



BIOLOGY

BOOKS - PEARSON IIT JEE

FOUNDATION

PLANTS-NATURE'S 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.

Cotton and pine



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

Xanthium and plum



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

Lotus and coconut



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



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**TEST YOUR CONCEPTS (VERY SHORT ANSWER
TYPE QUESTIONS) (Fill in the blanks.)**

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. The protective outer brown covering of stem and branches is called_____



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10. _____ buds lead to increase in the height of the plant.



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11. The part that connects roots with leaves and flowers is_____



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12. In weak stemmed plants, thread-like structures twine around support and are called_____



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13. _____ plants trap insects.



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14. _____ is the broad expanded part of the leaf which helps in photosynthesis.



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15. In _____ leaves, the lamina is cut into small leaflets.



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16. If single node bears more than two leaves, such an arrangement is known as ____



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17. Opuntia is an example of _____ plant.



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18. The part of a stem arises is known as :



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19. Plants having green tender stems with very few branches are grouped as _____



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20. The circular arrangements of parts in a flower is known as _____



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21. _____ is the basal swollen part of a flower in which the floral parts are arranged.



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



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23. _____ flowers contain both stamens and pistil.



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24. After fertilization _____ is formed from ripened ovary.



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25. The fruit is the modified _____ of the flower.



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26. Pollen is received by _____ after pollination.



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**TEST YOUR CONCEPTS (VERY SHORT ANSWER
TYPE QUESTIONS) (Select the correct alternative**

from the given options.)

1. Identify the plant which bears aerial supporting roots.

A. Carrot

B. Bean

C. Maize

D. Mango

Answer: c



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2. 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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3. Identify a plant with tap root system.

A. Maize

B. Banana

C. Grass

D. Mustard

Answer: d



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4. Identify the edible part of carrot.

A. Taproot

B. Root

C. Stem

D. Leaves

Answer: a



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5. 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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6. 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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7. 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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8. Identify the group of plants which develop respira- tory roots.

A. Cactus

B. Water hyacinth

C. Avicennia

D. Orchids

Answer: c



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**TEST YOUR CONCEPTS (VERY SHORT ANSWER
TYPE QUESTIONS) (Select the correct alternative
from the given options.)**

1. Eye of potato is

A. Terminal buds

B. Axillary buds

C. Scaly buds

D. Floral buds

Answer: B



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

A. Stem

B. Roots

C. Leaves

D. Branches

Answer: C



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3. Identify the function(s) of stem.

A. Conduction

B. Photosynthesis

C. Respiration

D. Both (a) and (b)

Answer: D



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4. 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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5. Name the venation in which veins form a network.

A. Reticulate

B. Parallel

C. Simple

D. Compound

Answer: A



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6. Identify the main organs of respiration in plants.

A. Root

B. Stem

C. Leaves

D. Branches

Answer: C



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7. Underground stem modification is observed in which plant ?

A. Ginger

B. Onion

C. Carrot

D. Beetroot

Answer: A



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8. 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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9. The plants that grow in nitrogen deficient soil is

A. Opuntia

B. Vallisneria

C. Neem

D. Venus flytrap

Answer: D



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10. 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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**TEST YOUR CONCEPTS (VERY SHORT ANSWER
TYPE QUESTIONS)** (Select the correct alternative
from the given options)

1. 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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2. Identify the third whorl of the flower.

A. Calyx

B. Stamens

C. Corolla

D. Carpels

Answer: B



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3. 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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4. Identify the product formed after the fusion of two gametes.

A. Embryo

B. Zygote

C. Egg

D. Pollen

Answer: B



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5. 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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6. Name the part that connects the stigma to the ovary.

A. Thalamus

B. Style

C. Pedicel

D. Filament

Answer: B



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TEST YOUR CONCEPTS (SHORT ANSWER TYPE QUESTIONS)

1. Give the difference between creepers and climbers.



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

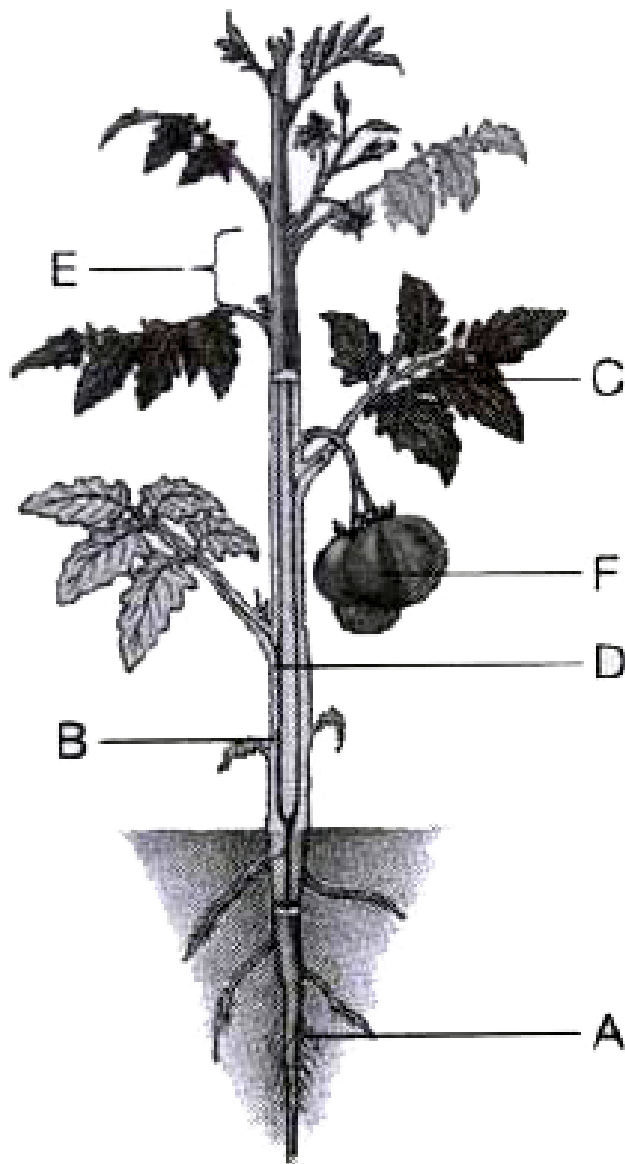


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3. Roots are modified to perform additional functions. Explain with examples.



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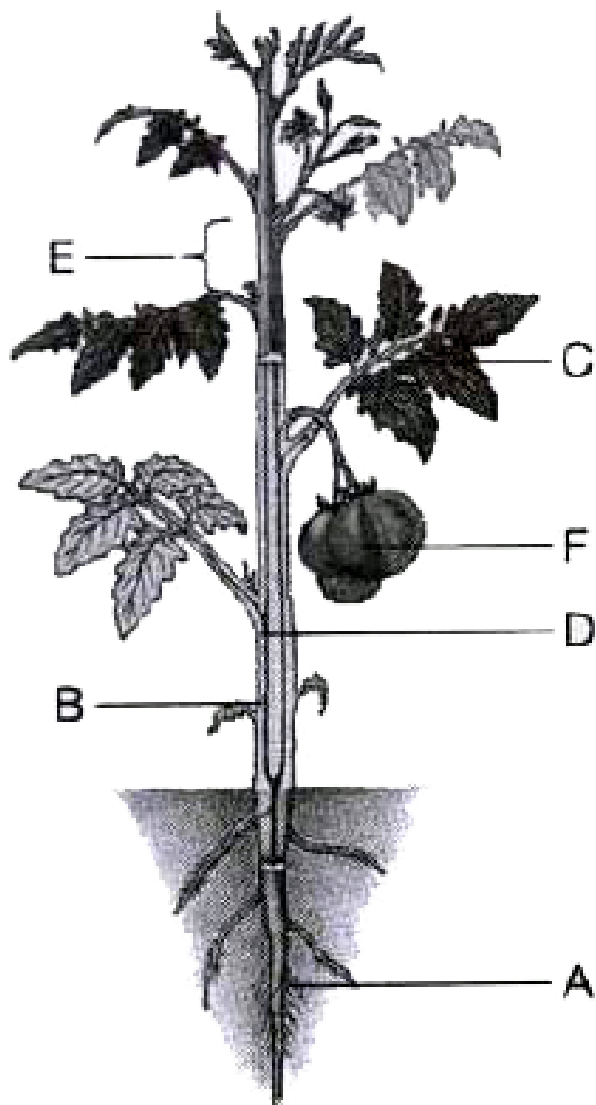


4.

Identify the parts A, B, C, D, E and F



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5.

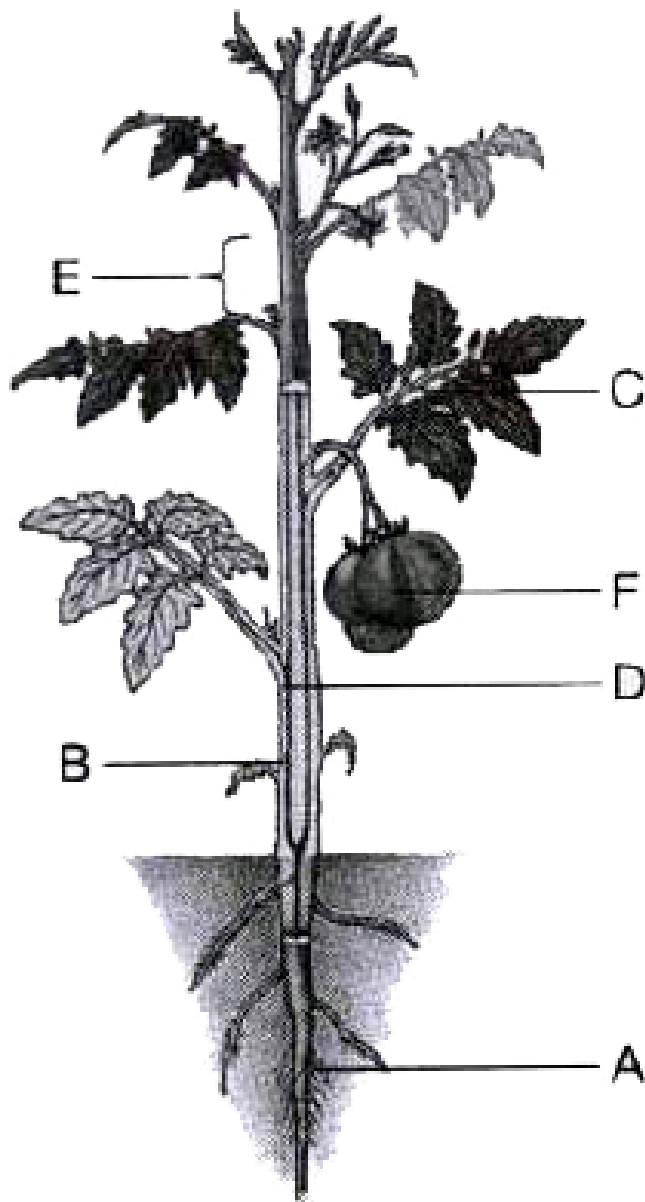
What are the major functions of A?



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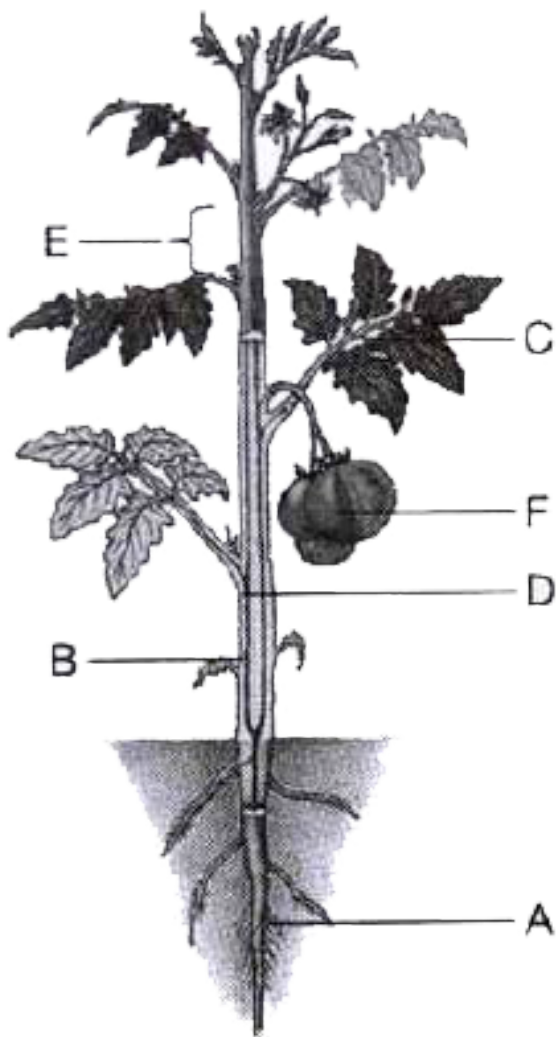
6.

List out the vegetative parts from the given

figure.



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7.

What is the function of C?



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8. Distinguish between rhizome and stem tuber.



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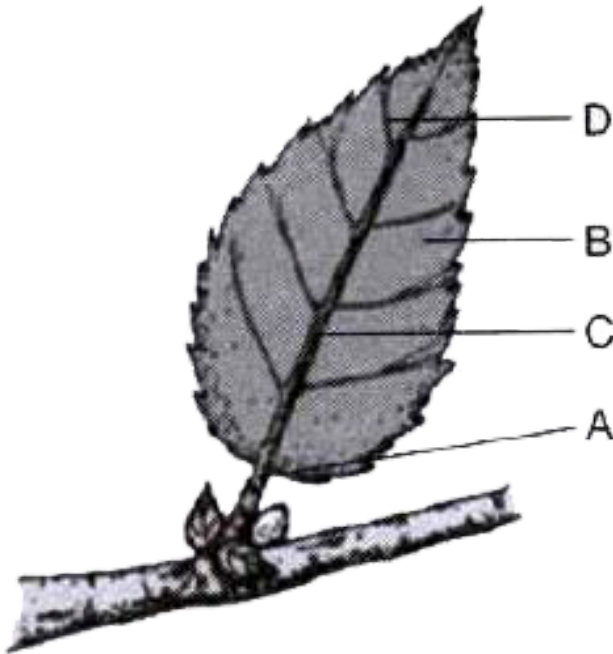
9. Name the process by which exchange of gases and elimination of water take place in plants.



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

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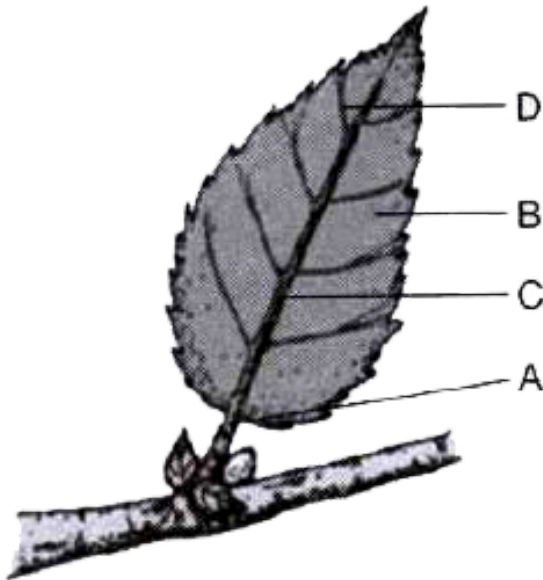


11.

Identify the parts of a leaf A, B, C, D.



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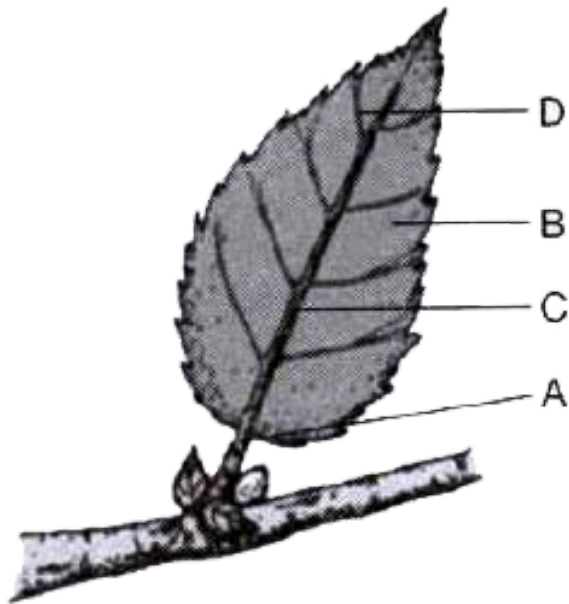


12.

Give the functions of A and B.



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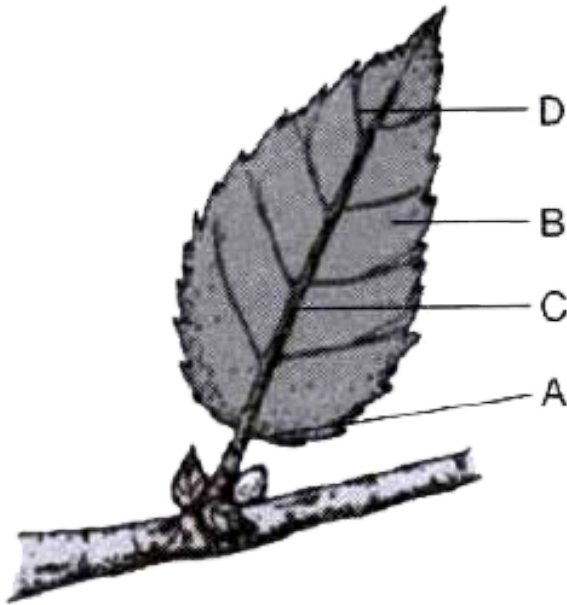


13.

Identify whether the leaf is simple or compound. Justify.



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14.

Where are stomata present and what is its function?



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15. Give examples for the following.

Plant that does not bear leaf.



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16. Give examples for the following.

Plant that has variegated leaf



Watch Video Solution

17. Give examples for the following.

Plant in which leaf is modified into pitcher.



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18. Give examples for the following.

Xerophytic plant with spiny leaves.



Watch Video Solution

19. Give examples for the following.

Weak stemmed plant bearing tendrils.



Watch Video Solution

20. Give scientific reasons.

Leaves of plants are called food factories.



Watch Video Solution

21. Give scientific reasons.

Underground modifications help in storage of food.



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22. Pollination helps in reproduction. Discuss.



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23. What are seeds? What do they contain?



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24. Give the functions of fruit.



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25. Mention the methods of seeds dispersal.

Direction for question



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26. Give scientific reasons.

Flower is the reproductive part of a plant.



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CONCEPT APPLICATION

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 eat insects



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4. What are the characteristics of the flowers pollinated 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. Distinguish between parasitic roots and epiphytic roots and give examples.



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



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



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5. 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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6. Find the co-related terms.

Radicle : Root :: _____ : Shoot



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7. Find the co-related terms.

Photosynthesis : Leaf :: _____ : Flower



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8. Find the co-related terms.

_____ : Hibiscus :: Whorled: Nerium



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9. Find the co-related terms.

_____ : Potato :: Rhizome : Ginger



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10. Find the co-related terms.

Spines : Opuntia :: _____ : Sweet pea



View Text Solution

11. Find the co-related terms.

Grasses : Parallel venation :: Bean : _____



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12. Distinguish between root system and shoot system.



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13. Distinguish between the following.

(a) Alternate and opposite leaf arrangements



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14. Explain the process of nutrition in pitcher plant.



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15. 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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16. Onion shows both stem modification and leaf modification. Explain.



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17. Distinguish between the following.

(a) Reticulate and parallel venation



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18. Distinguish between tap root system and fibrous root system and give examples.



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19. Define venation.



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20. Define the following terms.

Germination



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21. Define the following terms.

Pollination



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22. Define the following terms.

Fertilization



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ASSESSMENT TEST (TEST 1) (Pick the odd one out)

1. Secondary roots, tap roots, lateral roots,
root clusters.



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2. Carrot, turnip, radish, potato.



View Text Solution

3. Anchoring, absorption, photosynthesis, conduction.



View Text Solution

4. Dahlia, banyan, sugarcane, money plant.



View Text Solution

5. Stem, root, leaf, flower.



View Text Solution

ASSESSMENT TEST (TEST 1) (Find the co-related terms.)

1. Mango: Tap root :: Cereals : _____



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2. _____ : Tomato :: Tree : Banyan



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3. Spread horizontally : _____ :: Stand upright :
Climber



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4. Prop root : Sugarcane :: _____ : Pepper



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5. _____ : Root :: Reproductive part : Fruit



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6. Anther : _____ :: Pistil : Ovary



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7. Tomato : Fleshy fruit :: _____ : Dry fruits



View Text Solution

8. Ovary : fruits :: _____ : Seeds



View Text Solution

9. _____ : Root system :: Plumule : Shoot system



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ASSESSMENT TEST (TEST 1) (State whether true or false.)

1. Primary and secondary roots are present in fibrous root system.



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2. Pneumatophores are supporting roots.



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3. After seed germination radicle gives rise to root system.



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4. Roots are help in upward conduction.



[View Text Solution](#)

5. Leaves of plants are called food factories.



[View Text Solution](#)

6. Plants with parallel venation bear tap root.



[View Text Solution](#)

7. Loss of water in the form of droplets is called transpiration.



[View Text Solution](#)

8. Leaflets are present in simple leaves.



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



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10. Photosynthesis takes place in the absence of sunlight.



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11. The outermost dry layer of onion is scaly leaf.



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12. Nodes are present in root system.



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13. Flowers that do not bear stalk are called sessile flowers.



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14. Axillary buds help in the sexual reproduction of the plant.



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



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16. Wind pollinated flowers produce nectar and are brightly coloured



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17. Ovules are found in stigma.



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ASSESSMENT TEST (TEST 1) (Pick the odd one out.)

1. Nodes, internodes, bark, petiole.



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2. Hibiscus leaf, neem leaf, mango leaf, lotus leaf.



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3. Turmeric, ginger, corn, onion.



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4. *Nepenthes*, *utricularia*, *drosera*, gulmohar.



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5. Ovary, anther, filament, pollen grains.



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6. Sepals, petals, anthers, flower.



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7. Papaya flower, guava flower, apple flower,
orange flower.



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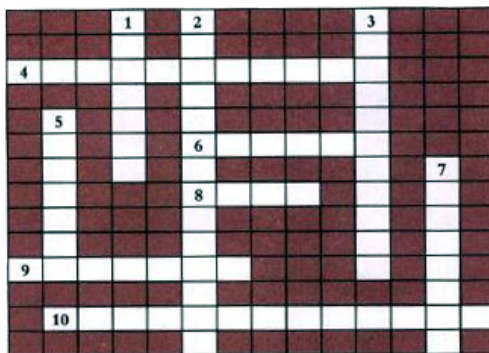
8. Paddy, wheat, maize, bean.



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CROSSWORD

CROSSWORD



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 leaf

1.



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