

CLASS 8

DATE 05.08.2024

SUBJECT BIOLOGY

TEACHER Nidhi Rana

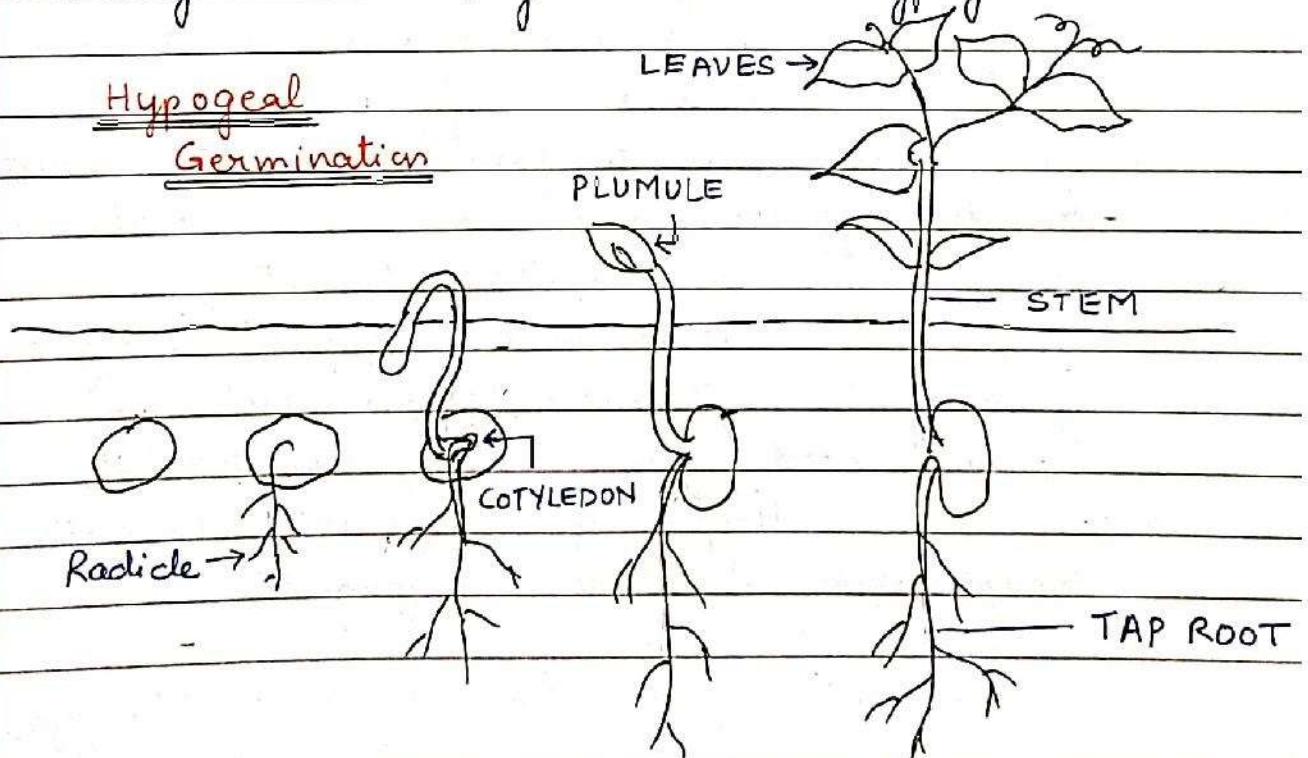
CHAPTER - 6 Seeds - Structure and germinationTypes of germination

Both epicotyl and hypocotyl of seed never elongate together during germination. Based on what elongates earlier and faster two types of germination -

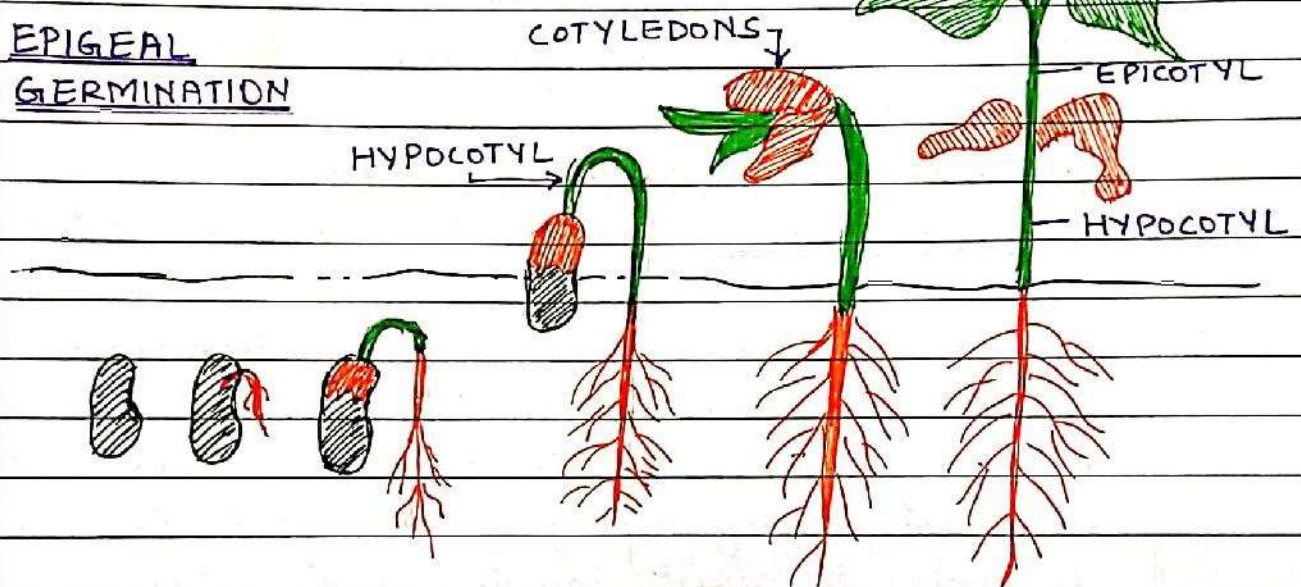
- 1) Hypogeal - If the epicotyl elongates faster and the cotyledons remain underground. Eg. pea, gram.
- 2) Epigeal - If the hypocotyl elongates faster and the cotyledons are pushed above the ground. Eg. Castor, bean.

Germination in common seeds -

- i) Pea seed [Hypogeal] - Seed absorbs water, swells and bursts the seed coat. Radicle and plumule emerge. In the earlier stages of development the plumule is arched, thus protecting the young shoot from injury during its emergence from the soil. Cotyledons keep supplying the food till the seedling is able to exist independently. Cotyledons remain underground. Hence germination is hypogeal.

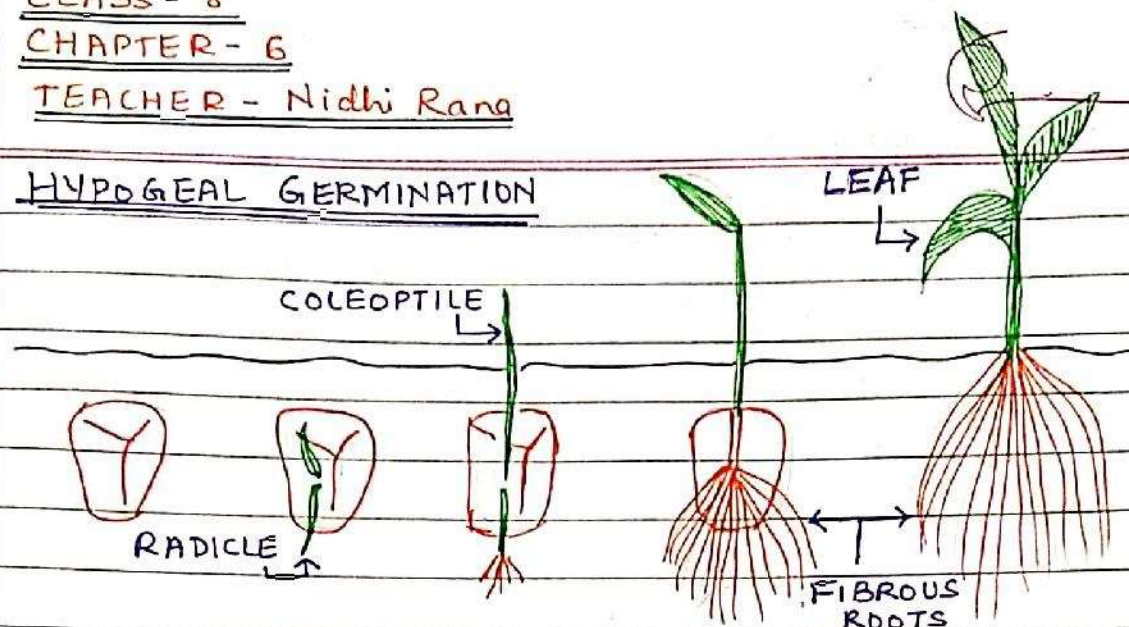


Bean Seed Epigeal Seed absorbs water and swells up. The seed coat breaks and radicle emerges, grows downwards to form root system. The arched hypocotyl grows forming an arch/loop above the soil, it then straightens bringing the cotyledons above the soil. Germination is thus, epigeal. Cotyledons become the first green leaves and soon fall off after the foliage leaves grow.

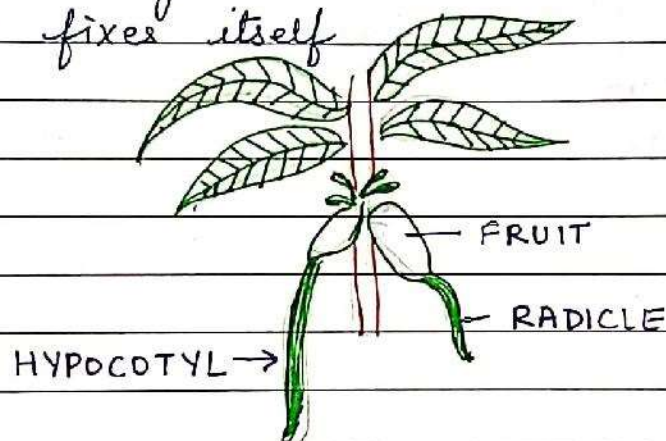
EPIGEALGERMINATION

Maize grain. [Hypogeal] Grain imbibes water and swells up. Radicle comes out through the coleorhiza and the fruit wall and grows downwards to form root system, but it dies off soon. New adventitious roots develop from the base of the stem.

Plumule comes out through coleoptile and grows upwards. The cotyledon (called scutellum) absorbs food from endosperm till it is exhausted. Hypocotyl does not elongate. Germination is thus hypogeal.

HYPOGEAL GERMINATION

Viviparous germination Germination in which seed germinates inside the fruit while it is still attached to the parent plant is vivipary. It is observed in mangrove plants eg. Rhizophora and Sonneratia. After germination plant drops the seedling into the soil which develops roots and fixes itself.

VIVIPARY

Seedling Germination ends with formation of seedling. Seedling is a stage in the growth of a plant from a seed before it has become wholly independent of the food stored in it. Roots of seedling absorb water and minerals from the soil. The leaves start manufacturing food for the young plant that keeps growing and becomes a mature plant and produces flowers and seeds in turn.

CLASS- 8

CHAPTER- 6

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NOTE FOR STUDENTS

Kindly go through the notes as well as the chapter as being discussed in your textbook. It may take multiple readings to grasp the topic clearly.

HOME ASSIGNMENT

Q1 Do the following 'Review Questions' given on Page 54 of your text book in notebook.

D Long Answer Type

Q No - 3, 4, 5, 6 and 7.

Q2 Draw a well labelled diagram of
(i) Hypogeal germination
(ii) Epigeal germination
in your notebooks -

Page 4 [Last Page]