

WORKSHEET 1

CHAPTER 5 – GERMINATION OF SEEDS

A. What are the functions of the following in a seed?

1. Seed coat
2. Micropyle
3. Cotyledons
4. Radicle
5. Plumule

B. Choose the correct option.

1. A dicotyledonous endospermic seed is
a. bean. b. pea. c. castor. d. maize.
2. Scutellum is present in
a. maize. b. bean. c. pea. d. castor.
3. Epigeal germination is seen in
a. pea. b. maize grain. c. bean. d. castor.
4. The optimum temperature for seed germination is
a. 15 °C. b. 40 °C. c. 25 °C. d. 45 °C.
5. Coleorhiza is a protective sheath enclosing the
a. scutellum. b. plumule. c. endosperm. d. radicle.

C. Name the following.

1. The outermost layer of endosperm rich in protein, found in some seeds.
2. Protective sheath enclosing the plumule in maize seed.
3. Oval scar on the concave side of some seeds which represents the point of attachment of ovule to ovary through placenta.
4. The outermost layer of the seed coat.
5. A chemical that absorbs oxygen.

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

1. Epigeal germination is seen in bean seeds.
2. In some mangrove plants, seeds germinate inside the fruit while still attached to parent plant.
3. Maize grain is actually a fruit, not a seed.
4. Oxygen is not essential for germination of seeds.
5. Monocot seeds have small endosperm and large embryo.

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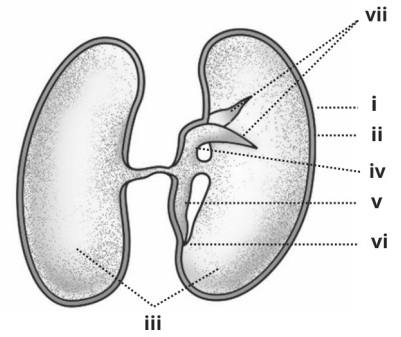
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E. Study the figure given alongside and answer the following questions.

1. Identify the seed.
2. Label parts **i–vii**.
3. State the role of parts **i, ii, iii, vi** and **vii**.
4. What kind of germination occur in such seeds?
5. What are the conditions essential for germination?



ANSWERS

WORKSHEET 1

A. What are the functions of the following in a seed?

1. Seed coat is the covering around the seed that protects the embryo and endosperm.
2. Micropyle is a small opening on the concave side of seed responsible for absorption of water as well as exchange of gases during germination.
3. Cotyledons are the seed leaves that store food for the embryo.
4. Radicle is the part of embryo which develops into root.
5. Plumule is the part of embryo which develops into seed.

B. Choose the correct option.

1. c.
2. a.
3. c.
4. c.
5. d.

C. Name the following.

1. Aleurone layer
2. Coleoptile
3. Hilum
4. Testa
5. Pyrogallic acid

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

1. True
2. True
3. True
4. False
5. False

E. Study the figure given alongside and answer the following questions.

1. Bean seed
2. **i.** Testa **ii.** Tegmen **iii.** Cotyledon **iv.** Epicotyl **v.** Hypocotyl **vi.** Radicle **vii.** Plumule
3. Part **i** (Testa) protects the embryo from mechanical damage and helps to prevent it from drying out.

Part **ii** (Tegmen) also protects the inner parts of the seed.

Part **iii** (Cotyledons) absorb and store nutrients from the endosperm before the seed germinates. At the time of germination, it transports the stored nutrients to the developing seedling.

Part **vi** (Radicle) – Develops into root.

Part **vii** (Plumule) – Develops into shoot.

4. Epigeal germination
5. Conditions necessary for germination are
 - a. water,
 - b. suitable temperature (25°C–35°C) and
 - c. oxygen.