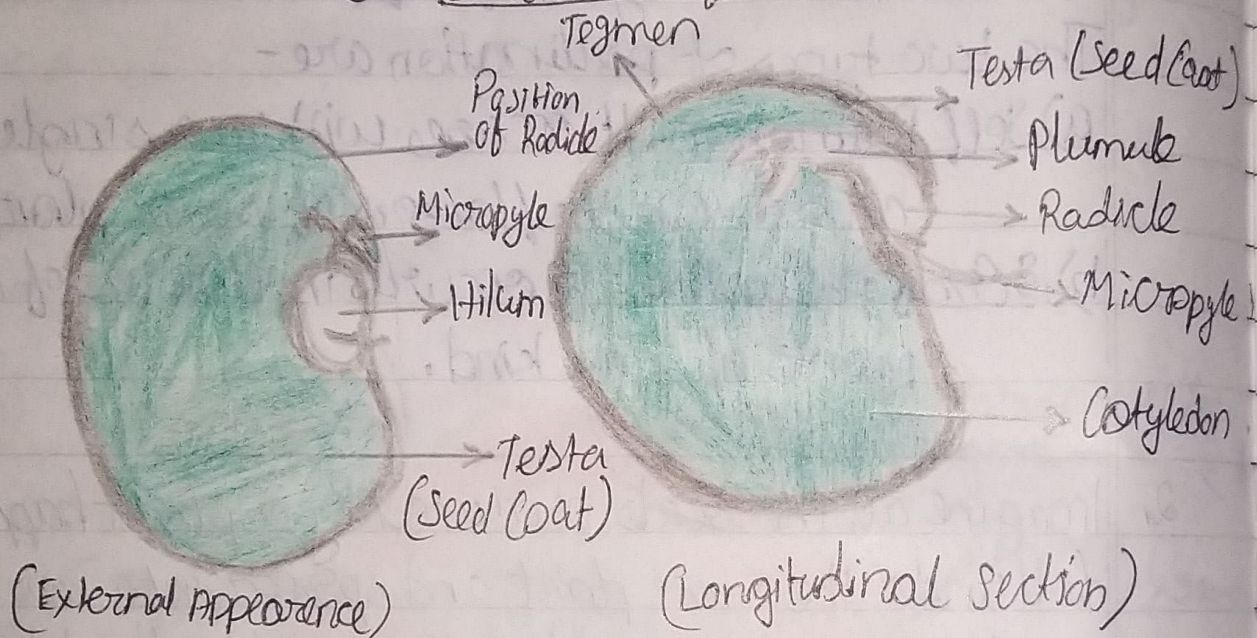


Plumule emerged

4. Within the help of a suitable diagram, describe the structure of a dicot seed.

Ans- The bean seed is an example of a dicot seed, whose diagram is shown below:-

Structure of a dicot seed



The green outermost covering of the seed is called the seed coat. It protects the seed from insects & bacteria as well as from mechanical injury. The seed coat is again made up of two parts. The outer exposed part is called the testa and the inner part is called the tegmen. A scar called the hilum ~~is~~ is present in the inner concave side of the seed. This is the place where the seed is attached to the fruit wall. Above the hilum there is a small pore called micropyle. It absorbs and allows the entry of water

realised for germination.

The seed is made up of two fleshy seed leaves called the cotyledons. They contain stored food material which is used by the seedling for growth.

In between the two cotyledons a delicate embryo is located, which consists of radicle and plumule. The radicle develops into a root and the plumule develops into a shoot.

5. Define germination. Name the two types of germination. Explain with example.

Ans. The process by which the embryo in the seed becomes active in the presence of water, air and suitable temperature and grows into a young plant is called germination. The two types of germination are epigeal germination and hypogeal germination.

- Epigeal germination: The type of germination in which the cotyledons are pushed above the soil is called epigeal germination. The leaves unfold and start preparing food for the growing plant.

Germination of a bean seed is an example of epigeal germination.