

# NEET- 2020- 45 Days Crash Course

I



Chapter Name : MORPHOLOGY IN FLOWERING PLANTS

ிரு QUIZ – NEET



Which of the following is not related to corm

(A) Tunic

(B) Lateral buds

(C) Nodes

(D) Scale leaves



# Ans [A]

#### Bulb is surrounded by a sheath of dry membranous scale called tunic which is absent in a corm



Bulb



Corm



A stem with distinct solid nodes and hollow internodes is

(A) Sobole

q

(B) Culm

(C) Scape

(D) Intercalary stem



# Ans [B]

Culm is an erect stem having solid nodes & hollow internodes. *Triticum vulgare* (wheat) and *Bambusa arundinaceous* are example of culm.







#### Multicellular hairs are found on

(A) Root

(C) Both (a) and (b)

- (B) Stem
- (D) None of the above



# Ans [B]

In stem hairs if present, they are multicellular.



#### Free lateral stipules occur in

- (A) Mango / Mangifera
- (C) Rice / Oryza

q

- (B) Maize / Zea
- (D) China Rose / Hibiscus



# Ans [D]

A pair of freely arranged stipules present on either side of the leaf base are called free lateral stipules. e.g., Hibiscus, Gossypium etc.







#### A leaf is identified from

- (A) Flat green lamina
- (C) Presence of axillary bud

- (B) Presence of leaf blade and petiole
- (D) Occurrence of chlorophyll





# Ans [C]

Leaf is a thin flattened out growth of the plant arising from the node of the stem and having a bud in its axil.



Leaves fall off from branches in winter due to

- (A) Formation of abscission layer
- (C) Fall in temperature

- (B) Shortening of day length
- (D) All the above



### Ans [A]

The abscission layer, a barrier of thin-walled parenchyma cells, develops across the stem (or petiole) at the base of a leaf, flower, or fruit as it approaches the time of falling from a plant



#### In Tamarind (Imli) the pinnate leaf is

- (A) Tripinnate
- (C) Paripinnate

- (B) Bipinnate
- (D) Imparipinnate



# Ans [C]

The leaves having even number of leaflets are termed as paripinnate,

e.g., Cassia, Tamarind etc.



Tamarind leaf



Presence of sheathing leaf base and ligule are characteristic of

(A) Cycas leaf

(B) Fern leaf

(C) Banana leaf

(D) Grass leaf



### Ans [D]

In grasses and many monocots, the leaf base is broad and surrounds the stem as an envelope, such a leaf base is called sheathing leaf base. An additional outgrowth is present between leaf base and lamina. It is called ligule. e.g., Grasses.



### Approximate diameter of Victoria leaf is

(A)	1 m		(B)	1.3 m
(C)	2 m		(D)	3 m



### Ans [B]

Victoria regain an aquatic plant with floating leaves which are 4 meters in radius and have diameter of 1.5-1.8 m. These are the largest leaves in plant kingdom.





A dicotyledonous plant showing parallel venation is

(A) Dioscorea

(B) Smilax

(C) Calophyllum

(D) Hibiscus





### Ans [C]

Parallel venation is the characteristic feature of monocotyledons. Exceptionally few dicots show parallel venation, e.g., Calophyllum and Eryngium.



In Lathyrus aphaca, the leaves are modified into

(A) Spine

q

(B) Tendril

(C) Scale

(D) Stem – like structure



# Ans [B]

The leaves are modified in to slender wiry and coiled structures called leaf tendrils. The tendril may be formed by entire leaf e.g., Lathyrus aphaca (Wild pea).







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In sweet pea, the tendrils are modified

- (A) Stem branches
- (C) Leaves

- (B) Leaflets
- (D) Stipules



# Ans [B]

### Terminal leaflets modified in to tendril in *Lathyrus odoratus* (Sweet pea).







#### Bud scales of Ficus are modified

(A) Leaves

(C) Stem

- (B) Stipules
- (D) Prickles



# Ans [B]

The stipules are the small lateral appendages present on either side of the leaf base. Bud scales stipules are scaly which protect the leaf buds by surrounding them. e.g., Artocarpus, Banyan etc.





Imparipinnate leaf is the one where

- (A) Leaflets are borne in pairs
- (C) Leaflets are large

q

- (B) Leaflets are small
- (D) Rachis is terminated by an odd leaflet



### Ans [D]

Imparipinnate leaf is an unipinnate leaf with odd number of leaflets. The rachis is terminated by single unpaired leaflet. e.g., Neem, Rose, Murraya.





### Storage leaves occur in

- (A) Allium
- (C) Triticum

- (B) Zizyphus
- (D) Trapa



### Ans [A]

In Allium leaves become fleshy due to storage of water or food material. It is because of their characteristic nature of storing water and food that they are called storage leaves.



### Phyllotaxis is

q

- (A) Mode of leaf arrangement on stem
- (B) Types of roots
- (C) Arrangement of sepals and petals in a flower
- (D) Type of ovary



# Ans [A]

Phyllotaxis or phyllotaxy is the arrangement of leaves on a plant stem



### Tendrillar stipules occur in

- (A) Dolichos lablab
- (C) Smilax

q

- (B) Acacia
- (D) Mango



# Ans [C]

When stipules are thin and modified in to wire like structure these are known as tendrillar. These are help plant in climbing to a support . e.g., Smilax.





#### Adnate stipules occur in

- (A) China Rose
- (C) Rose

q

- (B) Gardenia
- (D) Cotton


# Ans [C]

Stipules are the lateral appendages which are found attached at the base of the leaf. They protect the leaf in its bud stage. Adnate stipules are the two stipules which are attached to the petiole leaving the anterior end free. For e.g –Rose





### Onion stores food in

(A) Underground stem

(C) Root

q

- (B) Fleshy scales
- (D) Shoot



# Ans [B]

In Onion and garlic (underground bulb) scale leaves store food and become fleshy.



#### Main function of leaf is

q

- (A) Manufacture of food
- (C) Increasing grandeur

- (B) Nerve impulse conduction
- (D) Exchange of gases



# Ans [A]

The green colour of leaf is due to presence of the photosynthetic pigment – chlorophyll which helps plants to synthesize organic food.



A monocot can be distinguished from a dicot by

(A) Phyllotaxy

q

(B) Aestivation

(C) Venation

(D) Vernation





## Ans [C]

The arrangement of veins in the lamina of a leaf is called venation. Reticulate venation is found in dicotyledons when parallel venation is found in monocotyledons.





#### Petiole is modified into tendril in

- (A) Passiflora
- (C) Pisum

- (B) Gloriosa
- (D) Clematis



# Ans [D]

In few plants the petioles are modified in to tendrils and helps the plant climbing e.g., Clematis and Tropaeolum.





### Swollen spongy petiole is present in

- (A) Hydrilla
- (C) Ruppia

- (B) Eichhornia
- (D) Pistia





## Ans [B]

In some plants petiole becomes swollen and spongy due to the development of aerenchyma. The type of petioles encloses much air and helps the plant to float. e.g., *Trapa bispinosa* and *Eichhornia*.





### Which part of leaf shows venation

(A) Lamina

q

(C) Epipodium

- (B) Mesopodium
- (D) Leaflet



# Ans [C]

The green expanded portion of the leaf is called the lamina (epipodium). Lamina is specialized to perform photosynthesis. Lamina bears network of Veins and Vein lets.







D

When leaves bear floral buds in their axil, they are called

- (A) Cotyledonary leaves (Scutellum)
- (C) Scale leaves (Cataphylls)

- (B) Bract leaves (Hypsophylls)
- (D) Floral leaves (Sporophylls)



# Ans [B]

Hypsophylls or Bract Leaves are special leaves which bear floral buds at their axils.





D

Axillary bud and stipules are absent in

- (A) Simple leaves
- (C) Cauline leaves

- (B) Leaflets
- (D) Ramal leaves



# Ans [B]

As leaflets are divided leaves there are no axillary buds at their point of attachment with the rachis. There are no stipules in leaflets .



D

Quadrifoliate palmate compound leaf is found in

(A) Trigonella

(B) Trifolium

(C) Marsilea

(D) Bombax



# Ans [C]

### Quadrifoliate leaf has four leaflets attached to the tip of petiole. e.g., Marsilea, Paris quadrifolia.



Marsilea



Ε

Leaves of which plant are economically important

q

(A)	Coffee		(B)	Теа
(C)	Ocimum		(D)	Palms



# Ans [B]

Tea obtained from the leaves of Camellia sinensis (family - Theaceae).





D

In Ficus (Rubber plant) the young leaves are protected by reddish structures called bud scales. These are

(A) Stipules

(B) Scales

(C) Bracts

(D) Bracteoles



## Ans [A]

Scales which protect the buds are called bud scales (convolute). Sometimes they are the modified into stipules. The bud scales fall off as the buds open, e.g., Artocarpus and Ficus.



Ficus – stipule

D

### Leaf is

- (A) Exogenous lateral outgrowth
- (C) Superficial dorsal outgrowth

- (B) Endogenous lateral outgrowth
- (D) Vascular lateral growth



## Ans [A]

The leaf is a green, flat, thin expanded lateral appendage of stem which is borne at a node and bears a bud in its axil. It is exogenous in origin and develops from the leaf primordium of shoot apex.



### Rachis is present in

- (A) Pinnate compound leaf
- (C) Both correct

- (B) Palmate compound leaf
- (D) Both wrong



# Ans [A]

In pinnately compound leaves, a row of leaflets forms on either side of an extension of the petiole called the rachis





D

### The leaf of Mimosa pudica is

(A) Simple

q

(C) Bipinnate

- (B) Bifoliate
- (D) Trifoliate



## Ans [C]

When the single leaflets of the unipinnate leaf gets replaced with unipnnate leaves themselves becomes bipinnate leaves.

Example: Mimosa pudica



Leaves of Mimosa pudica



A phyllotaxy with two or more leaves present on the same node is

(A) Opposite

(B) Verticillate

(C) Whorled

(D) Cyclic



# Ans [C]

When more than two leaves arise at a node of stem and its branches and form a whorl, the phyllotaxy is said to be whorled as in Alstonia, Nerium etc. In Alstonia five leaves are present in a whorl while in Nerium three leaves are present in a whorl





#### Phyllode is an adaptation to

- (A) Heterophylly environment
- (C) Mesophytic environment

- (B) Halophytic environment
- (D) Xerophytic environment



## Ans [D]

Many xerophytes reduce the size of their leaves to minimize water loss. Such plant develop phyllodes to carry out photosynthesis. e.g., Acacia, Melanoxylon and Parkinsonia.





D

#### In Calotropis the phyllotaxy is

(A) Alternate

q

(C) Opposite and superposed

- (B) Verticellate
- (D) Opposite and decussate



## Ans [D]

In opposite phyllotaxy the two leaves at each node are always opposite one another. If the successive pairs of leaves be placed at right angles to one another, the arrangement is termed opposite decussate e.g., Calotropis, Zinnia, Tulsi, Quisqualis.



Opposite deccusate phyllotaxy – calotropis



When leaves fall individually at different times it is called

(A) Caducous

(B) Deciduous

(C) Persistent

(D) Abscission

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# Ans [C]

When leaves remain on the plant for more than one year, fall off individually at different times so that the plant gives an evergreen look , they are called persistant e.g., Eucalyptus.





On the margins of leaves of a plant called Bryophyllum tiny plants grow complete with roots. These tiny plants fall of and continue to grow. This is a form of

(A) Hermophroditism

(B) Vegetative reproduction

(C) Sexual reproduction

(D) Reproduction by fission



# Ans [B]

In some plants the vegetative propagation is carried out by the production of epiphyllous buds on leaves. Such leaves are called reproductive leaves. e.g., Bryophyllum.

Leaf bud s



D

In Banana, true stem is underground. The stem like structure outside soil is formed by

(A) Peduncle

q

(B) Petiole of leaves

(C) Leaf bases

(D) Overlapping of leaves



### Ans [C]

The banana plant is the largest herbaceous flowering plant. Banana plants are often mistaken for trees. Bananas have a false stem (called pseudostem), which is made by the lower part of the leaves.





Pseudo stem



#### Tuberous roots are found in

- (A) Ginger
- (C) Potato

- (B) Onion
- (D) Sweet potato



A tuberous root is an enlarged fleshy root modified as a storage organ with shoots produced at one end and roots produced at the other



Tuberous root in sweet potato



D

### Pinnately parallel venation is found in

(A) Canna(B) Grass(C) Zizyphus(D) Castor



### Ans [A]

In Pinnate parallel venation the leaf lamina possesses single prominent vein which gives rise to a large number of lateral veins. All the lateral veins run parallel towards margin. e.g., Canna, Banana, Curcuma etc.





D

Ochreate stipules occur in leafy vegetable

(A) Amaranthus

(B) Mentha

(C) Platanus

q

(D) Rumex



# Ans [D]

Membranous tubular stipules that ensheath the axillary bud and a part of internode is called ochraceous stipule. It is formed by the union of two stipules. e.g., Polygonum and Rumex.



Rumex – stipule



#### Parallel venation occurs in

(A) Monocots

q

(C) All angiosperms

- (B) Dicots
- (D) Ferns



### Ans [A]

In parallel venation (striate venation), veins and veinlets run parallel to each other. Parallel venation is the characteristic feature of monocots.



### Bombax leaf is

q

- (A) Tripinnate
- (C) Multifoliate

- (B) Unipinnate
- (D) Quadrifoliate



# Ans [C]

In Bombax, the petiole bears five or more leaflets at the tip like the fingers of the palm. Therefore, it is categorized as palmately compound multifoliate leaf.





Name the plant having reticulate venation

q

(A) Musa(B) Mangifera(C) Oryza(D) Canna

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# Ans [B]

Because Mangifera (mango) is a dicot plant and reticulate venation found in dicots.



### In Nepenthes the pitcher is modified

- (A) Whole leaf
- (C) Lamina

q

- (B) Leaf apex
- (D) Petiole



## Ans [C]

In case of Nepenthes, Dischidia and Sarracenia leaf-lamina is modified into pitcher-like structure called leaf-pitcher



**Pitcher of Nepenthes** 



In Opuntia the spines are modification of

(A) Leaf

(C) Epidermis

(B) Branch(D) Flower



### Ans [A]

A pointed structure formed by the modification of entire leaf or part of a leaf is called a spine. Leaf or entire leaf may be modified into spines. e.g., Opuntia (axillary branches are modified in to spines).





D

Leaf of which of the following plant shows circinate venation at young stage

(A) Fern (B)

(C) Hydrilla

(D) Funaria

Mango



### Ans [A]

Circinate venation is coiling of young leaves. It is a characteristic feature of ferns



#### Isobilateral leaf is found in

(A) Dicots

q

(C) Hydrophytes

- (B) Monocots
- (D) Xerophytes



# Ans [B]

In a isobilateral leaf, both adaxial and abaxial surface are uniform in colour and show similar structure. Both surface receive light. e.g., Monocots (Maize).



Maize leaf



Anatomy of isobilateral leaf



The leaves the Utricularia plant are modified into

- (A) Hooks (B) Tendrils
- (C) Bladders

(D) Pitchers



# Ans [C]

In Utricularia (Bladderwort) some of the leaves are modified to form small bladders (utricles) each of 1-3mm diameter.







The reticulate venation is commonly found in the leaves of

(A) Monocot plants

(B) Dicot plants

(C) Bryophytes

(D) Thallophytes



# Ans [B]

In reticulate venation the main veins divide into various branches and make a net-like structure in the lamina. It is found in most of the dicot plants.





The branch system of the shoot bearing a group of flowers is called as

(A) Placentation

(B) Venation

(C) Inflorescence

(D) Phyllotaxy



# Ans [C]

An inflorescence is a group or cluster of flowers arranged on a stem that is composed of a main branch or a complicated arrangement of branches. Morphologically, it is the modified part of the shoot of seed plants where flowers are formed.



Racemose inflorescence (A), (B) Raceme (C), (D) Corymb



The most important function of inflorescence is to help in

- (A) Forming large number of fruits
- (B) Attracting insects for cross pollination
- (C) Dispersal of seeds

q

(D) Release of pollen grains

Е



# Ans [B]

The most important function of inflorescence is it makes flower more conspicuous to pollinating agents (insects/birds) so that chances of cross pollination are high.



The most advanced type of inflorescence is

- (A) Corymb (B)
- (C) Spadix

q

(D) Capitulum

Catkin



### Ans [D]

Capitulum (Head) inflorescence is a characteristic of compositae (Asteraceae)family Penduncle is flattened to form receptacle that bears centripetally arranged small sessile flowers called florets surrounded by involucre of bracts. e.g., Marigold, Sunflower.

The capitulum inflorescence has been considered to be the most advanced and perfect due to the following reasons

- The individual flowers are quite small and massed together in heads, and therefore, they add to greater conspicuousness to attract the insects and flies for pollination.
- At the same time there is a considerable saving of material in the construction of the corolla and other floral parts.







D

Amentum (Catkin) inflorescence is found

- (A) Mulberry (Morus)
- (C) Acalypha (Cats tail)

- (B) Poplulus (Poplar)
- (D) All of these


# Ans [D]

Catkin (Amentum) is a compact spike like inforescence in which the peduncle is thin and weak and the flowers are sessile and unisexual e.g., Morus (Mulberry), Populus (Poplar), Acalypha (Cats tail), Salix (Willow), Betula (Birch).



### Catkin infloresence



D

### Capitulum is a modification of

- (A) Raceme
- (C) Spadix

- (B) Spike
- (D) Hypanthodium



## Ans [A]

Capitulum (Head) : It is a modified raceme in which the main axis is flattened, called receptacle.

#### Characteristics of inflorescence

- The main axis or receptacle becomes suppressed, and almost flat,
- Flowers (also known as florets) are sessile (without stalk) so that they become crowded together on the flat surface of the receptacle. The florets are arranged in a centripetal manner on the receptacle
- The individual flowers (florets) are bracteate.



Capitulum Inflorecence



D

Inflorescence in Musa paradisiaca (banana) is a

(A) Raceme

(B) Catkin

(C) Spadix

(D) Verticellaster



# Ans [C]

Spadix is a modification of catkin spike in which the peduncle is thick and fleshy with upper part sterile (called appendix) and lower part bearing male, neuter and female unisexual flower surrounded by a large bract called spathe. e.g., Musa paradisiaca.

