

CBSE TEST PAPER-04
CLASS - XI BIOLOGY
(Morphology of Flowering Plants)

General Instruction:

- All questions are compulsory.
 - Question No. 1 to 3 carry one mark each.
 - Question No. 4 to 7 carry two marks each.
 - Question No. 8 to 10 carry three marks each.
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1. Name the two layers of seed coat.
2. Which family has characteristically a swollen axile placenta.
3. Why root system is poorly developed in aquatic plants.
4. “Flower is a modified shoot.” justify the statement.
5. Distinguish between prop root & stilt roots.
6. What is inflorescence? What are its two types?
7. Draw the floral formula & floral diagram of family solanaceae.
8. Give four types of underground stem & give examples for each.
9. Compare Trailer, runner & sucker.
10. What do you mean by “modification of roots”. Describe some of the modifications of tap roots giving suitable example.

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[ANSWERS]

1. Testa & Tegmen.

2. Solanaceae.

3. Because in aquatic plants there no soil to anchor firmly rather, absorption of water occurs through diffusion hence root system is not completely developed.

4. “Flower is considered as modified shoot” because the internodes in a flower are highly condense & the appendages such as sepals, petals, stamens & carpels are generally large in number like leaves. These whorls arise from a node thus placed closed to one another and envelop the reproductive structures.

5.

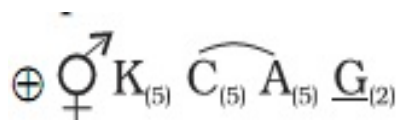
PROP ROOTS	STILT ROOTS
i) arises from horizontal aerial branches of a free stem	i) Arises from basal nodes of stem.
ii) Long & provide support to plant like pillars	ii) Short roots and grows downward obliquely to provide support to stem like rope of tent.
iii) Eg. banyan tree	iii) Maize, Jowar.

6. The arrangement of flowers an the floral axis is called inflorescence. Inflorescence are of two major types:-

a) Racemose inflorescence:- main axis continues to grow & flowers are borne laterally in acropetal succession.

b) Cymose inflorescence: - main axis terminates in a flower hence, is limited in growth, flowers are borne in basipetal order.

7. Floral formula:-



Floral Diagram :-



8. FOUR TYPES OF UNDERGROUND STEMS:-

i) RHIZOME:- The stem is prostrate, thickened & grows horizontally under the soil. Stem is much branched & each branch ends in terminal bud. Adventitious roots arise in profusion eg. fern, water lily, turmeric.

ii) BULB :- Highly condensed & discoidal stem. Terminal bud in the centre produces aerial root that produces flowers. From base of stem adventitious roots develop. Leaves store food material. Terminal bud & scale leaves are present eg. onion garlic.

iii) CORM:- Condensed form of rhizome with auxiliary buds & scale leaves. It is swollen base of underground stem axis. Nodes & internodes are present eg. zimikand, saffron, colocasia.

iv) TUBER:- It grows horizontally & swells at the apex. Adventitious roots arise during sprouting. It has many buds that grow into new plants eg. potato, Halianthus.

9.

TRAILER	RUNNER	SUCKER
i) Semi aerial creeping stem it does not roots at intervals	i) Prostrate, sub-aerial stem. It is green & root at intervals.	i) Underground non green stem.
ii) Does not participate in perennation	ii) Does not participate in perennation.	ii) Helps in perennation.

iii) No help in vegetative propagation.	iii) Helps in vegetative propagation.	iii) Helps in vegetative propagation.
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10. The functions other than normal functions of roots eg. fixation, absorption & conduction are to be carried out by roots. These are called modifications of roots. The modifications of tap roots includes:-

a) FUSIFORM:- This roots is swollen in the middle & tapers at both the ends gradually eg. Raddish.

b) NAPIFORM:- The shape of this root becomes almost spherical but tapers abruptly downward eg. turnip.

c) CONICAL:- The shape becomes cone like eg. carrot.

d) TUBEROUS:- It is a swollen root having no specific shape eg. mirablis, Trichosanthes.