



## BIOLOGY

### BOOKS - PEARSON IIT JEE FOUNDATION

#### Plants- Natures Wonderful Food Factories

##### Example

1. Give reason why soil erosion can be prevented by growing grass in garden.

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2. What is the difference between leaf and leaflet ?

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3. Onion is a condensed plant bearing root, stem and leaves. Justify.



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4. Explain the method of seed dispersal in the following plants.

(a) Cotton and pine

(b) Xanthium and plum

(c) Lotus and coconut



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5. Predict the characteristics of flowers which make them suitable for wind pollination and insect pollination.



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**Very Short Answer Type Questions**

1. The underground part of the plant is known as \_\_\_\_



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2. Roots absorb \_\_\_\_ and \_\_\_\_ from the soil.



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3. Sugarcane possesses \_\_\_\_ roots for additional support.



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4. The roots that form clusters at the base of the stem in grass plants are known as \_\_\_\_ roots.



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5. Root prevents \_\_\_\_ by holding the soil particles together.



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6. Aerial roots arising from branches which give support to the plant are

\_\_\_\_\_



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7. Sweet potato is an example of \_\_\_\_\_



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8. Seeds bearing two cotyledons possess \_\_\_\_\_ root system.



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9. Identify the plant which bears aerial supporting roots.

A. Carrot

B. Bean

C. Maize

D. Mango

**Answer: C**



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**10.** Which part of the plant helps in the upward conduction of water and minerals ?

A. Root

B. Stem

C. Leaves

D. Fruits

**Answer: A**



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11. Identify a plant with tap root system.

- A. Maize
- B. Banana
- C. Grass
- D. Mustard

**Answer: D**



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12. Identify the edible part of carrot.

- A. Taproot
- B. Root
- C. Stem

D. Leaves

**Answer: A**



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**13.** Which among the following plants bears weak stem and climbing roots?

A. Jasmine

B. Lotus

C. Sugarcane

D. Money plant

**Answer: D**



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14. Identify the aerial root system which provides additional support to the plant.

- A. Tap root system
- B. Fibrous root system
- C. Prop root system
- D. Tuberous root system

**Answer: B**



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15. From which part of the germinating seeds does the root develop?

- A. Radicle
- B. Plumule
- C. Cotyledons
- D. Endosperm

**Answer: A**



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**16.** Identify the group of plants which develop respiratory roots.

- A. Cactus
- B. Water hyacinth
- C. Avicennia
- D. Orchids

**Answer: C**



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**17.** The protective outer brown covering of stem and branches is called

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18. \_\_\_\_ buds lead to increase in the height of the plant.



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19. The part that connects roots with leaves and flowers is \_\_\_\_\_



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20. In weak stemmed plants, thread-like structures twine around support and are called \_\_\_\_\_



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21. \_\_\_\_ plants trap insects.



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22. \_\_\_\_ is the broad expanded part of the leaf which helps in photosynthesis.



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23. In \_\_\_\_ leaves, the lamina is cut into small leaflets.



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24. If single node bears more than two leaves, such an arrangement is known as \_\_\_\_



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25. Opuntia is an example of \_\_\_\_ plant.



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26. The place on the plant stem where leaves arise is known as \_\_\_\_



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27. Plants having green tender stems with very few branches are grouped as \_\_\_\_.



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28. Identify the buds of a potato commonly called eyes.

- A. Terminal buds
- B. Axillary buds
- C. Scaly buds
- D. Floral buds

**Answer: B**



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**29.** Which part of the cactus plant is modified into spine?

- A. Stem
- B. Roots
- C. Leaves
- D. Branches

**Answer: C**



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**30.** Identify the function(s) of stem.

- A. Conduction
- B. Photosynthesis
- C. Respiration

D. Both (a) and (b)

**Answer: D**



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**31.** The part which connects the lamina of leaf with stem is

A. Veins

B. Petiole

C. Midrib

D. Leaf base

**Answer: B**



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**32.** Name the venation in which veins form a network.

- A. Reticulate
- B. Parallel
- C. Simple
- D. Compound

**Answer: A**



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**33.** Identify the main organs of respiration in plants.

- A. Root
- B. Stem
- C. Leaves
- D. Branches

**Answer: C**



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**34.** Underground stem modification is observed in which plant ?

- A. Ginger
- B. Onion
- C. Carrot
- D. Beetroot

**Answer: A**



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**35.** Identify the process by which roots pull water from the soil.

- A. Respiration
- B. Transpiration
- C. Photosynthesis

D. Transportation

**Answer: B**



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**36.** The plants that grow in nitrogen deficient soil is

A. Opuntia

B. Vallisneria

C. Neem

D. Venus flytrap

**Answer: D**



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**37.** The opposite arrangement of leaves at nodes is seen in which plant?

A. Mango

B. Sunflower

C. Guava

D. Mustard

**Answer: C**



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**38.** The circular arrangements of parts in a flower is known as \_\_\_\_\_



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**39.** \_\_\_\_\_ is the basal swollen part of a flower in which the floral parts are arranged.



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40. The flower is protected in bud condition by \_\_\_\_



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41. The microscopic body that contains male reproductive cell in plants is

\_\_\_\_\_



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42. \_\_\_\_ flowers contain both stamens and pistil.



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43. After fertilization \_\_\_\_ is formed from ripened ovary.



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44. The fruit is the modified \_\_\_\_ of the flower.



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45. Pollen is received by \_\_\_\_ after pollination.



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46. Which of the following parts is present in a carpel?

A. Pollen grain

B. Thalamus

C. Ovary

D. Anthers

**Answer: C**



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**47.** Identify the third whorl of the flower.

- A. Calyx
- B. Stamens
- C. Corolla
- D. Carpels

**Answer: B**



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**48.** Name the type of flower consisting of all the four whorls.

- A. Vegetative flower
- B. incomplete flower
- C. Complete flower
- D. Ornamental flower

**Answer: C**



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**49.** Identify the product formed after the fusion of two gametes.

A. Embryo

B. Zygote

C. Egg

D. Pollen

**Answer: B**



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**50.** Large amount of pollen is produced in which of the following flowers?

A. Animal pollinated

B. Water pollinated

C. Insect pollinated

D. Wind pollinated

**Answer: D**



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**51. Name the part that connects the stigma to the ovary.**

A. Thalamus

B. Style

C. Pedicel

D. Filament

**Answer: B**



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1. Give the difference between creepers and climbers.



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2. Apart from conduction, roots help in breathing. Discuss.



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3. Roots are modified to perform additional functions. Explain with examples.



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4. 

(a) Identify the parts A, B, C, D, E and E

(b) What are the major functions of A?

(c) List out the vegetative parts from the given figure.

(d) What is the function of C?



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5. Distinguish between rhizome and stem tuber.



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6. Name the process by which exchange of gases and elimination of water take place in plants.

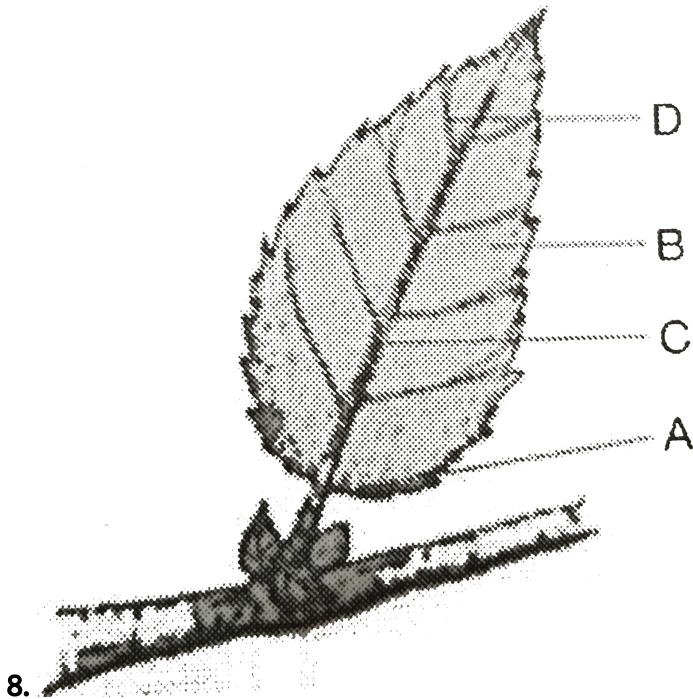


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7. Give reason why the stem is green and fleshy in cactus.



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8.

- (i) Identify the parts of a leaf A, B, C, D.
- (ii) Give the functions of A and B.
- (iii) Identify whether the leaf is simple or compound. Justify.
- (iv) Where are stomata present and what is its function?



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9. Give examples for the following.

- (i) Plant that does not bear leaf.

- (ii) Plant that has variegated leaf.
- (iii) Plant in which leaf is modified into pitcher.
- (iv) Xerophytic plant with spiny leaves.
- (v) Weak stemmed plant bearing tendrils.



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**10.** Leaves of plants are called food factories. Explain.



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**11.** Underground modifications help in storage of food.



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**12.** Pollination helps in reproduction. Discuss.



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13. What are seeds? What do they contain?



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14. Give the functions of fruit.



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15. Mention the methods of seeds dispersal.



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16. Flower is the reproductive part of a plant.



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1. Give reasons why aerial roots of banyan tree are not considered as true roots.



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2. Transpiration is a vital process in plants.



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3. Leaves of certain plants are modified to catch insects.



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4. What are the characteristics of the flowers polli- nated by wind?



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5. Insect pollinated flowers are brightly coloured.



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6. Dry seeds do not germinate.



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7. Self-pollination is not possible in papaya. Give reason.



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8. Botanical Garden in Kolkata has a 200 year old banyan tree. How can you identify the tree from its physical appearance?



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## 1. Match Column I with Column II

Column I	Column II
(A) Sweet potato	(a) Fibrous root system
(B) Rhizophora	(b) Tap root system
(C) Grape vine	(c) Storage root
(D) Bougainvillea	(d) Classified under shrub
(E) Balsam	(e) Mangrove plant
(F) Cereals	(f) Climber

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## 2. Secondary roots, tap roots, lateral roots, root clusters.

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## 3. Carrot, turnip, radish, potato.

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4. Anchoring, absorption, photosynthesis, conduction.



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5. Dahlia, banyan, sugarcane, money plant.



**Watch Video Solution**

6. Stem, root, leaf, flower.



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7. Mango : Tap root :: Cereals : \_\_\_\_



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8. \_\_\_\_ : Tomato :: Tree : Banyan



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9. Spread horizontally : \_\_\_\_ :: Stand upright : Climber



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10. Prop root : Sugarcane :: \_\_\_\_ : Pepper



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11. \_\_\_\_ : Root :: Reproductive part : Fruit



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**12.** State True or False. Also state reason.

Primary and secondary roots are present in fibrous root system .



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**13.** Pneumatophores are supporting roots.



**Watch Video Solution**

**14.** After seed germination radicle gives rise to root system.



**Watch Video Solution**

**15.** Roots are help in upward conduction.



**Watch Video Solution**

**16.** Distinguish between parasitic roots and epiphytic roots and give examples.



**Watch Video Solution**

**17.** Draw a comparison between the tendrils in cucumber and garden pea.



**Watch Video Solution**

**18.** Give reason why bean plants are essential in crop rotation system.



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19. Match Column I with Column II.

Column I	Column II
(A) Petiole	(a) Transpiration
(B) Lamina	(b) Absorption
(C) Stomata	(c) Protection
(D) Bark	(d) Photosynthesis
(E) Roots	(e) Connection



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20. Nodes, internodes, bark, petiole.



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21. Hibiscus leaf, neem leaf, mango leaf, lotus leaf.



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22. Turmeric, ginger, corn, onion.



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23. Nepenthes, utricularia, drosera, gulmohar.



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24. Radicle : Root :: \_\_\_\_ : Shoot



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25. Photosynthesis : Leaf:: \_\_\_\_ : Flower



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26. \_\_\_\_ : Hibiscus :: Whorled : Neriurn



[Watch Video Solution](#)

27. \_\_\_\_ : Potato :: Rhizome : Ginger



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28. Spines : Opuntia :: \_\_\_\_ : Sweet pea



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29. Grasses : Parallel venation :: Bean : \_\_\_\_



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30. Leaves of plants are called food factories.



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31. Plants with parallel venation bear tap root.



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**32.** Loss of water in the form of droplets is called transpiration.



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**33.** Leaflets are present in simple leaves.



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**34.** Arrangement of leaves on the stem with one leaf arising from each node is known as alternate arrangement.



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**35.** Photosynthesis takes place in the absence of sunlight.



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**36.** The outermost dry layer of onion is scaly leaf.



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**37.** Nodes are present in root system.



**Watch Video Solution**

**38.** Distinguish between root system and shoot system.



**Watch Video Solution**

**39.** Distinguish between the following.

(a) Alternate and opposite leaf arrangements



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**40.** Ovary, anther, filament, pollen grains.



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**41.** Pick the odd one out.

Sepals, petals, anthers, flower.



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**42.** Papaya flower, guava flower, apple flower, orange flower.



**Watch Video Solution**

**43.** Paddy, wheat, maize, bean .



**Watch Video Solution**

**44.** Anther : \_\_\_\_ :: Pistil : Ovary



**Watch Video Solution**

**45.** Tomato : Fleshy fruit :: \_\_\_\_ : Dry fruits



**Watch Video Solution**

**46.** Ovary : fruits :: \_\_\_\_ : Seeds



**Watch Video Solution**

**47.** \_\_\_\_ : Root system :: Plumule : Shoot system



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**48.** Flowers that do not bear stalk are called sessile flowers.



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**49.** Axillary buds help in the sexual reproduction of the plant.



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**50.** In plants after fertilization, the ovary develops into fruits and ovules develop into seeds.



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**51.** Wind pollinated flowers produce nectar and are brightly coloured.



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**52.** State true or false.

Ovules are found in stigma.



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**53.** Explain the process of nutrition in pitcher plant.



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**54.** What is the fate of the following organs of a flower after fertilization?

(a) Sepals (b) Petals

(c) Stamens (d) Ovary

(e) Ovule



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**55.** Onion shows both stem modification and leaf modification. Explain.



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**56.** Distinguish between the following. (a) Reticulate and parallel venation



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**57.** Distinguish between tap root system and fibrous root system and give examples.



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**58.** Define the following terms.

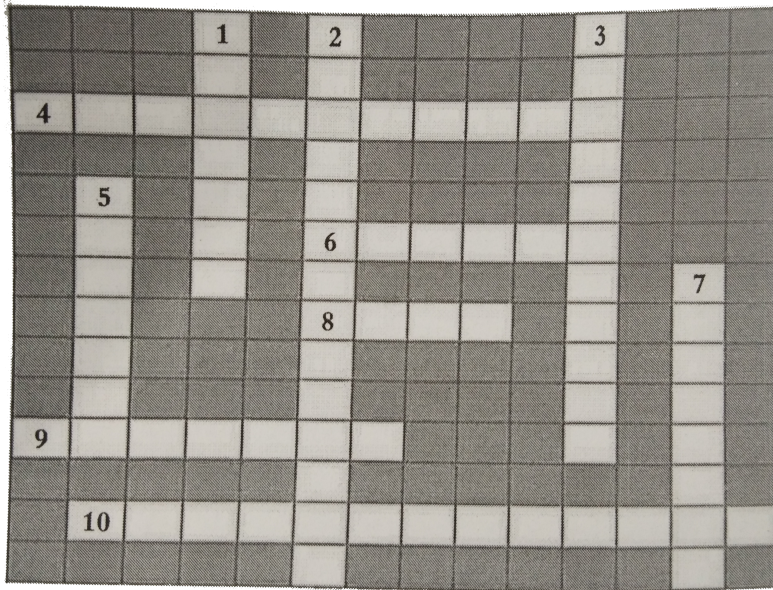
(a) Venation (b) Germination

(c) Pollination (d ) Fertilization



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**Crossword**



1.

Across

4. Green pigment in leaf
6. Male part of the flower
8. Area of the stem where leaves arise
9. Stalk of a flower
10. Fusion of gametes

Down

1. Tiny pores present on leaf
2. Preparation of food in plants
3. Transfer of pollen grains
5. Shoot part of a baby plant
7. Arrangement of veins in the l



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