

DON BOSCO SCHOOL – RANCHI.

SUBJECT: BIOLOGY.

CLASS VI A/B/C/D

Lesson - 2. The Flower.

➤ **Multiple Choice Questions.**

1. Put a tick mark against the correct alternative in the following statements:

- a) In a germinating seed, the root develops from – **Radicle.**
- b) In a germinating seed, the shoot develops from – **Plumule.**
- c) Which one of the following is a monocotyledonous seed – **Maize.**
- d) If the cotyledons are pushed above the soil, then such type of germination is called – **Epigeal.**
- e) If the cotyledons remain under the soil, then such type of germination is called – **Hypogeal.**
- f) Pollen is produced in the – **Anther.**
- g) Reproductive whorls of a flower are – **Stamens and carpels.**
- h) Which one of the following is a false fruit – **Apple.**
- i) In a seed, food is generally stored in – **Cotyledons or endosperms.**

➤ **Short Answer Questions.**

1. Draw and label the parts of the bean seed marked 1 to 5 and write their functions.

Answer: Parts and functions are as follows:

- a) **Seed coat** – Seed coat protects the seed from insects, bacteria and mechanical energy.
- b) **Plumule** – Plumule develops into shoot.
- c) **Radicle** – Radicle develops into root.
- d) **Micropyle** – Micropyle absorbs water for germination.
- e) **Cotyledon** – Cotyledon stores food material for the growth of seedling.

2. Name the following.

- a) A seed which shows hypogeal germination.

Answer: Pea, maize, etc.

- b) A monocot seed.

Answer: Maize, wheat, etc.

- c) A dicot seed.

Answer: Bean, pea, gram, etc.

- d) A seed which shows epigeal germination.

Answer: Bean, tamarind, etc.

3. Differentiate between the following pairs of terms.

a) Radicle and Plumule.

Radicle	Plumule
The Radicle develops into the root.	The Plumule develops into the shoot.

b) Hilum and Micropyle.

Hilum	Micropyle
Hilum is a scar on the seed through which seed attaches to the fruit wall.	Micropyle is a small pore present on the seed through which water enters into the seed for germination.

c) Testa and Tegmen.

Testa	Tegmen
Testa is the outer part of the seed coat.	Tegmen is the inner part of the seed coat.

4. Give three functions of a fruit.

Answer: Three functions of a fruit are:

- a) It protects seeds from the unfavourable environmental conditions.
- b) Fruits store food inside them.
- c) Fruits help in dispersing the seeds present inside them and facilitate their germination.

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) Absorbs water for germination
e) Micropyle	v) Protection of seed

Answer:

- a) Radicle - Root
- b) Plumule - Shoot
- c) Cotyledon - Store food material
- d) Testa - Protection of seed
- e) Micropyle - Absorbs water for germination

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

Answer: Radicle emerges out of the seed earlier than Plumule so that it may reach to the water in the soil and absorb water and mineral for the growth of the plant.

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

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

8. State one function of the following.

- a) Radicle – Radicle develops into the root.
b) Cotyledons – Cotyledons store food material for the growth of seedling.
c) Endosperm – Endosperm stores starch.
d) Micropyle – Micropyle absorbs water for the germination of seed.

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

Answer: a) Oxygen, suitable temperature and water.

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

Answer: a) Roots – radicle develops into roots.

b) Leaves – Plumule develops into shoot and shoot bears leaves.

➤ Long Answer Questions.

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

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

There are two types of pollination:

- a) Self pollination – it occurs within a single flower or between flowers of the same plant.
b) Cross pollination – it occurs in flowers on different plants of the same kind.

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.

Answer: Two problems that will be faced by the new plants are:

- a) There will be competition between them for water, nutrients and sunlight.
b) They will also face a shortage of space for the growth of root.

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

Answer: A flower is 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. Fig. 2.1 on page 13.

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

Answer: The structure of dicot seed is protected by a thin, outermost covering called the seed coat. It protects the seed from insects and bacteria as well as from

mechanical injury. The seed coat is made up of two parts. The outer exposed part is called the testa and the inner part is called the tegmen. On the inner concave side of the seed there is a scar called hilum through which the seed attaches to the fruit wall. Above the hilum is a small pore called micropyle which absorbs and allows the entry of water for germination. On removing the testa and the tegmen the seed is made up of two fleshy seed leaves called cotyledons. They contain stored food material which is used by the seedling for growth. In between the two cotyledons the embryo is present which consists of a radicle and a plumule. The radicle develops into a root, while the plumule develops into a shoot.

5. Define germination? Name the two types of germination. Explain with examples.

Answer: 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.

There are two types of germination:

a) Epigeal germination – in epigeal germination the cotyledons are pushed above the soil. Example – bean seed. Fig. 2.11 on page 20.

b) Hypogeal germination – in hypogeal germination the cotyledons remain below the ground. Example – pea seed. Fig. 2.12 on page 20.

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

Answer: The three conditions necessary for the germination of seeds are - Oxygen, suitable temperature and water.

7. Give the main differences between hypogeal germination and epigeal germination.

Answer: The main differences between hypogeal germination and epigeal germination are:

Epigeal germination	Hypogeal germination
a) Cotyledons are pushed above the ground	a) Cotyledons remain in the ground.
b) Hypocotyl elongates faster than epicotyls, hence cotyledons get pulled above.	b) Epicotyl elongates faster than hypocotyl, hence cotyledons remain below.
c) Examples: bean, tamarind, papaya, cucumber.	c) examples: maize, rice, ground nut.

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

- Sepals – present in the outermost whorl, below the petals.
- Petals – present in the second inner whorl, below the ovary.
- Anthers – present in the tip of androecium.
- Stigma – present in the tip of gynoecium.

9. Given in the book is the diagram of a typical flower. Label the parts marked by guidelines.

Answer: You may refer to the diagram marked as Fig. 2.1 on page 13 to complete the diagram.

10. Give the difference in the function of the following parts.

a) Ovary and Ovule

Ovary	Ovule
Ovary gives rise to fruit.	Ovule gives rise to seed.

b) Petal and Sepal

Petal	Sepal
Petal makes the flower attractive and attracts insects for pollination.	Sepal is green in colour which protects growing buds.

c) Filament and Style

Filament	Style
Filament bears anther which produces pollen grains.	Style bears stigma which receives pollen grains.

d) Pollen grains and Ovule

Pollen grains	Ovule
Pollen grains contain male gametes.	Ovule contains female gametes.
