



# **BIOLOGY**

**BOOKS - KUMAR PRAKASHAN KENDRA**

**BIOLOGY (GUJRATI ENGLISH)**

**MORPHOLOGY OF FLOWERING  
PLANTS**

**Section A Exam Oriented Questions Answer From  
Darpan**

1. Describe various parts of a flowering plant with diagram.



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2. Give the type and functions of root system on the basis of its origin.



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3. Explain about Regions of The Root with diagram.



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4. Describe modifications of root specific functions.



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5. What is stem ? Describe parts of stem and normal functions.



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6. Describe modifications of stem for specific functions.



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7. What Is leaf? T Give main parts of leaf.



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**8.** What is called venation ? Describe its types.



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**9.** Describe types of leaves.



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**10.** What is phyllotaxy ? Explain .



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**11.** Describe modification of leaves for specific functions with example.



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**12.** What is inflorescence ? Describe its types.



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**13.** Describe parts of a typical flower.



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**14.** What is called Aestivation ? Describe its types.



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**15.** On the basis of numbers, give types of stament and give examples.



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**16.** Describe structure and types of Gynoecium.



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**17.** What is placentation ? Describe types of placentation .



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**18.** Describe parts of fruit with diagram .



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**19.** What is seed? Describe structure of dicotyledonous and monocotyledonous seed with diagram.



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20. What is meant by floral formula ? Which signs are used to make floral formula ?

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21. Explain : How floral diagram is drawn ?

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22. Mention vegetative characters and floral characters of fabaceae family



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**23.** Write a note on solanaceae family.



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**24.** Write a note on Lillaceae family.



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**Section B Diifference Scientific Reasons**

1. Tap root system and fibrous root system



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2. Simple leaf and compound leaf



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3. Racemose inflorescence and cymose  
inflorescence



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4. The root of Rhizophora plant is called breathing root.



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## Section B Give Scientific Reasons

1. The root of Rhizophora plant is called breathing root.



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2. Opuntia has phylloclade.



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3. Though Ginger is gram in/under the soil. It is it steni not a root.



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**Section C    Defination    Explanation    Terms Importance**

**1. Leaf :**



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**2. Root :**



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**3. Leaf like stem Phylloclade :**



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**4. Stolon :**



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**5. Stipules :**



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**6. Spine :**



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**7. Bulb :**



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**8. Phylloclade :**



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**9. Aestivation :**



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**10. Placentation :**



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**11. fruit :**



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**12. Hypogynous flower/ Superior ovary :**



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**13. Scutellum :**



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**14. Drupe :**



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## **Section C Importance**

**1. Aleurone layer :**



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**2. Epidermal layer :**



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**3. Rhizom :**



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**4. Stipular tendril :**



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## Section D Textual Exercise

1. 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



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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 a pinnately compound leaf different from a palmately compound leaf?



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4. Explain with suitable examples the different types of phyllotaxy.

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5. Define the following terms :

(a) Aestivation (b) Placentation (c)

Actinomorphy (d) Zygomorphic (e) Superior ovary (f) Perigynous flower (g) Epipetalous

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**6. Differentiate between :**

(a) Racemose and cymose inflorescence

(b) Fibrous root and adventitious root

(c) Apocarpous and syncarpous ovary



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**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.



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9. Take one flower each from the families Fabaceae and Solanaceae and write its semi technical description. Also draw their floral diagram after studying them.



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**10.** Describe the various types of placentations found in flowering plants.



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**11.** What is a flower ? Describe the parts of a typical angiosperm flower.



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**12.** How do the various leaf modifications help plants ?



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



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**14.** Write the floral formula of a actinomorphic, bisexual, hypogynous flower with five united sepals, five free petals, five free stamens and

two united carpels with superior ovary and axile placentation.



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15. describe the arrangement of floral members in relation to their insertion on thalamus.



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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::B::C::D**



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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: A::D**



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**3.** The mature seeds of plants such as gram and peas , possess no endosperm, because

- A. These plants are not angiosperms
- B. There is no double fertilization in them
- C. Endosperm is not formed in them

D. Endosperm gets used up by the developing embryo during seed development

**Answer: B::D**



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4. Root 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::D**



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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: A::D**



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**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::D**



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7. Many pulses of daily use belong to one of the families below :

A. Solanaceae

B. Fabaceae

C. Liliaceae

D. Poaceae

**Answer: A::B::C**



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**8.** The placenta is attached to the developing seed near the

A. Testa

B. Hilum

C. Micropyle

D. Chalaza

**Answer:**



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**9.** Which of the following plants is used to extract the blue dye ?

A. Trifolium

B. Indigofera

C. Lupin

D. Cassia

**Answer: A::D**



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**10. Match the followings columns.**



A. (a-1), (b-2), (c-2), (d-4)

B. (a-2), (b-1), (c-4), (d-3)

C. (a-4), (b-2), (c-1), (d-3)

D. (a-2), (b-4), (c-1), (d-3)

**Answer: A::B::C::D**



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## Section E Very Short Answer Type Questions

1. Write floral formula for a flower which is bisexual, actinomorphic, sepals five, twisted

aestivation, petals five, valvate aestivation, stamens six, ovary trilocular, syncarpous, superior, trilobular with axile placentation.



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2. In *Opuntia* the stem is modified into a flattened green structure to perform the function of leaves (i.e., photosynthesis). Cite some other examples of modifications of plant parts for the purpose of photosynthesis.



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3. In swampy areas like the Sunderbans in West Bengal, plants bear special kind of roots called .....



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4. In aquatic plants like Pistia and Eichhornia, leaves and roots are found near .....



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5. Reticulate and parallel venation are characteristic of..... And..... respectively.

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6. Which parts in ginger and onion are edible ?

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7. In epigynous flower, ovary is situated below the .....

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**8.** Add the missing floral organs of the given floral formula of Fabaceae.



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**9.** Name the body part modified for food storage in the following :

(a) Carrot .....

(b) Colocasia .....

(c) Sweet potato .....

(d) Asparagus .....

(e) Radish .....

(f) Potato .....

(g) Dahlia .....

(h) Turmeric .....

(i) Gladiolus .....

(j) ginger .....

(k) portulaca .....



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



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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?



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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.



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

$$(i) \oplus K_{(5)} C_{(5)} A_{(5)} G_{(2)}$$

$$(ii) \% K_{(5)} C_{1+2+2} A_{(9)} +1 G_1$$

$$(iii) \oplus K_5 C_5 A_{5+5} G_{(5)}$$



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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.



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7. You have heard about several insectivorous plants that feed on insects. Nepenthes or the pitcher plant is one such example, which usually grows 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 though it can photosynthesize like any other green plant ?



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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 ?



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**9.** How can you differentiate between free central and axile placentation ?



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**10.** Tendrils are found in the following plants. Identify whether they are stem tendrils or leaf tendrils. (a) Cucumber, (b) Peas, (c) pumpkins, (d) Grapevine, (e) Watermelon



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11. Why 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.



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**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.



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**14.** Differentiate between

- (a) Bract and Bracteole
- (b) Pulvinus and Petiole
- (c) Pedicel and Peduncle

(d) Spike and Spadix (e) Stamen and staminoid

(f) Pollen and Pollenium



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## Section E Long Answer Type Questions

1. Distinguish between families - Fabaceae, Solanaceae, Lillaceae on the basis of gynoecium characteristics (with figures). Also write economic importance of any one of the above family.



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



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3. 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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4. 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.



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5. The arrangements 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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6. Sunflower is not a flower. Explain.



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7. How do you distinguish between hypogean germination and epigeal germination ? What is



the role of cotyledon (s) and the endosperm in the germination of seeds ?



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8. Seeds of some plants germinate immediately 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 dormancy and some methods to break it.



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## Questions From Module Important Mcq For Neet

1. The plant of Liliaceae family as medicine

A. Tulip

B. Gloriosa

C. Aloevera

D. Mulithi

**Answer: A**



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2. What is indicated by  $K_{(5)}$  ?

A. Five sepals united

B. Five sepals free

C. Five petals united

D. Five petals free

**Answer: A::D**



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3. What is the symbol for bract ?

A. Br

B. Ebr

C. Brl

D. Abrl

**Answer: B**



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4. Which type of aestivation is seen in calotropis ?

A. Valvete

B. Twisted

C. Imbricate

D. Vaxillary

**Answer: A**



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