



## Morphology of Flowering Plants Important Questions With Answers

### NEET Biology 2023

1. Which of the following kinds of venation is present in banana?  
a) Reticulate unicostate   b) Reticulate multicostate   **c) Parallel unicostate**   d) Parallel multicostate

**Solution : -**

In pinnate or unicostate parallel venation, there is single principle vein or midrib that runs from base to apex of the lamina. The lateral veins run parallel to one another Without forming anastomoses, e.g., *Musa paradisiaca* (banana), *Canna*.

2. *Lycopersicon esculentum* (Tomato) belongs to family  
**a) Solonaceae**   b) Malvaceae   c) Cruciferae   d) Cucurbitaceae

3. In china rose the flowers are :

- a) Actinomorphic, epigynous with valvate aestivation   b) Zygomorphic, hypogynous with imbricate aestivation  
c) Zygomorphic, epigynous with twisted aestivation  
**d) Actinomorphic, hypogynous with twisted aestivation**

**Solution : -**

(i) In China Rose, the flowers are actinomorphic, hypogynous with twisted aestivation. In this type of symmetry (actinomorphic), flowers can be divided in 3 or more identical sectors, which are related to each other by rotation about the centre of the flower. eg. China rose. Zygomorphic is a type of bilateral symmetry which flowers can be divided by only a single plane into two equal halves. e.g. Orchids.

(ii) In Valvate aestivation sepals and petals are arranged in such a way that they are just touching one another at the margin. e.g. *Calotropis*.

(iii) In this type of twisted aestivation, sepals and petals are arranged in such a way that the margin of one overlaps the margin of other. e. g. China rose. In imbricate aestivation. the margins of sepals or petals overlap but not in a specific direction. e. g. *Cassia*

4. Assertion: In some leguminous plants, the leaf base is swollen.

Reason: The swollen leaf base is called pulvinus.

- a) If both assertion and reason are true and reason is the correct explanation of assertion.  
**b) If both assertion and reason are true but reason is not the correct explanation of assertion**  
c) If assertion is true but reason is false.   d) If both assertion and reason are false

**Solution : -**

Leafbase is the lowermost part of the leaf by which the leaf is joined to the node of the stem. It protects the young axillary bud. In many legumes it is swollen. The swollen leaf base is known as pulvinus. It is responsible for sleep and shock movements of certain leaves, e.g., *Mimosa pudica* and *Cassia*.

5. The roots that originate from the base of the stem are:

- a) Prop roots   b) Lateral roots   **c) Fibrous roots**   d) Primary roots

**Solution : -**

Roots that originate from the base of stem constitute the fibrous root system as seen in the monocots example wheat plant.

6. Verticillaster inflorescence occurs in  
 a) Solonaceae b) Solonaceae c) Fabaceae **d) Fabaceae**
7. Bicarpellary gynoecium and oblique ovary occurs in \_\_\_\_\_ .  
 a) Mustard b) Banana c) Pisum **d) Brinjal**

**Solution : -**

In mustard, we find the bicarpellary gynoecium with oblique ovary.

8. Which of the following represents the functions of veins in the leaves?  
 a) Transport of water and minerals b) Mechanical support c) Transport of organic food material  
**d) All of these**

**Solution : -**

Important functions of veins are:

- (i) Conduction of water through xylem;
- (ii) Providing channels for translocation of organic nutrients;
- (iii) Conduction of minerals;
- (iv) The vein.s and veinlets provide skeletal support to the lamina so that It can remain stretched for its optimum functioning;
- (v) Veins and veinlets reduce the effect of wilting.

9. Smilax and Gloriosa belong to  
**a) Liliaceae** b) Solonaceae c) Leguminosae d) Cruciferae

10. The floral formula  $\oplus \begin{matrix} \text{♂} \\ \text{♀} \end{matrix} K_{(5)} \overline{C_{(5)}} A_5 \underline{G}_{(2)}$  belongs to the Family  
 a) Fabaceae b) Asteraceae **c) Solanaceae** d) Liliaceae.

11. Nicotiana, petunia belong to  
 a) Malvaceae b) Liliaceae c) Solonaceae **d) Cruciferae**

12. Match the following

(a) Valvate	(i) Chinarose
(b) Twisted	(ii) Calotropis
(c) Imbricate	(iii) Pea
(d) Vexillary	(iv) Cassia

- a) a (ii), b (i), c (iv), d (iii)** b) a (ii), b (iii), c (iv), d (i) c) a (i), b (ii), c (iii), d (iv) d) a (iv), b (iii), c (ii), d (i)

13. Radish is an example of  
**a) Fusiform root** b) Napiform root c) Conical root d) Tuberos root

14. Flower with radical symmetry is  
 a) Cassia **b) Datura** c) Pea d) Canna

15. Following table summarises the comparisons between phylloclades and cladodes (cladophylls).

	Phylloclade	Cladode
(i)	Both main stem and branches are modified to function like leaves	Only the branches are modified to take over the function of leaves
(ii)	Phylloclade has limited or definite growth	Cladode has unlimited or indefinite growth
(iii)	It consists of several nodes and internodes	It is usually one internode long
(iv)	True leaves are commonly caducous	True leaves are either reduced to scales or modified to spines
(v)	Examples: Ruscus aculeatus, Asparagus, etc	Examples: Opuntia, Euphorbiaroyleana, etc.

Pick up the wrong differences and select the correct option

- a) (i) and (ii) **b) (ii) and (v)** c) (iii) and (v) d) (ii) and (iv)

**Solution : -**

Phylloclades have unlimited (or indefinite) growth whereas cladodes have a limited (or definite) growth. Opuntia and Euphorbia royleana are the examples of phylloclades whereas Ruscus aculeatus and Asparagus are the examples of cladodes

16. Which plant will lose its economic value if its fruits are produced by induced parthenocarpy?  
a) Grape   **b) Pomegranate**   c) Banana   d) Orange

**Solution : -**

Testa is the edible part in pomegranate. It is not formed if fruits are produced by parthenocarpy (no seeds will be formed). Fruits of banana, grape and orange have seeds, so induced parthenocarpy in these fruits is beneficial.

17. In turmeric, stem is a  
a) Tuber   b) Bulb   **c) Rhizome**   d) Corm
18. Identify the group of plants possessing leaf tendrils:

- a) Pea, Glory lily**   b) Cucumber, Pumpkin   c) Watermelon, Grapevine   d) All of these

**Solution : -**

Leaf tendrils are thread-like sensitive structures which can coil around a support to help the plant in climbing. Leaf tendrils are usually unbranched and devoid of scales, e.g., leaflet tendrils in Pisum sativum (pea) and leaf tip tendrils in Gloriosa (Glory lily).

19. Select the mismatched pair  
a) Taproot system - Dicots   b) Fibrous root system - Monocots   **c) Fasciculated roots - Curcuma**  
d) Stilt roots - Sugarcane

**Solution : -**

Fasciculated fleshy roots are modified adventitious roots, in which swollen roots or root tubers occur in clusters from lower nodes of stem, e.g., Dahlia and Asparagus. In Curcuma, nodulose roots are found where the swellings occur only near the tips.

20. Match column I with column II and select the correct option from the given codes

column I		column-II
A Thorns	(i)	Vegetative propagation
B Phylloclades	(ii)	Defensive mechanism
C Runners	(iii)	Mechanical support
D Stilt roots	(iv)	Absorption of nutrition
E Haustoria	(v)	Photosynthesis

- a) A-(v), B-(iv), C-(iii), D-(ii), E-(i)   b) A-(ii), B-(v), C-(iii), D-(i), E-(iv)   **c) A-(ii), B-(v), c-(i), D-(iii), E-(iv)**  
d) A-(iii), B-(v), C-(iv), D-(i), E-(ii)

21. Which one of the following statement is 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

**Solution : -**

A proteinaceous aleurone layer is present in maize grain. It is true statement. Other statements are wrong. Because seed in grasses are endospermic, Banana is a parthenocarpic fruit and Sterile pistil is called pistillode.

22. The 'eyes' of the potato tuber represent  
**a) nodes**   b) root buds   c) flower buds   d) leaf buds

**Solution : -**

In potato, the stem nature is evident by the presence of eyes on its brownish corky surface. Each eye is a pit like structure and represents the node. At the rim of the eye, scale leaf scar is seen. Buds are situated in the pit of the eye.

23. Which one of the following statements is correct ?  
a) **Flower of tulip is a modified shoot**    b) In tomato, fruit is a capsule  
c) Seeds of orchids have oil-rich endosperm    d) Placentation in Primrose is basal

**Solution : -**

Flower is a modified shoot where shoot apical meristem gets transformed into floral meristem. In tomato, fruit is a berry. Seeds of orchids are non-endospermic, In primrose, the placentation is free-central.

24. Floral features are chiefly used in angiosperms identification because \_\_\_\_\_ .  
a) Flowers are of various colours    b) Flowers can be safely pressed  
c) **Reproductive parts are more stable and conservative than vegetative parts**  
d) Flowers are nice to work with

**Solution : -**

Vegetative parts are relatively less stable and exhibit changes due to the environmental factors quite readily. On the other hand, floral features are more conservative and can be relied upon. On the basis of reproductive parts of different flowers Linnaeus classified plants into different groups.

25. Which of the following plant parts in garlic and onion are edible?  
a) Underground stem    **b) Fleshy scale leaves**    c) Tunic    d) Adventitious roots
26. The swollen end of the stalk of flower is called  
a) Pedicel    **b) nodule**    c) Petiole    d) Rachis

27. Which one of the following is a xerophytic plant in which the stem is modified into a flat, green and succulent structure?  
a) Casuarina    b) Hydrilla    c) Acacia    **d) Opuntia**

28. Phyllode is present in:  
**a) Australian Acacia**    b) Opuntia    c) Asparagus    d) Euphorbia

**Solution : -**

In Australian Acacia, petiole and part of rachis become flattened into sickle-shaped phyllode for performing photosynthesis.

29. Ray florets have:  
a) Hypogynous ovary    b) Half inferior ovary    **c) Inferior ovary**    d) Superior ovary

**Solution : -**

Ray florets have inferior ovary and the reason is that the other parts of the flower are attached above the level of ovary. Example of such an ovary is ray florets of sunflower.

30. The 'eyes' of the potato tuber represent:  
**a) nodes**    b) root buds    c) flower buds    d) leaf buds.

**Solution : -**

In potato, the stem nature is evident by the presence of eyes on its brownish corky surface. Each eye is a pit like structure and represents the node. At the rim of the eye, scale leaf scar is seen. Buds are situated in the pit of the eye.

31. Flowers are unisexual in :  
a) Onion    b) Pea    **c) Cucumber**    d) China rose

**Solution : -**

Unisexual flowers are those in which only one reproductive whorl is present, either androecium or gynoecium as in cucumber.

32. The edible part of turnip is  
a) Modified Adventitious roots    **b) Modified tap root**    c) Stem    d) Underground stem

33. Juicy hair-like structures observed in the lemon fruit develop from

a) Exocarp b) Mesocarp **c) Endocarp** d) Mesocarp and endocarp

34. A family delimited by type of inflorescence is \_\_\_\_\_ .

a) Fabaceae **b) Asteraceae** c) Solanaceae d) Liliaceae

**Solution : -**

(i) Asteraceae (Compositae) is characterised by the inflorescence head or capitulum, consisting of a few or large number of flowers closely arranged on an axis surrounded by involucre bracts.

(ii) The whole head or capitulum with racemose arrangement is apparently similar to a single flower.

35. Arrangement of flower on floral axis is termed as

a) Phyllotaxy b) Venation **c) inflorescence** d) inflorescence

36. Which one of the following pairs is wrongly matched while the remaining three are correct?

a) Agave-Bulbils b) Grass-Runner **c) Water hyacinth-Runner** d) Bryophyllum-Leaf buds

37. Which of the following plants possesses culm?

a) Cuscuta b) Zingiber **c) Bamboo** d) Cocos

**Solution : -**

Erect, unbranched stems with distinct nodes and internodes are called culms, nodes are swollen giving a jointed appearance, e.g., bamboo.

38. Bicarpellary ovary with parietal placentation and false septum is found in

**a) Cruciferae** b) Leguminosae c) Malvaceae d) Compositae

39. Which of the following represents the edible swollen portion of *Allium cepa*?

a) Aerial stem b) Underground stem c) Internodes **d) Leaf bases**

40. The morphological nature of the edible part of coconut is:

a) Cotyledon **b) Endosperm** c) Pericarp d) Perisperm

**Solution : -**

The morphological nature of the edible part of coconut is endosperm. The edible part of the coconut is cellular endosperm (white kernel) and coconut water is free nuclear endosperm.

41. The term polyadelphous is related to :

a) Calyx b) Gynoecium **c) Androecium** d) Corolla

**Solution : -**

When the stamens are united into more than two bundles, it is known as polyadelphous.

42. In some \_\_\_\_\_ the leaf base may become swollen and is called as \_\_\_\_\_

a) monocots, sheathing leaf base **b) legumes, pulvinus** c) legumes, sheathing leaf base  
d) monocots, pulvinus

**Solution : -**

In many legumes, leaf base is swollen, it is known as pulvinus. It is responsible for sleep and shock movements of certain leaves, e.g., *Mimosa pudica*

43. Endosperm, a product of double fertilisation in angiosperms is absent in the seeds of

a) coconut **b) orchids** c) maize d) castor.

44. Assertion: The cymose type of inflorescence has limited growth.

Reason: In cymose inflorescence the main axis terminates in a flower

**a) If both assertion and reason are true and reason is the correct explanation of assertion.**

b) If both assertion and reason are true but reason is not the correct explanation of assertion

c) If assertion is true but reason is false. d) If both assertion and reason are false

**Solution : -**

Cymose inflorescence is the name of determinate or definite inflorescence in which the tip of the main axis terminates in a flower and further growth continues by one or more, lateral branches which also behave like the main axis. The arrangement of flowers is either basipetal or centrifugal.

45. The coconut water and the edible part of coconut are equivalent to:

- a) **Endosperm** b) Endocarp c) Mesocarp d) Embryo

**Solution : -**

The coconut water and edible part of coconut are equivalent to endosperm. The coconut water is nothing but it is free nuclear endosperm and the surrounding white kernel is the cellular endosperm.

46. Select the incorrect statement out of the following.

- a) Assimilatory roots capable of photosynthesis are present in *Tinospora* and *Trapa*  
 b) Haustoria of *Cuscuta* make connections with both xylem and phloem tissues of host  
 c) Reproductive roots of *Ipomoea batata* help in vegetative propagation.  
**d) Epiphytic roots of *Vanda* possess well developed root caps and root hair.**

**Solution : -**

Aerial or epiphytic roots hang down in air, they do not possess root caps and root hair instead they possess a covering of dead spongy tissue called velamen.

47. Which part of the coconut produces coir?

- a) Seed coat b) **Mesocarp** c) Epicarp d) Pericarp

**Solution : -**

In coconut (drupe or stone fruit), epicarp is thin, mesocarp is fibrous, produces coir, endocarp bears three eye spots and encloses a single seed with brown testa, oily endosperm, embryo and watery fluid.

48. Which of the following represents the edible part of the fruit Litchi

- a) Endocarp b) Pericarp c) **Juicy aril** d) Mesocarp

49. Regarding to androecium of given families. Match the following

(a) Brassicaceae	(i) 2+4
(b) Fabaceae	(ii) Diadelphous
(c) Solonaceae	(iii) Epipetalous
(d) Liliaceae	(iv) Six stamens in two whorl 3+3

- a) a (iv), b (ii), c (iii), d (i) b) a (i), b (ii), c (iii), d (iv) c) **a (iv), b (iii), c (ii), d (i)** d) a (ii), b (i), c (iv), d (iii)

50. Which floral conditions are represented by the symbols  $\oplus$  and % respectively?

- a) Zygomorphic and actinomorphic flowers b) **Actinomorphic and zygomorphic flowers**  
 c) Hypogynous and epigynous flowers d) Bisexual and unisexual flowers