



# **BIOLOGY**

# BOOKS - MODERN PUBLISHERS BIOLOGY (HINGLISH)

# MORPHOLOGY OF FLOWERING PLANTS

Practice Problem Morphology Of Plants

 A root system is extensively branched and bears a very large number of delicate root tips.
 How do the root tips manage to penetrate the hard core of soil?



**2.** Define buds, nodes and internodes. What is the difference between the axillary bud and terminal bud?



3. How do the buds protect themselves?



4. Roots developed from parts of the plant

other than radicle are called

5. Supply the appropriate scientific term for

Shapeless swollen root occurring singly.

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**6.** Supply the appropriate scientific term for Pillar like roots appearing from large horizontal branches.

7. Supply the appropriate scientific term for

Naked flowering stem arising from ground without leaves.



8. Supply the appropriate scientific term for

Leaf with single lamina and which is not

completely divided to form leaflets.



**9.** Supply the appropriate scientific term for Underground stem growing vertically, rarely branched and spherical or oval in form.

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10. Supply the appropriate scientific term for

Runner with short internodes and each node

bearing a rosette of leaves and tuft of roots.

**11.** Supply the appropriate scientific term for

Roots are swollen, become spindle shaped and

found singly

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**12.** Supply the appropriate scientific term for

Veins irregularly distributed in the lamina

forming a network.

**13.** Supply the appropriate scientific term for

The arrangement of the leaves on the stem.



14. Differentiate between herbaceous and

woody stems.

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**Practice Problem Families** 

**1.** Describe the sequence of terms, when you are going to describe the gynoecium of any problem.



2. Write about androecium in wheat.

**3.** Compare the number of stamens, free or fused, number of carpels, free or fused, placentation and number of locules in Liliaceae, Solanaceae and Papilionaceae.

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4. Write the floral formulae of: (a) Petunia (b)

Lathyrus (c) Solanum nigrum

View Text Solution

 What is meant by modification of root?
 What type of modification of root is found in the

(a) Banyan tree

(b) Turnip

(c) Mangrove trees



2. Justify the following statements on the basis

of external features

(i) Underground parts of a plant are not

always roots

(ii) Flower is a modified shoot

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3. How is pinnately compound leaf different

from palmately compound leaf?

4. Explain with suitable examples the different

types of phyllotaxy?

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5. Define the following terms:

(a) Aestivation

(b) Placentation

(c) Actinomorphic

(d) Zygomorphic

(e) Superior ovary

(f) Perigynous flower

(g) Epipetalous Stamen



- 6. Differentiate between
- (a) Racemose and cymose inflorescence
- (b) Fibrous roots and adventitious roots
- (c) Apocarpous and syncarpous ovary

7. Draw the labelled diagram of the following :

(i) gram seed (ii) V.S. of maize seed.

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**8.** Describe modifications of stem with suitable examples.



9. Describe the various types of placentations

found in flowering plants.

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**10.** What is flower? Describe the parts of a

typical angiospermic flower.



11. How do the various leaf modifications help

plants?

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**12.** Define the term inflorescence. Explain the basis for the different types of inflorescence in flowering plants.

**13.** Write the floral formula of an actinomorphic bisexual, hypogynous flower with five united sepals, five free petals. Five free stamens and two united carpals with superior ovary and axile placentation.

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**14.** Describe the arrangement of floral members in relation to their insertion on the thalamus?



## Ncert File Ncert Exemplar Problem A Multiple Choice Questions

**1.** Rearrange the following zones as seen in the root in vertical section and choose the correct option.

A.Root hair zone, B.Zone of meristems

C.Root cap zone , D.Zone of maturation

E.Zone of elongation

A. C, B, E, A, D

#### B. A, B, C, D, E

### C. D, E, A, C, B

D. E, D, C, B, A

### Answer: A

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**2.** In an inflorescence where flowers are borne laterally in an acropetal succession,the position of the youngest floral bud shall be

A. Proximal

B. Distal

C. Intercalary

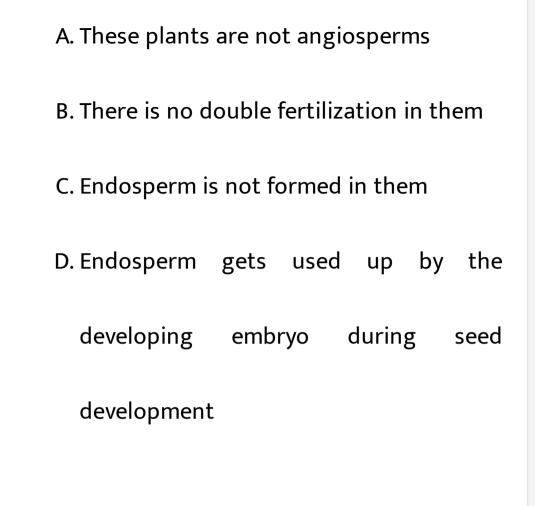
D. Any where

Answer: B

Watch Video Solution

3. The mature seeds of plants such as gram

and peas, possess no endosperm, because



#### Answer: A

4. Roots developed from parts of the plant

other than radicle are called

A. Tap roots

B. Fibrous roots

C. Adventitious roots

D. Nodular roots

Answer: A

5. Venation is a term used to describe the

pattern of arrangement of

A. Floral organs

B. Flower in inflorescence

C. Veins and veinlets in a lamina

D. All of them

Answer: C

6. Endosperm, a product of double fertilization

in angiosperms is absent in the seeds of

A. Gram

**B.** Orchids

C. Maize

D. Castor

Answer: C

7. Many pulses of daily use belong to one of

the families below (tick the correct answer)

A. Solanaceae

B. Fabaceae

C. Liliaceae

D. Poaceae

Answer: D

8. The placenta is attached to the developing

seed near the

A. Testa

B. Hilum

C. Micropyle

D. Chalaza

Answer: A

9. Which of the following plants is used to

extract the blue dye ?

A. Trifolium

B. Indigofera

C. Lupin

D. Cassia

Answer: B

**1.** Roots obtain oxgyen from air soil for respiration, In the absence or deficiency of  $O_2$ , root growth is restricted or completely stopped. How do the plants growing in marsh lands or swamps obtain their  $O_2$  required for root respiration ?



2. Write floral formula for a flower which is bisexual, actinomorphic sepals five, twisted aestivation, petals five valvate aestivation, stamens six, ovary tricarpellary, syncarpous , superior, trilocular with axile placentation.

**O** Watch Video Solution

**3.** In Opuntia, the stem is modified into a flattened green structure of perform the function of leaves, (i.e., photosynthesis). Cite

some other example of modifications of plant

parts for the purpose of photosynthesis.



**4.** In swampy areas like the sunderbans in West Bengal, plants bear special kind of roots called ......



5. In aquatic plants like Pistia and Eichhornia,

leaves and roots are found near......

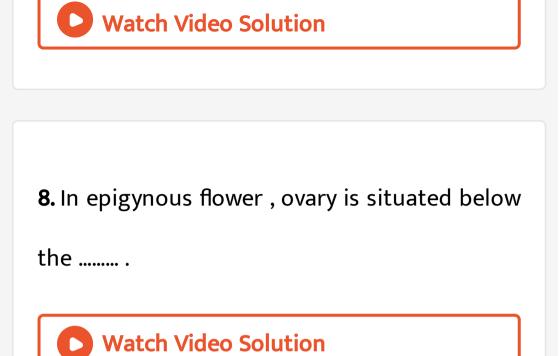


6. Reticulate and parallel venation are the

characteristic of ..... and ...... Respectively.



7. Which parts of ginger and onion are edible?



### 9. Add the missing floral organ of the given

floral floral formula of Fabaceae:



10. Name the body part modified for food storage in the Carrot

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11. Name the body part modified for food

storage in the

Colocasia \_\_\_\_\_

<b>12.</b> Name the body part	modified	for food
storage in the		
Sweet potato		
Watch Video Solution		

**13.** Name the body part modified for food

storage in the

Asparagus\_\_\_\_\_

14. Name the body part modified for food storage in the Radish\_\_\_\_\_ Watch Video Solution 15. Name the body part modified for food storage in the

Potato\_\_\_\_\_

16. Name the body part modified for food

storage in the

Dahlia\_\_\_\_\_

Watch Video Solution

17. Name the body part modified for food

storage in the

Turmeric\_\_\_\_\_

18. Name the body part modified for food	
storage in the	
Gladiolus	
<b>O</b> Watch Video Solution	

**19.** Name the body part modified for food storage in the

Ginger\_\_\_\_\_

20. Name the body part modified for food
storage in the
Portulaca\_\_\_\_\_
Watch Video Solution

Ncert File Ncert Exemplar Problem C Short Answer Type Questions

**1.** Give two examples of roots that develop from different parts of the angiospermic plant other than the radicle.



2. The essential functions of roots are anchorage and absorption of water and minerals in the terrestrial plant. What functions are associated with the roots of aquatic plants. How are roots of aquatic plants and terrestrial plants different?

3. Draw diagrams of a typical monocot and

dicot leaves to show their venation pattern.

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**4.** A typical angiosperm flower consists of four floral parts. Give the names of the floral parts and their arrangements sequentially.



**5.** Given below are a few floral formulae of some well known plants. Draw floral diagrams from these formulae.







# **6.** Reticulate venation is found in dicot leaves while in monocot leaves venation is of parallel

type . Biology being a Science of exceptions ,

find out any exception to this generalisation.



7. You have heard about several insectivorous plants that feed on insects. Nepenthes or the pitcher plant is one such example, which usually gorws in shallow water or in marsh lands. What part of the plant is modified into a pitcher ? How does this modification help the plant for food even through it can

photosynthesise like any other green plant?



**8.** Mango and coconut are'drupe' type of fruits.

In mango fleshy mesocarp is edible. What is

the edible part of coconut? What does milk of

tender coconut represent?

9. How can you differentiated between free

central and axile placentation ?

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**10.** Tendrils are found in the following plants . Identify whether they are stem tendrils of leaf tendrils.

(a) Cucumber (b) Peas

(c) Pumpkins (d) Grapevine

(e) Watermelon





11. What is maize grain usually called as a fruit

and not a seed ?

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12. Tendrils of grapevines are homologous to

the tendril of pumpkins, but are analogous to

that of pea. Justify the above statement.

13. Rhizome of ginger is like the roots of other

plants that grows underground. Despite this

fact ginger is a stem and not a root . Justify .



### 14. Differentiate between

(a) Bract and Bracteole (b) Pulvinus and

petiole (c) Pedicel and peduncle

(d) Spike and spadix (e) Stamen and staminode

(f) Pollen and pollinium





# Ncert File Ncert Exemplar Problem D Long Answer Type Questions

 Describe various stem modifications associated with food storage climbing and protection.



2. Stolon, offset and rhizome are different forms of stem modifications.How can these modified forms of stem be distinguished from each other ?

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3. The mode of arrangement of sepals or petals in a floral bud is known as aestivation.
Draw the various types of aestivation possible for a typical pentamerous flower.



**4.** The arrangement of ovules within the ovary is known as placentation. What does the term placenta refer to ? Name and draw various types of placentations in the flower as seen in T.S. or V.S.

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5. Sunflower is not a flower. Explain.

**6.** How do you distinguish between hypogeal germination and epigeal germination ? What is the role of cotyledon (s) and the endosperm in the germination of seeds ?



7. Seeds of some plants germinate immdiately after shedding from the plants while in other plants they require a period of rest before germination. The later phenomena is called as

dormancy. Give the reasons for seed sormancy

and some methods to break it.

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Higher Order Thinking Skill Very Short Answer Questions

**1.** What are twiners?

2. What is thorn? How can you tell it is

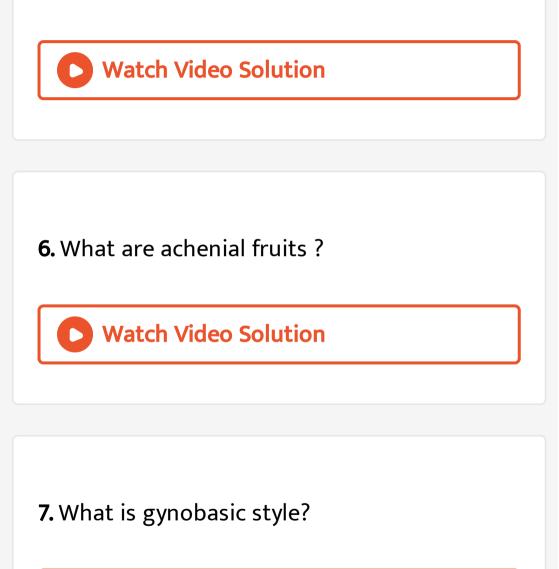
modified stem?

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<b>3.</b> Coleorhiza is

Watch Video Solution

4. What is pepo? Give one example.

5. Name the smallest angiospermic plant.



**8.** What do you mean by syngenesious condition?

**Watch Video Solution** 

## 9. Tigellum is

Watch Video Solution

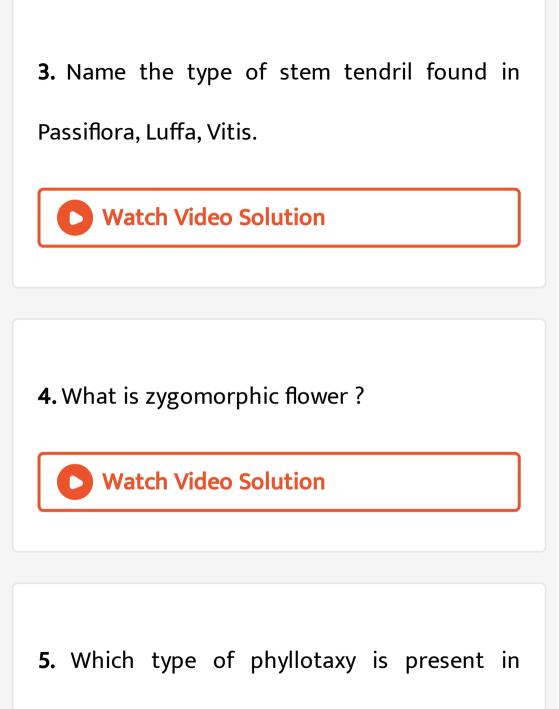
Higher Order Thinking Skill Short Answer Questions 1. Name the inflorescence where it is found

hanging ?

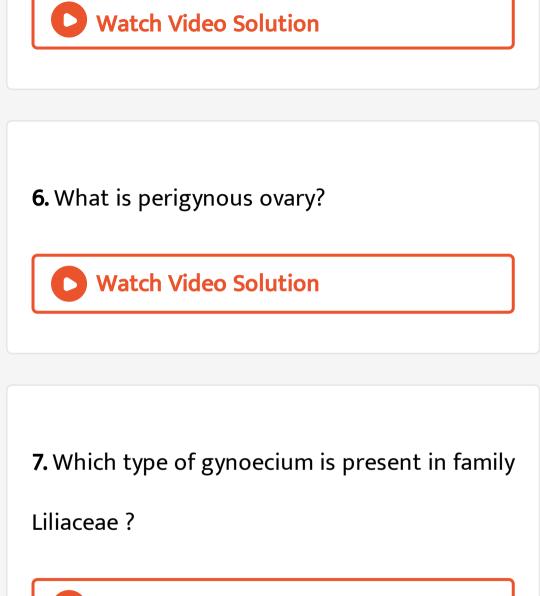
Watch Video Solution

2. Differentiate between apocarpous and

syncarpous ovary.



Alstonia ?



8. Describe the distinguishing characters of

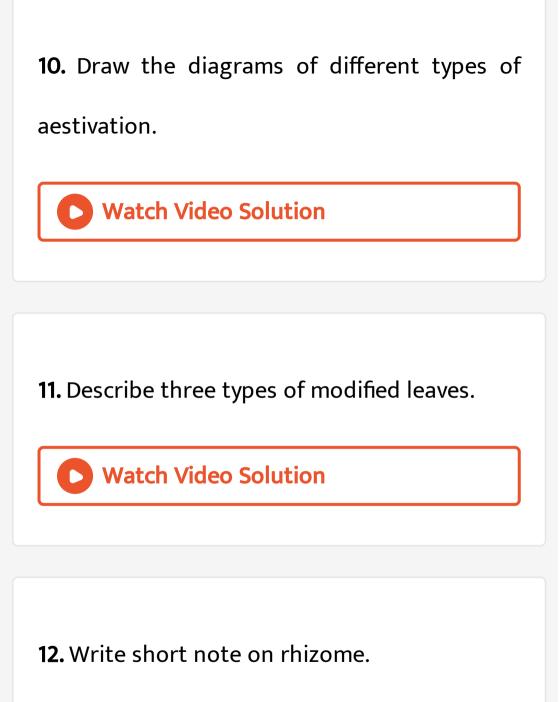
family Solanceae.

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9. Describe the distinguishing characters of

family Fabaceae.





**13.** Write the economic importance of family

Fabaceae.



**14.** Stolon, offset and rhizome are different forms of stem modifications. How can these modified forms of stem be distinguished from each other ?



Higher Order Thinking Skill Long Answer Questions

1. How do the various leaf modifications help

plants?

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2. Describe the modification of stem with

suitable examples

3. Describe the various types of placentations

found in flowering plants.



### **4.** Describe the various types of phyllotaxy.



5. Which type of modification of root is found

in following plants:

(i) Turnip (ii) Banyan tree (iii) Rhizophora (iv)

Dahlia (v) Cuscuta

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6. How is pinnately compound leaf different

from palmately compound leaf?

**1.** The shape of carrot root is napiform.

**Watch Video Solution** 

## 2. Rhizomes occur in plants such as ginger and

banana.

3. Thorns are found in plants like Citrus and

Bougainvillea.

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**4.** Veins are irregularly distributed to form network in parallel venation.

5. Dionaea is rootless aquatic herb which form

leaf bladders to trap insect.

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6. Biennial are plants which complete their life

cycle in two years.



7. Guard cells play little role in the proper

functioning of stomata.

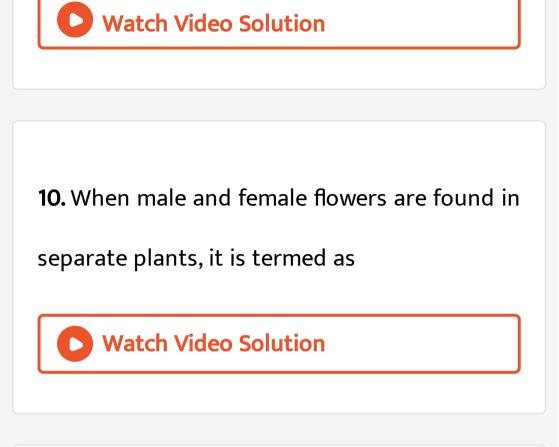
Watch Video Solution

8. Heart wood is softer than the sap wood and

not durable.



**9.** Branches of root arise from pericycle.

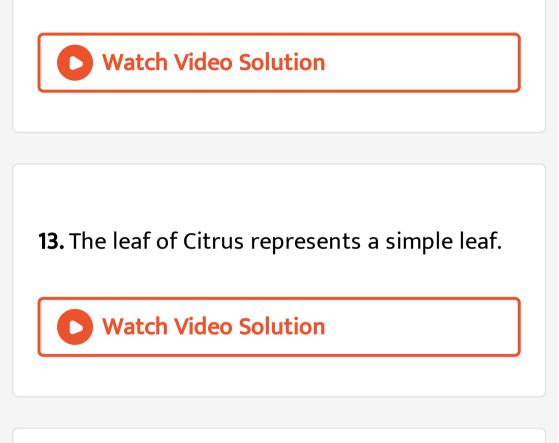


11. Drosera obtains proteins by digesting the

insects.

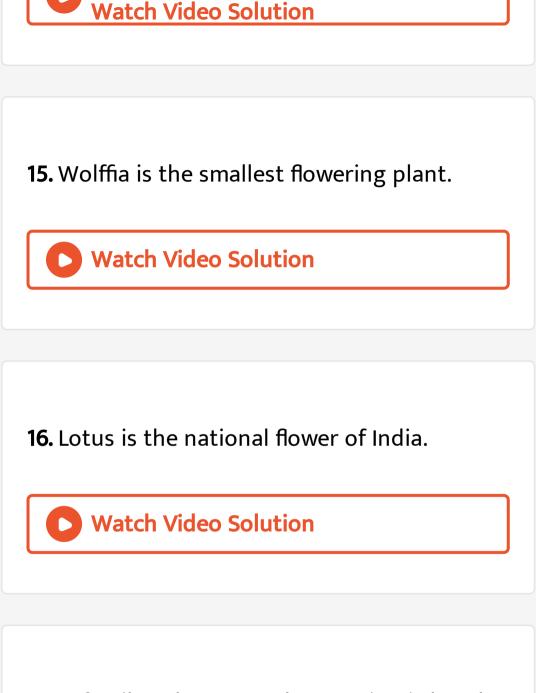
12. The well developed root system of Pistia

serves to absorb water.



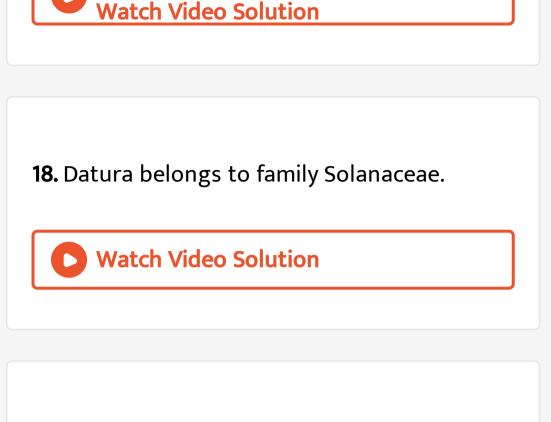
**14.** Utricularia is provided with a trap or mechanism to store the food material.





17. In family Solanaceae placentation is basal.





19. Gynoecium is bicarpellary, unilocular with

basal placentation in family Compositae.



20. Flowers are trimerous and hypogynous in

family Papilionaceae.

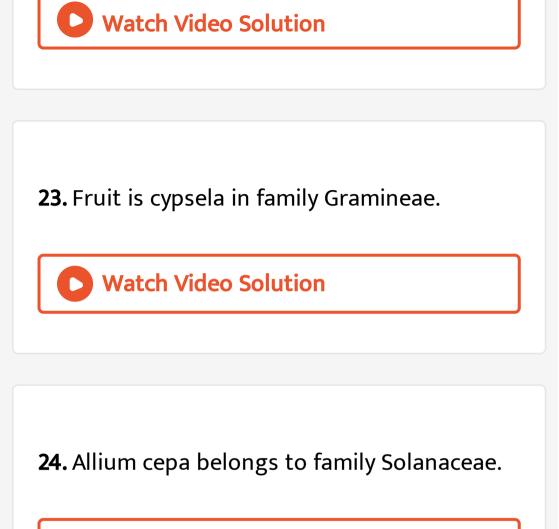


**21.** Odd scpal is anterior in family

Papilionaceae.



22. Pulses belong to family Papilionaceae.





25. In Brassica, tetradynamous type of stamens

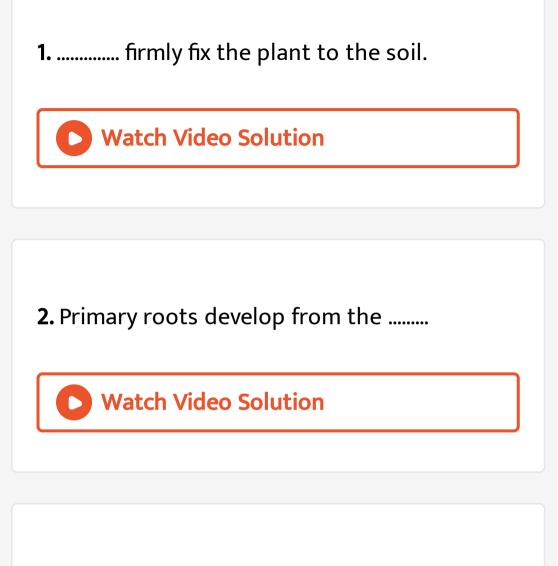
are present.

Watch Video Solution

**26.** Number of petals is five in cruciform corolla.

Watch Video Solution

Quick Memory Test Complete The Missing Links



3. The roots arising from any part of the plant

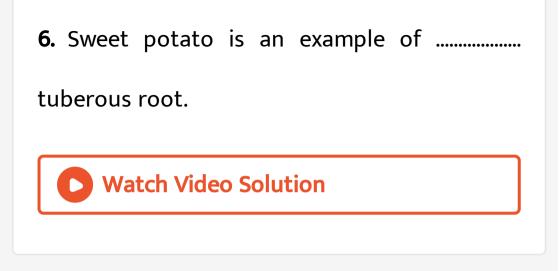
other than the radicle are called ......

4. When the root is swollen in the middle and

tapers gradually at both ends, it is called ......



**5.** Turnip is an example of ..... root.



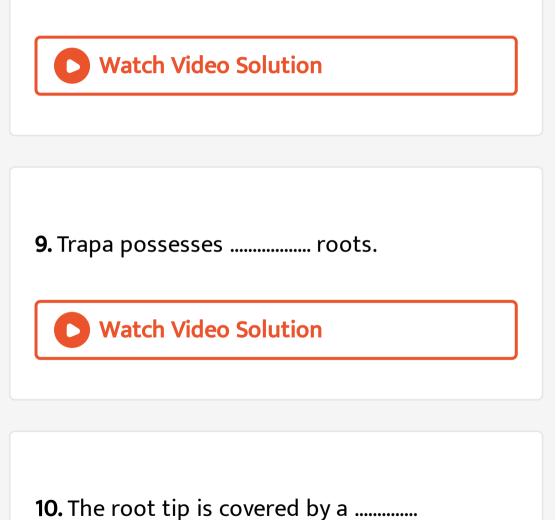
7. When the adventitious roots have swollen

regions at frequent intervals, it is called.....



8. The time taken for the development of two

adjacent leaves is called ..... index.



11. The shoot system is developed from .....

of the embryo.



## 12. The nodes and internodes are .....in the

stem.



13. Stem creeping on the ground, having long

internodes are called .....

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14. A thin, spirally coiled branch, very sensitive

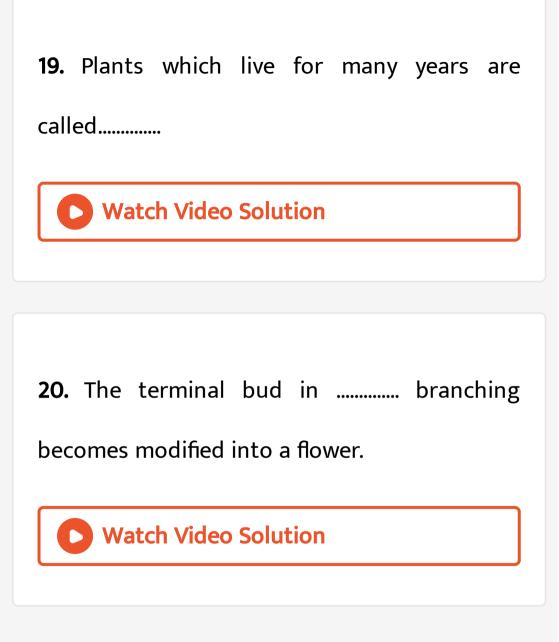
to contact is called .....

## 15. Rhizome is a modification of underground . . . . . . . . . . . . Watch Video Solution 16. Potato is a modification of underground ..... and is called .....

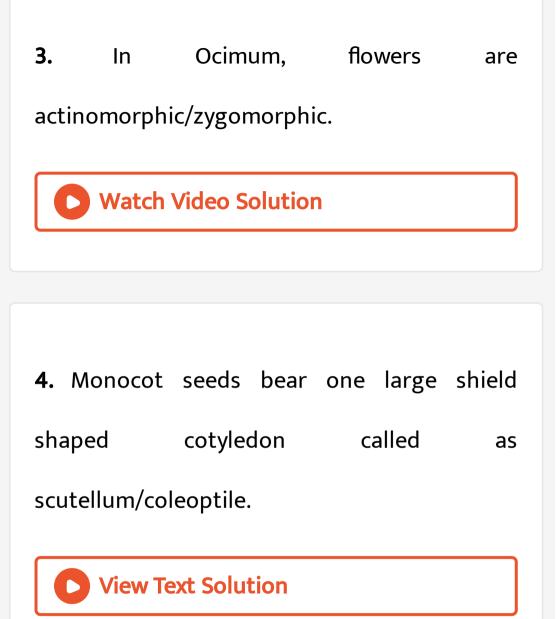


17. Hard, straight and pointed structurespresent in the axil of a leaf are called .....Watch Video Solution

**18.** A phylloclade with one or two internodes only is called a .....



Quick Memory Test C Choose The Correct Alternative 1. Petals come to each other but do not overlap in valvate/imbricate aestivation. Watch Video Solution **2.** In brinjal, stamens are epiphyllous/epipetalous. Watch Video Solution



5. In China rose/Kaner, alternate phyllotaxy is

present.

Watch Video Solution

6. Climbing roots are present in Pothos/Zea

mays.

Watch Video Solution

**Revision Exercises Very Short Answer Questions** 

 Cuscuta develops roots to penetrate the host tissue and obtain nutrition. What are these roots called?



**2.** What is heterophylly ?

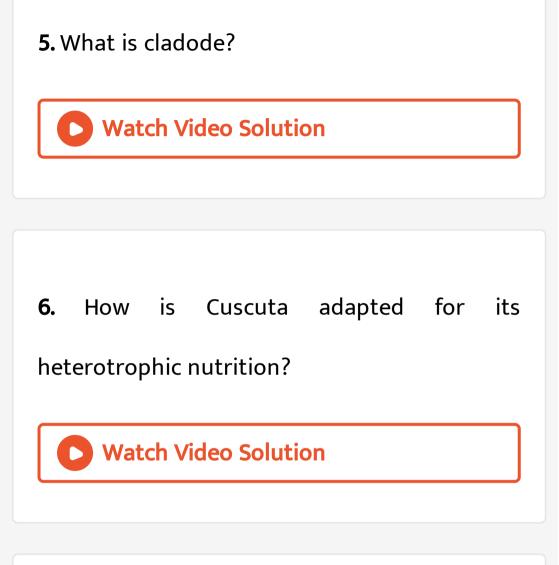
**3.** Give the scientific name of the insectivorous

plant of north eastern part of India which is

now an endangered species.



**4.** Name two plants that show alternate phyllotaxy.



7. Which same plant part has transformed Into

the following different modlftcatlons (i)

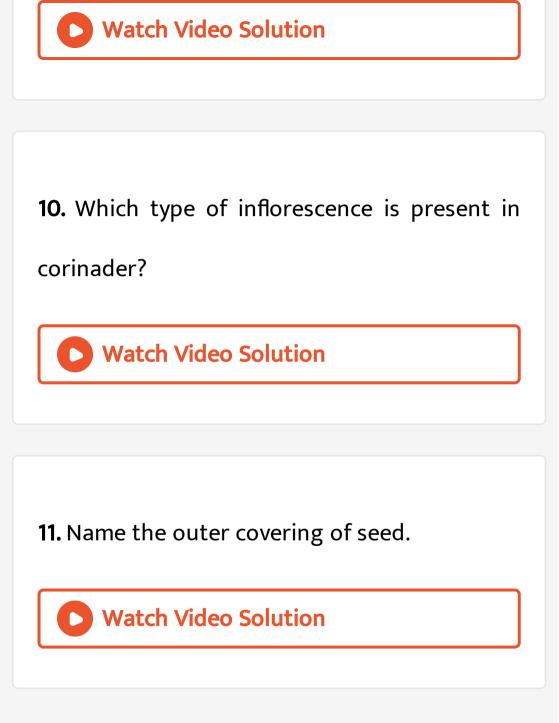
tendril of pumpkin (ii) thorn of Citrus.



8. Which part of the plant leaf is modified to form spines of Acacia and the sheath covering the leaf of Ficus elastica?

Watch Video Solution

**9.** Give one example of heterogamous type of capitulum.



12. Give one example of non-endospermic dicot

seed.

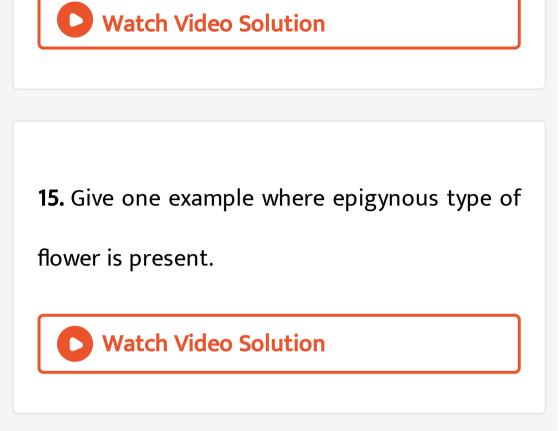


13. Name two plants showing dichasial cyme

type of inflorescence.



**14.** What is pomology?



16. Give the technical term for the kind of

pollination carried out by birds.

17. Name as cultivated plant in which neither

fruits nor seeds are formed.



**18.** Which type of placentation is present in Lathyrus.

**19.** What do you mean by modification of root? What type of modification of roots are found in: (a) Carrot (b) Turnip (c) Dahlia



20. Name the edible part of mango, apple,

banana, coconut.



21. Name a family with alternipetalous and

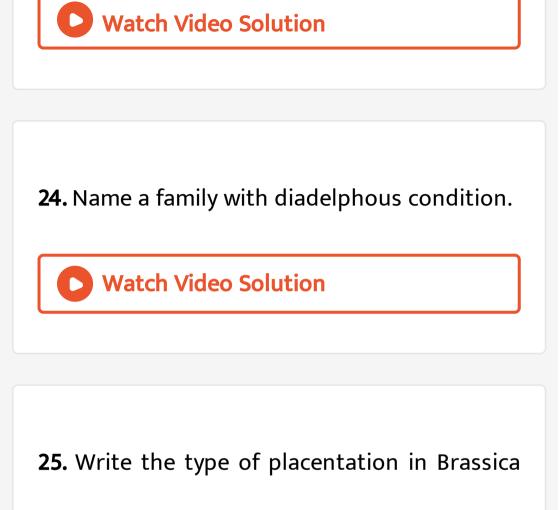
epipetalous stamens.



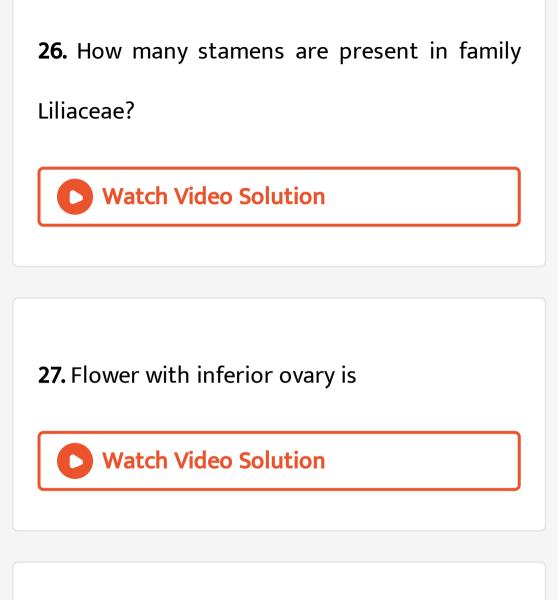
**22.** To which family Asparagus belongs?

Watch Video Solution

**23.** Write the floral formula of Solanum nigrum.



and Allium.



**28.** Write the botanical name of rice.

**29.** In which family odd sepal is anterior?

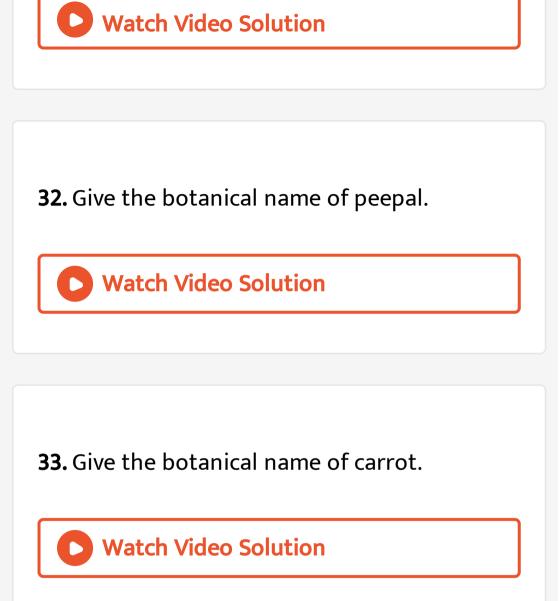


30. Which type of corolla is present in family

Brassicaceae?



**31.** Give the botanical name of potato.



**34.** The arrangement of flowers on floral axis is called...... (i) Aestivation (ii) Phyllotaxy (iii)

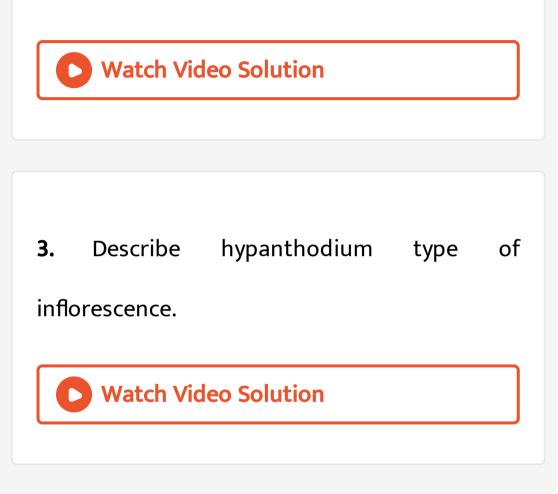
Placentation (iv) Inflorescence

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## **Revision Exercises Short Answer Questions**

1. What is typical achene?

**2.** Describe grain type of fruit.

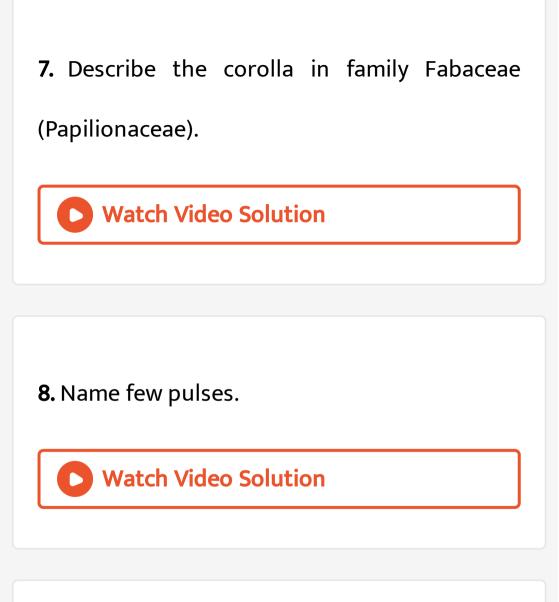


**4.** Describe the androecium in Fabaceae.

**5.** Write any two important diagnostic characters of family Liliaceae.

**Watch Video Solution** 

6. Name the food yielding plants of Liliaceae.



9. Write about corolla of Petunia.

**10.** Name few food yielding plants of family Solanaceae.



11. Name any four ornamentals of family

Solanaceae.

**12.** Potato is a stem and sweet potato is a root.

Justify the statement.

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13. What is the difference between simple leaf

and compound leaf?

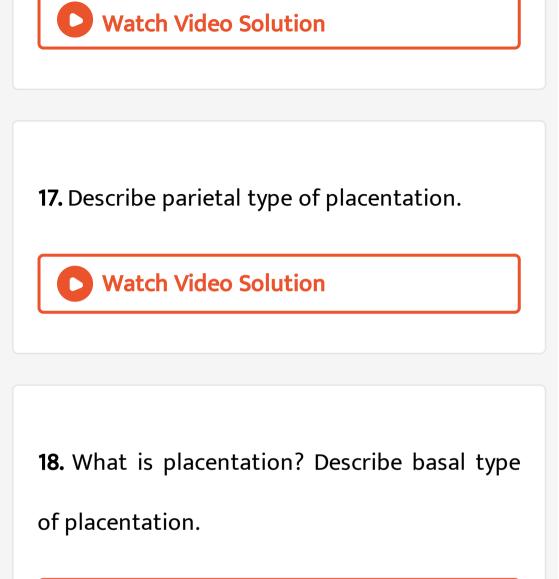
14. What is phyllotaxy? Name two types of phyllotaxy.
Watch Video Solution

15. How can you differentiate actinomorphic

from zygomorphic flower?

Watch Video Solution

16. Differentiate between spadix and catkin.





19. Describe the following terms : (a) Cruciformcorolla, (b) Tetradynamous stamens (c)Adelphous.



## 20. What is perigyny?



21. Name different types of fleshy fruits and

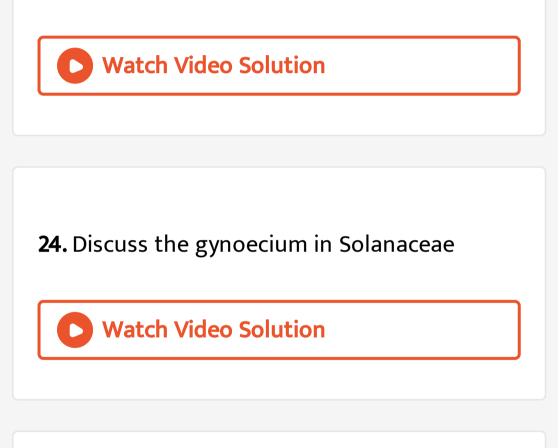
give one example each.

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**22.** On the basis of external appearance of plant, how will you distinguish between dicot and monocot plants?

23. What is a true fruit? Write the significance

of fruit formation in plants.



**25.** Describe the androecium in Liliaceae.

**26.** Write about corolla in Papilionaceae (Fabaceae).



**27.** Draw the floral diagram of Solanum nigrum.

28. Write the economic importance of family

Liliaceae.

Watch Video Solution

29. Differentiate between Phylloclade and

Cladode giving examples.

Watch Video Solution

**30.** Give differences between stem and root.



**31.** What is inflorescence? What type of

inflorescence is present in Coriander?

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**Revision Exercises Long Answer Questions** 

1. Describe the various types of placentations

found in flowering plants.





2. What is aestivation? Describe its various

types found in petals.

Watch Video Solution

3. Write an account of various types of fruits.

**4.** What do you understand by dispersal of fruits and seeds? Describe the role of various agents in it.



5. To which family pulses belong? Write the

economic importance of that family.



6. Compare the androecium and gynoecium in

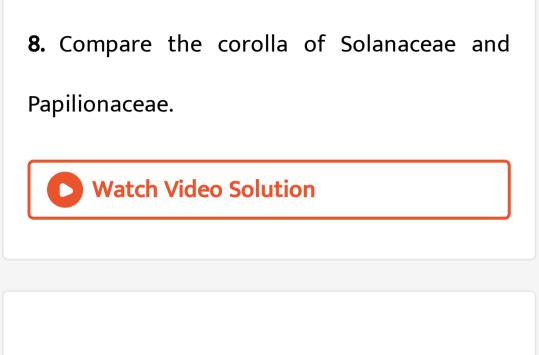
Solanaceae and Liliaceae.



7. Draw the floral diagrams of :

(i) Petunia (ii) Asphodelus





**9.** Write brief notes on the following:

(i) Runner (b) Sucker (c) Stolon

**10.** Give brief notes of the following:

(i) Napiform roots (b) Conical roots (c)

Parasitic roots

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# Competition File Objective Type Questions A Multiple Choice Questions Mcqs

**1.** The photosynthetic or assimilatory roots are observed in

A. Banyan

B. Vanda

C. Cuscuta

D. Tinospora

Answer: D

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2. Sunflower belongs to the family

A. Liliaceae

#### B. Asteraceae

C. Cruciferae

D. Peaty soil

#### Answer: B

Watch Video Solution

**3.** Which of the following is a rootless aquatic plant, which portion of the leaf forms a tiny sac for trapping insects?

## A. Nepenthes

B. Drosera

C. Utricularia

D. Dionaea

Answer: C

Watch Video Solution

4. In which plant the fruit is a drupe, seed coat

is thin, embryo in inconspicuous and

endosperm is edible

# A. Groundnut

- B. Wheat
- C. Apple
- D. Coconut

#### Answer: D

Watch Video Solution

# 5. In a monoecious plant

A. Male and female sex organs are on

different individuals

B. Male and female gametes are of two

morphologically distinct types

C. Male and female sex organs are on same

individual

D. All the stamens are fused to form one

unit

Answer: C

6. Pineapple fruit develops from

A. Unilocular polycarpellary flower

B. Multipistillate syncarpous flower

C. Multilocular monocarpellary flower

D. A cluster of compactly born flowers on

an axis

Answer: D

7. In some seeds remnants of nucellus are also peristent this residual persistent nucellus is the

A. Pericarp

B. Perisperm

C. Chalazosperm

D. Mesosperm

Answer: B

**8.** In root nodules of legumes, leghaemoglobin is important because it

A. It transports oxygen to the root nodule

B. It acts as oxygen scavanger

C. It provides energy to the nitrogen fixing

bacterium

D. It acts as catalyst in transamination

Answer: B





**9.** A fibrous root system is excellent for

A. Food storage

B. Nitrogen fixation

C. Absorbing water from deeper layers of

soil

D. Providing good anchorage for the plant

Answer: D

10. If a primay root continues to grow, the type

of root system will be known as

A. Secondary

B. Fibrous

С. Тар

D. Stilt

Answer: C



11. A horizontal underground stem is a

Or

Ginger plant has an underground stem which is

A. Corm

B. Phylloclade

C. Rhizome

D. Rhizoid

## Answer: C



**12.** Wheat is which of the following types of fruit of ?

A. Berry

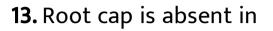
B. Nut

C. Caryopsis

D. Legume (pod)

Answer: C





A. Mesophytes

B. Hydrophytes

C. Epiphytes

D. Xerophytes

**Answer: B** 

14. Zygomorphic condition can be represented

as





C. P

D. G

Answer: B

15. An example of false fruit is

A. Apple

B. Banana

C. Grapes

D. Mango

Answer: A



16. Lady finger belongs to family

A. Malvaceae

B. Cucurbitaceae

C. Liliaceae

D. Brassicaceae

Answer: A

**17.** Glumes represent :

A. Bracts

**B.** Sepals

C. Petals

D. Stamens

Answer: A



**18.** Smallest flower is :

A. Wolffia

B. Lotus

C. Rafflesia

D. Brassica

Answer: A



19. An example of axile placentation is

A. Argemone

B. Dianthus

C. Lemon

D. Marigold

Answer: C

### 20. A fruit developed from hypanthodium

inflorescence is called

A. Hesperidium

**B.** Sorosis

C. Syconus

D. Caryopsis

Answer: C

21. Type of aestivation shown by Pisum is :

A. Imbricate

B. Vexillary

C. Twisted

D. Quincuncial

Answer: A

**22.** Study the following statements and select the correct option (A) Buds are present in the axil of leaflets of the compound leaf (B) Pulvinus leaf-base is present in some leguminous plants (C) In Alstonia, the petioles expand, become green and synthesize food (D) Opposite phyllotaxy is seen in guava. A. (B) and (D) are correct but (A) and (C) are

wrong.

B. (A) and (C) are correct but (B) and (D) are

wrong.

C. (A) and (D) are correct but (B) and (C) are

wrong.

D.(B), (C) and (D) are correct but (A) is

wrong.

Answer: A

23. Select the correct match :

A. Colchicum autumnale - Solanaceae

B. Petunia -Solanaceae

C. Gloriosa -Fabaceae

D. Trifolium -Liliaceae

Answer: B

24. The plant having monadelphous stamens

and axile placentation is

A. Lemon

B. Pea

C. Tomato

D. China rose

Answer: D

**25.** Which of thw following plants have long slender and coiled stem tendrils developed from axillary buds

A. Grapevine and pumpkins

B. Australian Acacia and watermelon

C. Bougainvillea and cucumber

D. Strawberry and grapevine

Answer: A

26. Select the correct statements

(A) From the region of elongation, some of the epidermal cell for root hairs

(B) Pneumatophores are seen in Rhizophora

(C) Adventitous roots are seen in the Banyan

tree

(D) Maize and sugarcane have prop roots

A. A and D

B. A, C and D

C. C and D

D. B and C

### Answer: D



**27.** Which of the following plants has the floral characters like zygomorphic flower, vexillary aestivation, diadelphous androecium and marginal placentation.

A. Pisum

- B. Belladona
- C. Brinjal

#### D. Asparagus

#### Answer: A

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**28.** From the options given below, find out the correct floral formula for a flower having the following characters namely actinomorphic, bisxual, five united sepals, five united petals, stamens five and epipetalous, bicarpellary syncarpous with superior ovary









### Answer: B



# **29.** Whorled, simple leaves with reticulate venation are present in

# A. China rose

- B. Alstonia
- C. Calotropis
- D. Neem

Answer: B



**30.** Which one of the following diagrams represents the placentation in Dianthus













# **31.** Which one of the following organisms is

correctly matched with its three

characteristics

A. Pea: $C_3$ pathway, endospermic seed,
vexillary aestivation
B. Tomato: twisted aestivation, axile
placentation, berry
C. Onion: bulb, imbricate aestivation, axile
placentation
D. Maize: $C_3$ pathway, closed vascular
bundles, scutellum

### Answer: C

**32.** How many plants in the list given below have marginal placentation : Mustard, Gram, Tulip, Asparagus, Arhar, Sun hemp, Chilli, Chochicine, onion, Moong, Pea, Tobacco, Lupin

A. Four

B. Five

C. Two

D. Three

Answer: C



# **33.** Which of the correct arrangement of corolla in family papilionaceae

A. 
$$C_{1 \,+\, (\,2\,)\,-\,2}$$

B. 
$$C_{1+2+(2)}$$

C. 
$$C_{1+2+2}$$



#### **Answer: B**





# 34. Colchicine is obtained from which of the

following families?

A. Poaceae

B. Brassicaceae

C. Malvaceae

D. Liliaceae

### Answer: D

**35.** Obliquely placed ovary, swollen placenta and epipetalous stamens are features of family

A. Asteraceae

B. Solanaceae

C. Brassicaceae

D. Malvaceae

Answer: B

**36.** On the basis of position of the ovary, mustard plants are

A. Hypogynous

B. Perigynous

C. Epigynous

D. Zygomorphic

Answer: A

**37.** The flower of Calotropis has which of the

following aestivations

A. Twisted

B. Imbricate

C. Valvate

D. Vexillary

Answer: C

**38.** Find out the pairs which are correctly, matched with respect to aestivation of petals
Igt Valvate-Calotropis
II. Twisted-Bean

III. Imbricate-Cassia

IV. Vexillary-China rose

A. I and IV

B. I and II

C. I and III

D. III and IV

### Answer: C



**39.** When the margins of sepals or petals overlap one another without any particular direction, the condition in termed as

A. Vexillary

B. Imbricate

C. Twisted

D. Valvate





# **40.** Placenta and pericarp are both edible portions in

A. Apple

B. Banana

C. Tomato

D. Potato





**41.** Which one of the following statements is not correct?

A. The seed in grasses is not endospermic

B. Mango is a parthenocarpic fruit

C. A proteinaceous aleurone layer is

present in maize grain

D. A sterile pistil is called a staminode

Answer: B

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# 42. Non-albuminous seed is produced in

A. Maize

**B.** Castor

C. Wheat

D. Pea.





# 43. An example of edible underground stem is

A. Carrot

- B. Groundnut
- C. Sweet potato
- D. Potato

Answer: D



**44.** An aggregate fruit is the one which develops from

A. Multicarpellary syncarpous gynoecium

B. Multicarpellary apocarpus gynoecium

C. Complete inflorescence

D. Multicarpellary superior ovary

Answer: B





45. Aleurone layer is present in

A. Virus infected plant cell

B. Pathogenic fungi

C. Bacterial biofilm

D. Seed

Answer: D

46. Multicostate divergent reticulate venation

is seen in .....leaf

A. Zizyphus

B. Bamboo

C. Castor

D. Manog

Answer: C

**47.** Fruit of fig is :

A. Sorosis

B. Syconu

C. Drupe

D. Berry

**Answer: B** 

48. Which one of the following is non-

endospermic seed

A. Maize

B. Coconut

C. Groundnut

D. Wheat

Answer: C

49. Which one of the following is not a natural

method of vegetative propagation

A. Runner

B. Foliar buds

C. Stem tuber

D. Grafting

Answer: D

50. A true is the one in which the fleshy part of

the fruit is derived from

A. Thalamus

B. Ovary

C. Inflorescence axis

D. Apocarpous gynoecium

Answer: B

51. The wheat grain has an embryo with one

large, shieldshaped cotyledon known as :-

A. Scutellum

B. Coleoptile

C. Epiblast

D. Coleorhiza

Answer: A

**52.** Coconut water from a tender coconut is:

A. Innermost layer of seed coat

- B. Degenerated nucellus
- C. Immature embryo
- D. Free nuclear endosperm

Answer: D

**53.** The monocotyledonous seed (wheat grain) consits of one large and shield shaped cotyledon known as

A. Coleoptile

B. Scutellum

C. Aleurone layer

D. Coleorhiza

Answer: B

54. The term 'polyadelphous' is related to

A. Gynoecium

B. Androecium

C. Corolla

D. Calyx

Answer: B

55. Free central placentation is found in

A. Dianthus

B. Argemone

C. Brassica

D. Citrus

Answer: A



**56.** Which of the following is not a stem modification

A. Pitcher of Nepenthes

B. Thorns of Citrus

C. Tendrils of Cucumber

D. Flattened structures of Opuntia

Answer: A

**57.** Stems modlfted into flat green organs performing the functions of leaves are known as

A. Cladodes

B. Phyllodes

C. Phylloclades

D. Scales

Answer: B

58. Tricarpellary syncarpous gynoecium is

found in flowers of

A. Liliaceae

B. Solanaceae

C. Fabaceae

D. Poaceae

Answer: A

**59.** In Bougainvillea, thorns are the modifications of

A. Adventitious root

B. Stem

C. Leaf

D. Stipules

Answer: B

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**60.** Plants, which produce characteristic pneumatophores and show vivpary belong to

A. Halophytes

B. Psammophytes

C. Hydrophytes

D. Mesophytes

Answer: A

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61. Coconut fruit is a

A. Berry

B. Nut

C. Capsule

D. Drupe

Answer: D



62. The morphological nature of the edible

part of coconut is

A. Cotyledon

B. Endosperm

C. Pericarp

D. Perisperm

**Answer: B** 

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#### 63. Sweet potato is a modified

A. Adventitious root

B. Tap root

C. Stem

D. Rhizome

Answer: A



64. Pneumatophores occur in

A. Free-floating hydrophytes

- B. Carnivorous plants
- C. Halophytes
- D. Submerged hydrophytes

Answer: C

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**65.** Which part of poppy plant is used to

obtain the drug 'Smack'?

A. Latex

B. Roots

C. Flowers

D. Leaves

Answer: A

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# Competition File Objective Type Questions B Cbse Pmt Main Examination Question

**1.** (a) Identify the placentation shown in following figures :

(b) Write the type of placentation found in following plants.

(A) Mustard (B) Dianthus (C) Pea (D) Marigold

(E) Lemon (F) Argemone





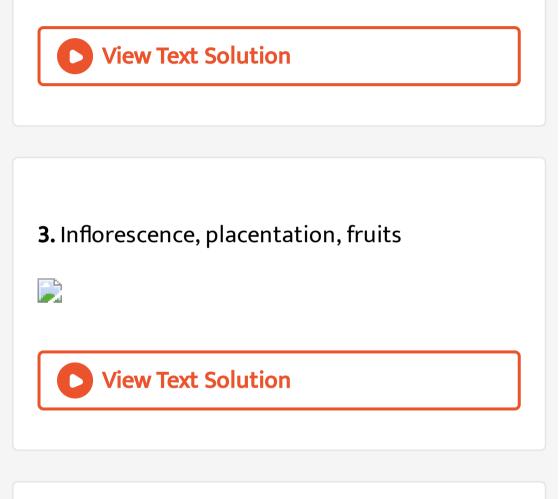
**2.** (a) Name the type of fruit in the bold word and mention the character asked in the question :

Aggregate, Composite, Drupe, Pome, Pepo, Berry, Cypsela, Schizocarp, Follicle, Hesperidium

(i) Coconut, Edible part, (ii) Orange,
Placentation, (iii) Coriander, Inflorescence.
(b) Name the type of inflorescence in the bold
words and mention the character asked in the
question : Umble, Corymb, Verticillaster,

Capitulum, Spike, Cyathium, Capitate, Spadix

(i) Marigold, Fruit, (ii) Euphorbia, Fruit.



4. Differentiate between :

(a) Culm and Caudex. (b) Hypanthodium and



**5.** Carefully study the following figures and answer the following questions:

(i) What is A epigynous or hypogynous ovary.Give reason.

(ii) What is the aestivation in B? In which of

the following, it is found?



**6.** Complete the following statements (i) to (iv) by picking up the correct alternative from those given in the box below. Candituft, Guava, Peach, Nymphaea, Cycades, Cucurbita, Marsilea, Isoetes, Vallisneria, Nandadevi, Karnataka, Nilgiri, Maharashtra m (i) The inferior ovary is found in ..... and ..... (ii) Rooted hydrophyte with floating leaves plants are ...... a pteridophyte and ..... an

angiosperm.

(iii) Dioecious plants are .....gymnosperm
and ...... an angiosperm.
(iv) The first biosphere reserve is ...... and is
situated in three states ......, Kerala and
Tamilnadu.

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**7.** Identify the given diagram and select suitable example for this diagram out of the given examples : Primula, Dianthus, Hollyhock,







8. Write placentation, inflorescence and type

of fruits of the following: (a) Pionsettia (b)

Merigold (c) Onion (d) Tomato (e) Radish

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9. (a) There are no flowers in banyan tree. Is it

so 7 Comment on it.

(b) Differentiate between phyllode and

phylloclade. Give one example of each :

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10. Match the terms in Column A with suitable

terms in Column B :



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## Competition File Objective Type Questions C Matching Type Qustions

**1.** Match the term in Column A with suitable terms in Column B :



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Competition File Objective Type Questions D Assertion Type Questions **1.** Assertion. Leaves are pinnatifid in Poppy.

Reason. Here incisions are less than half way from margin to mid rib.

A. If both Assertion and Reason are true and the Reason is a correct explanation of the Assertion.

B. If both Assertion and Reason are true

but Reason is not a correct explanation

of the Assertion.

C. If Assertion is true but the Reason is

false.

D. If both Assertion and Reason are false.

Answer: A

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**2.** Assertion. In reticulate venation, veinlets are repeatedly branched and form a complex network.

Reason. In parallel venation, the veins lie parallel to each other.

A. If both Assertion and Reason are true

and the Reason is a correct explanation

of the Assertion.

B. If both Assertion and Reason are true

but Reason is not a correct explanation

of the Assertion.

C. If Assertion is true but the Reason is

false.

D. If both Assertion and Reason are false.

#### Answer: C

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**3.** Assertion. In wheat, fruit is of caryopsis type.

Reason. Pericarp is fused with testa.

A. If both Assertion and Reason are true

and the Reason is a correct explanation

of the Assertion.

B. If both Assertion and Reason are true

but Reason is not a correct explanation

of the Assertion.

C. If Assertion is true but the Reason is

false.

D. If both Assertion and Reason are false.

Answer: A

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**4.** Assertion. In basal placentation many ovules

are present.

Reason. It is bilocular.

A. If both Assertion and Reason are trueand the Reason is a correct explanationof the Assertion.B. If both Assertion and Reason are true

but Reason is not a correct explanation

of the Assertion.

C. If Assertion is true but the Reason is

false.

D. If both Assertion and Reason are false.

Answer: D

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5. Assertion. Castor seed is dicot endospermic

seed.

Reason. Seed is with two cotyledons and

unconsumed endosperm.

A. If both Assertion and Reason are true

and the Reason is a correct explanation

of the Assertion.

B. If both Assertion and Reason are true but Reason is not a correct explanation of the Assertion.

C. If Assertion is true but the Reason is

false.

D. If both Assertion and Reason are false.

Answer: A



**6.** Assertion. Flower is complete in Petunia. Reason. Perianth, androecium and gynoecium is present.

A. If both Assertion and Reason are true and the Reason is a correct explanation of the Assertion.

B. If both Assertion and Reason are true

but Reason is not a correct explanation

of the Assertion.

C. If Assertion is true but the Reason is

false.

D. If both Assertion and Reason are false.

Answer: C

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7. Assertion. Capitulum is also called racemose

head.

Reason. In umbel peduncle is reduced to a point.

A. If both Assertion and Reason are true

and the Reason is a correct explanation

of the Assertion.

B. If both Assertion and Reason are true

but Reason is not a correct explanation

of the Assertion.

C. If Assertion is true but the Reason is

false.

D. If both Assertion and Reason are false.

Answer: B

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**8.** Assertion. Fruit is cypsela in Compositae.

Reason. Fruit is siliqua in Cruciferae.

A. If both Assertion and Reason are true

and the Reason is a correct explanation

of the Assertion.

B. If both Assertion and Reason are true

but Reason is not a correct explanation

of the Assertion.

C. If Assertion is true but the Reason is

false.

D. If both Assertion and Reason are false.

Answer: B

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9. Assertion. Stamens are 6, polyandrous and tetradynamous in Brassica.
Reason. Stamens are arranged in two whorls with lateral two in outer whorl, and four in inner whorl with anteroposterior median pairs showing tetradynamous condition. Stamens are free.

A. If both Assertion and Reason are true and the Reason is a correct explanation of the Assertion. B. If both Assertion and Reason are true

but Reason is not a correct explanation

of the Assertion.

C. If Assertion is true but the Reason is

false.

D. If both Assertion and Reason are false.

Answer: A

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**10.** Assertion. Stamens are syngenesious in Compositae.

Reason. Filaments are fused and anthers are free in one group.

A. If both Assertion and Reason are true

and the Reason is a correct explanation

of the Assertion.

B. If both Assertion and Reason are true

but Reason is not a correct explanation

of the Assertion.

### C. If Assertion is true but the Reason is

false.

D. If both Assertion and Reason are false.

Answer: C

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**11.** Assertion. Flowers are trimerous in familySolanaceae.Reason. Stamens are three in number and

carpels are six in number.

A. If both Assertion and Reason are true

and the Reason is a correct explanation

of the Assertion.

B. If both Assertion and Reason are true but Reason is not a correct explanation of the Assertion.

C. If Assertion is true but the Reason is

false.

D. If both Assertion and Reason are false.

Answer: D



**12.** Assertion. In family Liliaceae, perianth, stamens and carpels are present. But still it is incomplete.

Reason. In complete flower calyx, corolla,

androecium and gynoecium are present.

A. If both Assertion and Reason are true

and the Reason is a correct explanation

of the Assertion.

B. If both Assertion and Reason are true

but Reason is not a correct explanation

of the Assertion.

C. If Assertion is true but the Reason is

false.

D. If both Assertion and Reason are false.

Answer: A

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**13.** Assertion. Bract is represented by a scale, single veined called lemma in family Gramineae.

Reason. Bracteole in family Gramineae is represented by two nerved pale.

A. If both Assertion and Reason are true

and the Reason is a correct explanation

of the Assertion.

B. If both Assertion and Reason are true

but Reason is not a correct explanation

of the Assertion.

C. If Assertion is true but the Reason is

false.

D. If both Assertion and Reason are false.

Answer: B

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**14.** Assertion . In cymose tap root system the oldest branch lies very close to growing point of root while the youngest branch is farthest

away from it

Reason . In cymose tap root system, the primary roots itself stops growing after some time, but secondary roots carry on further growth of the system

A. If both Assertion and Reason are true and the Reason is a correct explanation of the Assertion.

B. If both Assertion and Reason are true but Reason is not a correct explanation

of the Assertion.

C. If Assertion is true but the Reason is

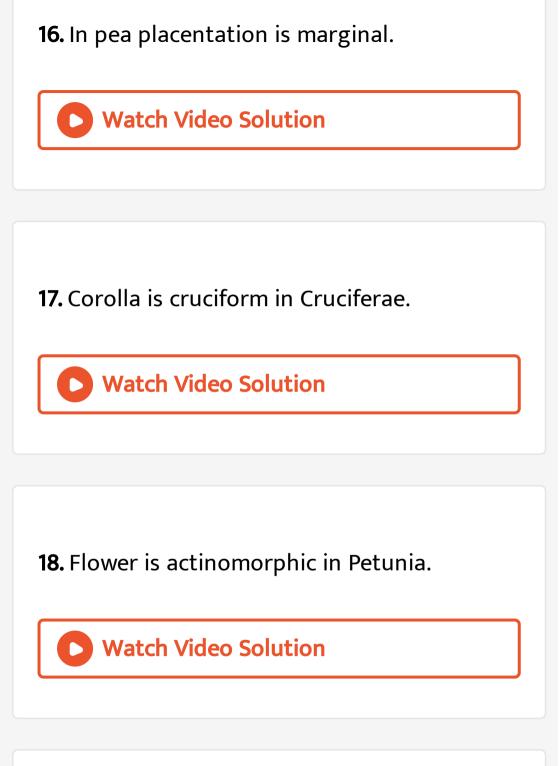
false.

D. If both Assertion and Reason are false.

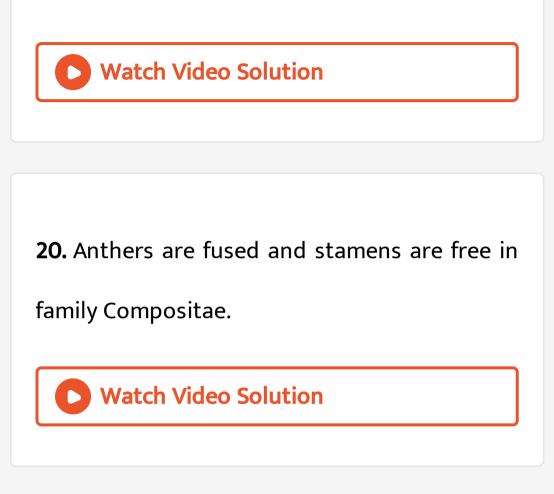
Answer: A

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## 15. Placentation is basal in Compositae.



**19.** Odd sepal is anterior in Papilionaceae.

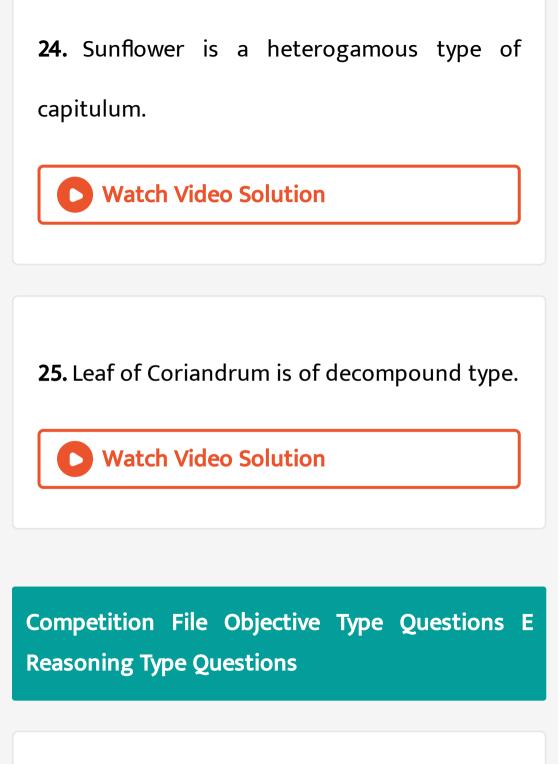


**21.** The rhizome of ginger is found underground. But it is not root.

**22.** In Opuntia, stem is flat, leaf like and photosynthetic



23. Grain is a fruit not seed.



Cruciferae.

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# Competition File Objective Type Questions F Additional Multiple Choice Questions

**1.** Bicarpellary, syncarpous, ovary with axile placentation is seen in

A. Solanaceae

- B. Caesalpinaceae
- C. Asteraceae
- D. Malvaceae

Answer: A

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**2.** Which of the following is a merit in the Benthan and Hooker's systerm of classification

between dicots and monocots

B. Closely related families are placed apart

C. The placement of family Asteraceae in

the beginning of Gamopetalae

D. The placement of order Ranales in the

beginning

Answer: D

**3.** Which of the following statements is/are true

(A) It the stem is jointed with solid nodes and hollow internodes, it is called caudex (B) In Tridax the stem is decumbent (C) Corn is a condensed form of rhizome growing more or less in vertical direction (D) Sucker is an underground modification of stem

(E) Biparous type of cymose branching is seem in Saraca.

A. A, D and E only

B. B and C only

C. B, C and E only

D. C and D only

Answer: B

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**4.** In the monocotyledon seeds , the endosperm is separated from the embryo by a distinct layer known as :

A. Testa

- B. Aleurone layer
- C. Tegmen
- D. Scutellum

#### Answer: B

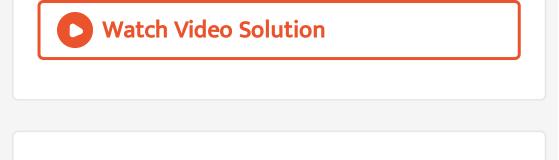


## 5. Which of the following represents the

floralm characters of Liliaceae

A. Six tepals, zygomorphic, six stamens, bilocular ovary, axile placentation actinomorphic, B. Tetramerous, polyphyllous, unilocular ovary, axile placenation C. Trimerous, actinomorphic, polyandrous, superior ovary, axile placenation D. Bisexual, zygomorphic, gamophyllous, inferior ovary, marginal placentation

Answer: C



- **6.** The botanical name of soyabean is:
  - A. Cajanus cajan
  - B. Glycine max
  - C. Glycyrrhiza glabra
  - D. Abrus precatorius

Answer: B

7. Which of the following is/are not characteristic features of Asteraceae (A) Cypsela type of fruit (B) Syngenesious stamens (C) Ovary bicarpellary and superior (D) Placentation marginal (E) Head type of inflorescence

- A. B, C and D only
- B. C and E only
- C. C and D only

D. A and B only

## Answer: C

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**8.** Family Podostemaceae is placed under the series :

A. Multiovulatae aquaticae

B. Microembryeae

C. Daphnales

D. Unisexuales

Answer: A

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9. Replum is present in the ovary of flower of

A. Sunflower

B. Pea

C. Lemon

D. Mustard



**10.** Thorn of Bougainvillea and tendril of Cucurbita are examples of :

A. Vestigial organs

B. Retrogressive evolution

C. Analogous organs

D. Homologous organs



**11.** Dry indehiscent single-seeded fruit formed from biscarpellary syncarpous inferior ovary is

A. Berry

B. Cremocarp

C. Caryopsis

D. Cypsella



# **12.** The fleshy receptacle of syconus of fig encloses a number of

A. Berries

B. Mericarps

C. Achenes

D. Samaras





## 13. Pneumatophores are present /common in

A. Xerophytes

- B. Hygrophytes
- C. Mesophytes
- D. Halophytes

Answer: D



## 14. Trimerous flower, superior ovary and axlle

placentation is characteristic of

A. Liliaceae

B. Cucurbitaceae

C. Solanaceae

D. Compositae







**15.** what differentiates a dicot leaf from monocot leaf

A. Parallel venation

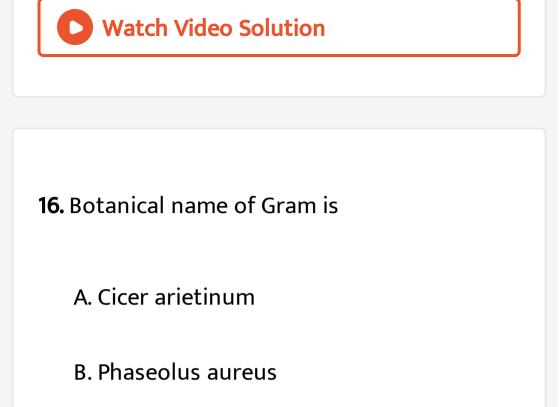
B. Differentiation of palisade and spongy

parenchyma

C. Stomata only on upper side

D. Stomata both on upper and lower sides

Answer: B



- C. Lablab purpureus
- D. Dolichos

#### Answer: A

**17.** Primary root is :

1. Positively geotropic 2. Positively hydrotropic

3. Negatively geotropic 4. Negatively hydrotropic Code:

A. 1, 2 and 3 are correct

B. 1 and 2 are correct

C. 2 and 4 are correct

D. 1 and 3 are correct

#### Answer: B

**18.** Hairy styles help in the dispersal of fruits in:

1. Clematis 2. Aristolochia 3. Naravelia 4.

Mango

Code :

A. 1, 2 and 3 are correct

B. 1 and 2 are correct

C. 2 and 4 are correct

D. 1 and 3 are correct



**19.** The seeds which have separate endosperm:1. Maize 2. Onion 3. Rice 4. BeanCode :

- A. 1, 2 and 3 are correct
- B. 1 and 2 are correct
- C. 2 and 4 are correct
- D. 1 and 3 are correct

## Answer: A



**20.** Ginger is an underground stem. It is distinguished from root because :

A. It lacks chlorophyll

B. It stores food

C. It has nodes and internodes

D. It has xylem and vessels





## 21. What type of placentation of seen in sweet

pea

A. Basal

B. Axile

C. Free central

D. Marginal



**22.** Simple cluster of radial leaves stipulate and parallel venation leaves and chyme or umbel inflorescence are

A. Poaceae

B. Liliaceae

C. Asteraceae

D. Fabaceae





## 23. Tobacco and Petunia belong to the family

A. Poaceae

- B. Fabaceae
- C. Solanaceae
- D. Brassicaceae

Answer: C



# **24.** The order of opening of flower parts from

the periphery towards the centre is called

A. Acropetal

B. Centripetal

C. Centrifugal

D. Basipetal

Answer: B





# 25. The bladder helps in floating and trapping

insects is found :

A. Zizyphus

B. Utricularia

C. Nepenthes

D. Acacia

Answer: B

**26.** Which one of the following inhibits seed germination for a particular period ?

A. Light

B. Water

C. Carbon dioxide

D. Dormancy

Answer: D

1. Placentntion, in which ovules develop on the

inner wall of the ovary or in peripheral part, is:

A. Basal

B. Axile

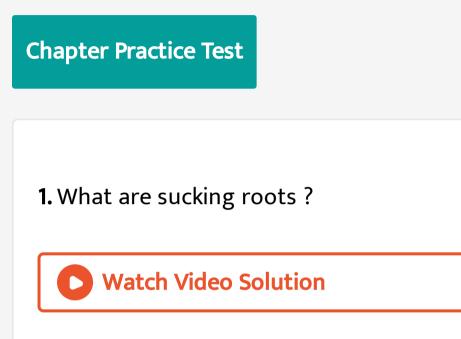
C. Parietal

D. Free central





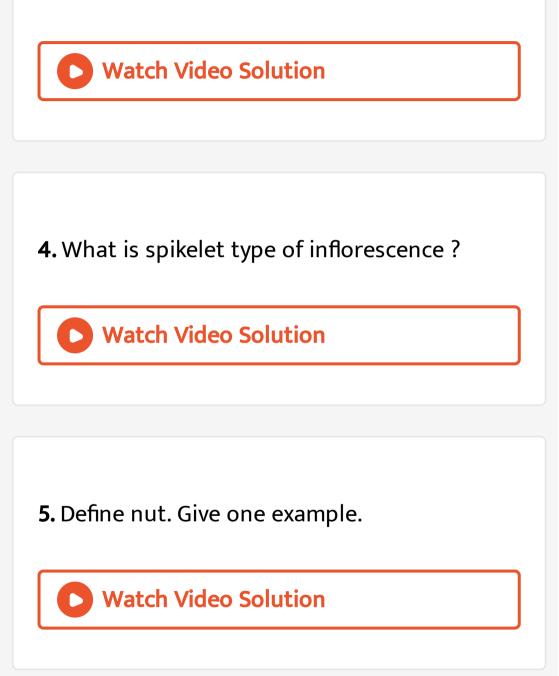




# **2.** What is sympodial axis ?

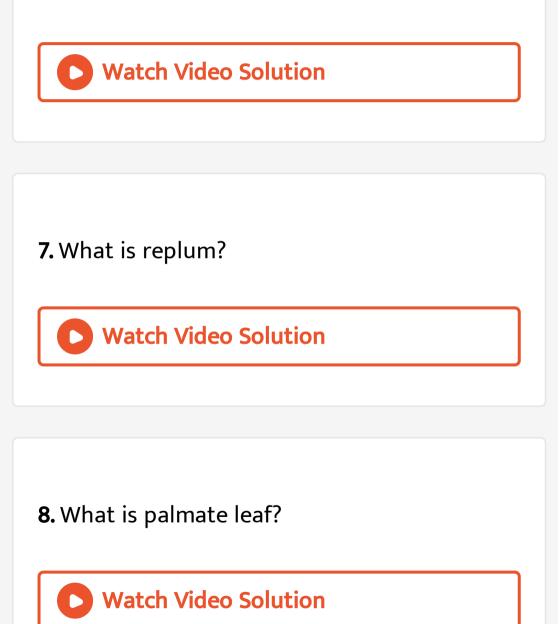
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3. Name the various types of leaves

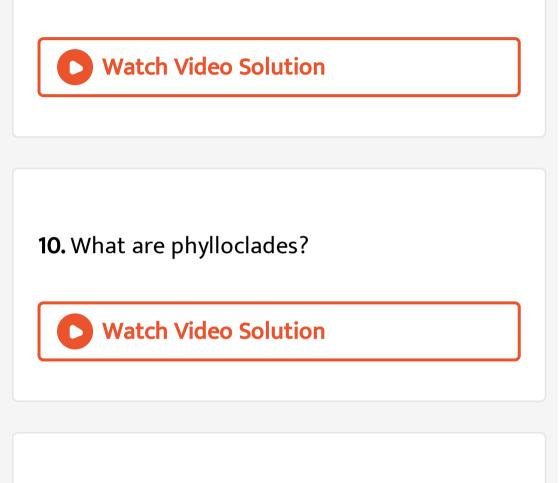


6. What is opposite and decussate type of

phyllotaxy?



**9.** Describe the umbel type of inflorescence.



**11.** Draw the floral diagram of Allium cepa.

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12. Write the economic importance of family

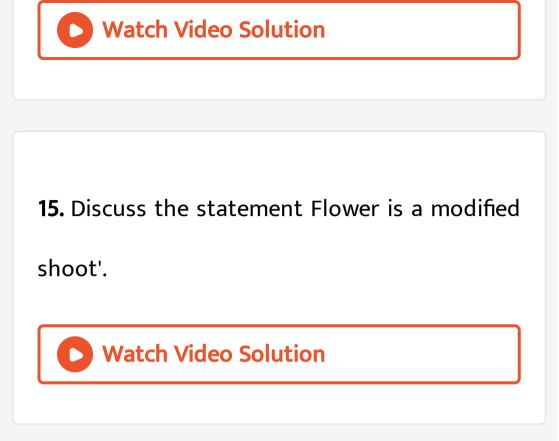
Solanaceae.



13. Discuss the structure of maize grain.

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**14.** Differentiate between spadix and capitulum.



## Chapter Practice Test Section A

1. What type of placentation of seen in sweet

pea

A. Basal

B. Axile

C. Free central

D. Marginal

Answer: D

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2. Simple cluster of radial leaves stipulate and

parallel venation leaves and chyme or umbel

inflorescence are

A. Poaceae

B. Liliaceae

C. Asteraceae

D. Fabaceae

Answer: B

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3. Tobacco and Petunia belong to the family

A. Poaceae

### B. Fabaceae

- C. Solanaceae
- D. Brassicaceae

#### Answer: C

Watch Video Solution

**4.** The order of opening of flower parts from the periphery towards the centre is called

A. Acropetal

B. Centripetal

C. Centrifugal

D. Basipetal

Answer: B

Watch Video Solution

5. The bladder helps in floating and trapping

insects is found :

A. Zizyphus

B. Water

C. Nepenthes

D. Centrifugal

Answer: B

Watch Video Solution

**6.** Which one of the following inhibits seed germination for a particular period ?

A. Light

B. Water

C. Carbon dioxide

D. Dormancy

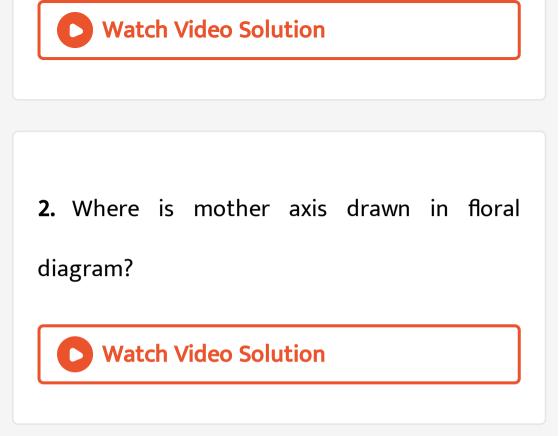
#### Answer: D

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## **Chapter Practice Test Section B**

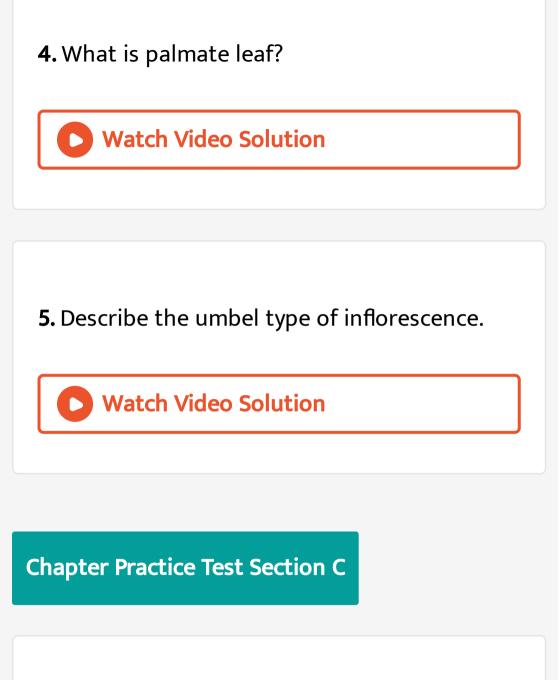
1. What is opposite and decussate type of

phyllotaxy?

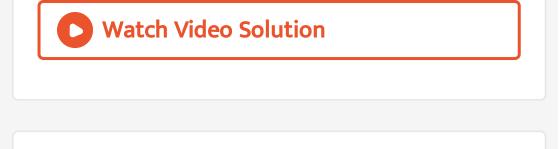


3. What is replum?

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1. What are phylloclades?



2. Name a plant from family-Fabaceae which

yield the following:

(a) Timber (b) Dye (c) Vegetable (d) Fodder

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3. Draw the floral diagram of Allium cepa.

Watch Video Solution

4. Write the economic importance of family Solanaceae.

 Watch Video Solution

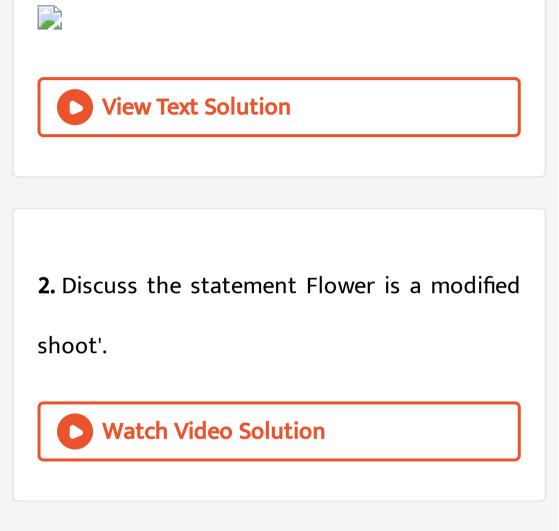
## Chapter Practice Test Section D

**1.** Carefully study the following figures and answer the following questions:

(i) What is A epigynous or hypogynous ovary?

Give reason. (ii) What is the aestivation in B? In

which of the following, it is found?



Case Based Short Answer Type Questions

**1.** (a) Identify the placentation shown in following figures :

(b) Write the type of placentation found in following plants. (A) Mustard (B) Dianthus (C)

Pea

(D) Marigold (E) Lemon (F) Argemone

View Text Solution

**2.** (a) Name the type of fruit in the bold word and mention the character asked in the question:

Aggregate, Composite, Drupe, Pome, Pepo, Berry, Cypsela, Schizocarp, Follicle, Hesperidium

(i) Coconut, Edible part, (ii) Orange,
Placentation, (iii) Coriander, Inflorescence.
(b) Name the type of inflorescence in the bold
words and mention the character asked in the
question :

Umble, Corymb, Verticillaster, Capitulum, Spike,

Cyathium, Capitate, Spadix

(i) Marigold, Fruit, (ii) Euphorbia, Fruit.

