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# BIOLOGY

## BOOKS - PRADEEP BIOLOGY (HINGLISH)

## MORPHOLOGY OF FLOWERING PLANTS

### Curiosity Questions

**1.** Why do plants belonging to pea family bear nodulated roots ? What is inside the nodules ?

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**2.** Why the plants growing in saline swamps near the sea shores develop pneumatophores ?

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**3.** Why are canopy of Banyan tree extend over a large area ?

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**4.** Why the stems of flowering plants attain diverse forms ?

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**5.** Why do some modified stems store reserve food materials ?

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**6.** What is maize grain usually called as a fruit and not a seed ?

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## Notable Questions

**1.** Underground storage organs (such as potato tubers, roots of sweet potato, beet, carrot, etc.) generally store

carbohydrates in the form of starch grains. How do they store starch when they do not get light for photosynthesis ?

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**2.** Tubers of Sweet potato (Ipomoea batata) take part in vegetative propagation and grow to form new plants. How can we ascertain that they are not modified stems.

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**3.** What are angiosperms ?

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**4.** What is Floral Formula ?

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**5.** What is a floral diagram ? What special features does a floral diagram inform ?

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## Ncert Exercises With Answers

**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 pinnately compound leaf different from 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) Actinomorphic

(d) Zygomorphic

(e) Superior ovary

(f) Perigynous flower

(g) Epipetalous Stamen

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**6.** Differentiate between

(a) Racemose and cymose inflorescence

(b) Fibrous roots and adventitious roots

(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 the modification of stem with suitable examples

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**9.** Take one flower each of families Fabaceae and Solanaceae and write its semitechnical description. Also draw their floral diagrams 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.

Watch Video Solution

**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 of inflorescence in flowering plants.

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

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## Additional Questions Very Short Answer Questions

**1.** What are angiospermic plants ?

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**2.** What are Pneumatophores ?

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**3.** Name the roots that arise from any other plant part except the radicle.

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**4.** Name the plant with lightest seeds.

Watch Video Solution

**5.** Give examples of angiosperms in which stems are not developed.

Watch Video Solution

**6.** Give examples of angiosperms in which roots are not developed.

Watch Video Solution

**7.** Give examples of angiosperms in which plant is devoid of green leaves.

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**8.** Name the different kinds of compound leaves.

Watch Video Solution

**9.** What is the function of pulvinus? Give one example of the plant having it.

Watch Video Solution

**10.** What term is given to the arrangement of leaves on the stem ?

Watch Video Solution

**11.** What are adventitious roots ? Give one example.

Watch Video Solution

**12.** Name any one plant in which adventitious roots develop chlorophyll and photosynthesise.

Watch Video Solution

**13.** What takes over the function of photosynthesis in Opuntia ?

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**14.** What is a bulbil ?

Watch Video Solution

**15.** Why are potato and sweet potato called tubers ?

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**16.** Which same plant part has transformed Into the following different modlftcatlons (i) tendril of pumpkin (ii) thorn of Citrus.

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**17.** Name an insectivorous angiosperm without roots,

Watch Video Solution

**18.** How annuals differ from biennial?

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**19.** Name a free floating aquatic plant with photosynthetic roots.

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**20.** Name two plants that produce rhizomes.

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

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**22.** What is heterophylly ?

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**23.** Define venation.

Watch Video Solution

**24.** Define phyllotaxy.

Watch Video Solution

**25.** Name a plant in which leaf is bipinnately compound.

Watch Video Solution

**26.** What is phyllode ? Give one example of it.

Watch Video Solution

**27.** In which type of leaf the stomata remain distributed only on lower surface ?

Watch Video Solution

**28.** What type of fruit tomato is ?

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**29.** Give the names of the plants in which following types of inflorescences are found : Catkin, Capitulum and Spikelet.

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**30.** Name as cultivated plant in which neither fruits nor seeds are formed.

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**31.** Give three examples of false fruit.

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

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**33.** Reticulate and parallel venation are the characteristic of ..... and ..... Respectively.

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**34.** Which parts of ginger and onion are edible ?

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**35.** In epigynous flower , ovary is situated below the ..... .

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

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## Additional Questions Short Answer Questions

**1.** Distinguish between alternate and whorled phyllotaxy.

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**2.** Pick out the plant with whorled arrangement of leaves from the list given below anti say why It Is categorised so? Neem, Nerlum , Nepenthes.

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**3.** Pick out the plant with unipinnate type of compound leaves from the list given below and say why It Is

categorised so ? Trifolium, Neem, Moringa.

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**4.** Differentiate between root climbers and stem climbers.

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**5.** What are false fruits ? Give two examples .

Watch Video Solution

**6.** Mention two types of venation with examples.

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**7.** Mention the function of (i) Underground stem of ginger (ii) Axillary bud of citrus.

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**8.** Mention the function performed by

(i) Scale leaf of onion (ii) axillary bud of cucumber (iii) Tap root of beet.

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**9.** Write the floral formula of family-Solanaceae.

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**10.** Write short notes on tetradynamous condition of stamens.

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**11.** What is imbricate aestivation ?

Watch Video Solution

**12.** What type of ovary is found in family-Solanaceae ?

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**13.** Write the botanical names of (i) Tomato, (ii) Chillies and (iii) Tobacco.

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

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**15.** 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 through it can photosynthesize like any other green plant ?

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**16.** How can you differentiated between free central and axile placentation ?

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**17.** 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

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**18.** What do you understand by special types of inflorescence ? Describe them with diagrams and examples.

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**19.** Give any four differences between rhizome and bulb.

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**20.** Differentiate between stolon and sucker.

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**21.** Differentiate between runner and stolon.

Watch Video Solution

**22.** What is aestivation? Describe its various types found in petals.

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

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**24.** How would you differentiate leaflets of a compound leaf from simple leaves of a branch ? Give an example of a plant with bipinnate leaves.

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**25.** Why is the leaf of Bombax categorised as palmately compound multifoliate leaf?

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**26.** Describe the corolla of family-Fabaceae.

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**27.** (A) The famous Bodhi tree (*Ficus religiosa*) at Gaya is about ..... years old. (B) Flower is a modified ..... and produces fruits and seeds. (C) In bamboos, the stem is jointed with solid ..... and internodes and is known as ..... (D) The floral envelop including both calyx and corolla is called ..... . (E) A seed is a ripened ..... which contains the ..... or the miniature of plant body.

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**28.** Give one example each of the following :

(A) A plant having hypanthodium inflorescence

(B) A palmately compound leaf having 5 or more terminal leaflets

(C) A plant with decompound leaves

(D) A cladode

(E) A plant which reproduces vegetatively by root tubers

(F) A plant in which the floral buds of inflorescence transform into bulbils

(G) A plant in which the free ends of adnate stipules are modified into tendrils

(H) An endospermic dicotyledonous seed

(I) A plant which completes its life-cycle in two years

(J) A plant in which the main plant body is a thalloid root which carries out the process of photosynthesis.

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**29.** Make corrections wherever you find mistake in spellings/words in the following paragraph/sentences.

(A) The endospermic seeds of castor and custard apple contain an outer hard shell called tegmen. There is an outgrowth at the micropyle called aril, which is spongy and secretes moisture during seed germination.

B) In dicotyledonous seeds, the plumule is covered by a sheath called coleorhiza and radicle is protected by coleoptile.

(C) The fruits developed from the simple ovary are called simple type. If there is cluster of simple fruits which is borne on the same thalamus and developed from

bicarpellary, syncarpous ovary, they are aggregate. When the fruit develops from inflorescence, it is composite.

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**30.** 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

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

(i) $\oplus$ ⚥ $K_{(5)}.\ C_{(5)}.\ A_{(5)}.\ G_{(2)}$ (ii) $\Phi$ ⚥ $K_{(5)}C_{1+2+(2)}\ A_{(9)+1}\ G_1$ (iii) $\oplus$ ⚥ $K_5C_5A_{5+5}G_{(5)}$

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## Additional Questions Long Answer Questions

**1.** Describe the various roles of roots and stem of an angiospermic plant.

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**2.** What are underground stems ? Describe various forms of underground stem. Draw diagram and give one example of each form.

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**3.** What are edible fruits ? Describe chief edible fruits you have studied giving suitable examples.

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**4.** What are fleshy fruits ? Describe the various types of fleshy fruits with suitable examples.

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**5.** Describe with the help of diagram the structure of Maize grain. How does it differ from Bean seed ?

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**6.** Give a scientific description of family Liliaceae. Mention the economic importance.

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**7.** Give an account of the distinguishing features of family Solanaceae. Give botanical names of four plants of economic value belonging to this family.

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**8.** Write an explanatory note on defense mechanisms in plants.

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**9.** Define a flower. Name the various parts of a typical flower and describe only non-essential parts.

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**10.** Match the items in column (A) with column (B). Each point in column (A) has minimum one match in coiumn (B)

and maximum three matches

| Column (A) | Column (B) |
| --- | --- |
| 1. Perianth | (*a*) Pistil |
| 2. Cladode | (*b*) *Ruscus* |
| 3. *Ficus bengalensis* | (*c*) Tepal |
| 4. Gynoecium | (*d*) Prop roots |
| | (*e*) Carpels |
| | (*f*) Syconus |
| | (*g*) *Asparagus* |
| | (*h*) Hypanthodium |

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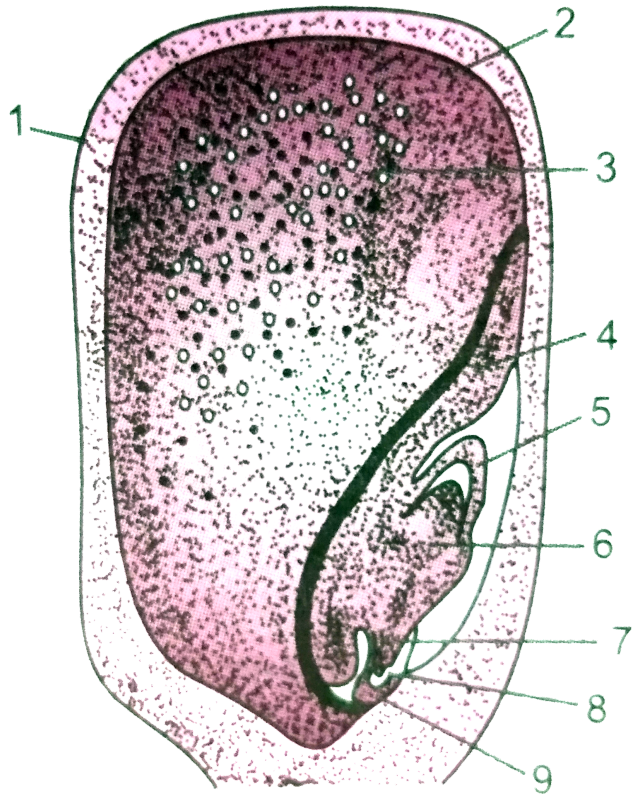
**11.** Longitudinal section of Maize grain is shown in the diagram. Label the parts 1 to 9, and also write the function

of parts three and four.

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**12.** (a) Write the type of fruit against the following and furnish the other information asked :

Various types of fruits : Drupe, Achene, Capsella, Hesperidium, Cremocarp, Cypsella, Schizocarp

(i) Cococut - Edible part

(ii) Orange - Type of placentation

(iii) Coriander - Type of inflorescence

(b) Write the type of inflorescence against the foil owing and furnish the other information asked :

Various types of inflorescence : Racemose, Umbel, Cyathium, Capitulum, Cymose

(i) Euphorbia - Type of fruit (ii) Marigold - Type of fruit

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

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**15.** 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.....
$(h)$ Tumeric.....
$(g)$ Gladiolus.....
$(j)$ Ginger.....
$(k)$ Portulaca.....

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## Analytical Questions With Answers

**1.** What are phylloclades? What are their functions ?

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**2.** What is phyllotaxy ? Give its types with one example.

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**3.** How would you differentiate between aggregate fruits and composite fruits ? Give one example of each.

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**4.** Whether mango is a true fruit or false fruit? Justify. Give its structure. Which branch of horticulture deals with the study and cultivation of fruits ?

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**5.** Give any two reasons to justify that Onion bulb is a modified stem.

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**6.** 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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**7.** How does the niustard inflorescence differ from the banana inflorescence in arrangement '? Give the technical term for each.

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**8.** Why are flowers of Cucumber referred to as epigynous ?

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

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**10.** In the given examples, which body part is modified for food storage :

(a) Potato (b) Radish (c) Portulaca (d) Dahlia

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**11.** hree students described the floral characters of a plant belonging to family Liliaceae. One of them described correctly and the others two were wrong. Who was correct and which characters were described wrong by the other two ?

Student A : Tetramerous, actinomorphic, polyphyllus, unilocular ovary, axile placentation.

Student B : Trimerous, actinomorphic, polyandrous, superior ovary, axile placentation

Student C : Trimerous, zygomorphic, gamophyllus, inferior ovary, marginal placentation.

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12.

Study the above figure and answer the following questions :

(a) Write the names of A, B, C and D (b) What is the type of fruit ?

(c) Write the type of ovary from which the fruit is formed.

(d) Which part is edible?

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13.

Observe the above figure and answer the following questions -

(a) Which one of the above represents the characteristic type of corolla of family Fabaceae ? Name the type of

corolla.

(b) Which of the above figures shows tubular type of corolla.

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**14.** (a) Name the layer which separates endosperm from embryo in a monocotyledonous seed.

(b) Where lies the cotyledon of a maize grain (monocotyledonous seed) ? What is it called ? Give its functions.

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**15.** Select a plant which grows in swampy areas, giving reasons.

Plant A : Develops haustoria for absorption of food.

Plant B : Develops prop roots for support.

Plant C : Develops pneumatophores to get oxygen for respiration.

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**16.** Write the symbols for the following floral characters -

(a) Calyx

(b) Actinomorphic flower

(c) Bracteate

( d) Inferior ovary

( e) bisexual flower

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**17.** Identify the family which shows the following diagnostic features. Name two plants of the family which are used as source of food.

**Features** : Flowers pentamerous, Gynoecium - bicarpellary, syncarpous, ovary placed obliquely, placentation axile, placenta swollen.

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**18.** Describe the Rower on the basis of the following floral formula

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**19.** Give the technical terms for the following:

(a) A sterile stamen (b) Stamens are united in one bunch

(c) Stamens are attached to the petals

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**20.** Complete the following table by givlng the correct options :

| Family | Inflorescence | Flower | Stamens | Gynoecium |
|---|---|---|---|---|
| Fabaceae | — | — | 10 | — |
| Solanaceae | Solitary, axillary or cymose | — | — | — |
| Liliaceae | — | Actinomorphic | — | Tricarpellary |

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## Practice Questions Multiple Choice Questions

**1.** Edible part of mango is

A. Receptacle

B. Epicarp

C. Mesocarp

D. Endocarp

**Answer: C**

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**2.** Thorn is a modified branch because

A. it is hard, straight and pointed

B. it is a part of the plant

C. it arises in the axil of a leaf

D. it is a defensive organ

**Answer: C**

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**3.** Flower in which only one set of essential organ is present are said to be

A. Bisexual

B. Monoecious

C. Dioecious

D. Unisexual

**Answer: D**

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**4.** The example for trimerous, unisexual flower is

A. Pea

B. Tamarind

C. Hibiscus

D. Cocos nucifera

**Answer: D**

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**5.** The condition where filaments and anthers are fused throughout the entire length is

A. Synandrous

B. Gynandrous

C. Protandrous

D. Syngenesis

**Answer: A**

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**6.** A flower which can be divided into equal vertical halves by more than one plane of division is

A. Actinomorphic

B. Zygomorphic

C. Heteromorphic

D. Cyclic

**Answer: A**

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**7.** Which of the following pairs is not correct ?

A. Corymb-Candituft

B. Capitulum-Sunflower

C. Catkin-Mulberry

D. Raceme-Wheat

**Answer: D**

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**8.** Which of the following represents the edible part of the fruit of litchi ?

A. Mesocarp

B. Endocarp

C. Pericarp

D. Juicy aril

**Answer: D**

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**9.** How many female flowers occur in a cyathium ?

A. One

B. Two

C. Three

D. Four

**Answer: A**

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**10.** The receptacle is flattened at the top and bears numerous sessile flowers in centripetal manner in

A. Cyathium

B. Catkin

C. Umbel

D. Capitulum

**Answer: D**

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**11.** Maize grain is

A. Seed

B. Embryo

C. Ovule

D. Fruit

**Answer: D**

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**12.** Rhizome which grows vertically upwards are

A. Corms

B. Stolon

C. Bulbils

D. Root stock

**Answer: D**

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**13.** Fibrous root system is mostly found in

A. Dicot plants

B. Monocot plants

C. Pteridophytes

D. Bryophytes

**Answer: B**

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**14.** The leaves of Utricularia plant are modified into

A. Hooks

B. Tendrils

C. Bladders

D. Pitchers

**Answer: C**

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**15.** If position of ovary is below sepals, petals, stamens, the flower is called

A. Epigynous

B. Perigynous

C. Mesogynous

D. Metagynous

**Answer: A**

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**16.** Trimerous flower, superior ovary and axile placentation is characteristic of

A. Cucurbitaceae

B. Solanaceae

C. Compositae

D. Liliaceae

**Answer: D**

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**17.** What type of placentation is seen in sweet pea

A. Marginal

B. Basal

C. Axile

D. Free central

**Answer: A**

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**18.** Long filamentous threads protruding at the end of a young cob of maize are-

A. Hair

B. Anthers

C. Styles

D. Ovaries

**Answer: C**

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**19.** In a cereal grain the single cotyledon of embryo is represented by

A. Coleoptile

B. Coleorhiza

C. Scutellum

D. Prophyll

**Answer: C**

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**20.** Pineapple (ananas) fruit develops from

A. A multilocular monocarpellary flower

B. A unilocular poly carpellary flower

C. A multipistillate syncarpous flower

D. A cluster of completely borne flowers on a common axis

**Answer: D**

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**21.** In the members of family malvaceae, anthers are described as

A. Diadelphous and dithecous

B. Diadelphous and monothecous

C. Monadelphous and dithecous

D. Monadelphous and monothecous

**Answer: D**

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**22.** Corm is a modification of

A. Root

B. Leaf

C. Stem

D. Bud

**Answer: C**

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**23.** The leaves are modified into tendrils, hooks, pitcher and bladder in the following plants respectively

A. Sweet pea, Cat's nail, Nepenthes, Utricularia

B. Sweet pea, Cat's nail, Utricularia, Nepenthes

C. Nepenthes, Cat's nail, sweet pea, Utricularia

D. Nepenthes, sweet pea, Cat's nail, Utricularia

**Answer: A**

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**24.** Which of the following is not a characteristic feature of Fabaceae

A. Descending imbricate aestivation, ten stamens diadelphous, ovary superior

B. Sepals five, gamosepalous, imbricate aestivation, placentation marginal

C. Monocarpellary, ovary superior, style long, slightly bent at the apex

D. Corolla five petals, polypetalous, anterior one large and outermost

**Answer: D**

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**25.** Pattern of arrangement of leaves on stem is known as

A. Phyllode

B. Pbyllotaxy

C. Phylloclade

D. Heterophylly

**Answer: B**

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**26.** A flower which can be divided in the halves in only one vertical plane is called

A. Actinomorphic

B. Heteromorphic

C. Isomerous

D. Zygomorphic

**Answer: D**

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**27.** An example of composite sorosis type of fruit is

A. Fig

B. Custard apple

C. Pineapple

D. Raspberry

**Answer: C**

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**28.** The plwnule is covered by protective sheath called:

A. Coleorhiza

B. Scutellum

C. Coleoptile

D. Tegmen

**Answer: C**

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**29.** Tricarpellary, syncarpous superior ovary is seen in :

A. Allium

B. Oenothera

C. Solanum

D. Dolichus

**Answer: A**

Watch Video Solution

**30.** Tendrils in Passiflora develop from

A. Apical roots

B. Apices of roots

C. Axillary buds

D. Terminal buds

**Answer: C**

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**31.** number of female flowers in a cyathium I

A. 1

B. 2

C. 3

D. Several

**Answer: A**

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**32.** Ginger is a stem which can be differentiated from root because it

A. It lacks chlorophyll

B. It stores food

C. It has nodes and internodes

D. It has xylem and vessels

**Answer: C**

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**33.** Gynoecium with fused carpels

A. Syncarpous

B. Apocarpous

C. Syngenecium

D. None of these

**Answer: A**

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**34.** Beauty of Bougainvillea flower is because of

A. Petals

B. Calyx

C. Bracts

D. Sepals

**Answer: A**

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**35.** An orthotropous ovule is one in which micropyle and chalaza are

A. At right angles to funicle

B. Parallel to the funicle

C. In straight line of funicle

D. Parallel along with ovule

**Answer: C**

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**36.** Match the following with correct combination

| | Column I | Column II |
|---|---|---|
| A | Cuscuta | 1 Saprophyte |
| B | Eichornia | 2Pneumatophore |
| C | Monotropa | 3 Insectivorous plant |
| D | Rhizophora | 4 Parasite |
| E | Utricularia | 5 Root pocket |

A. A-4, B-3, C-1, D-5, E-2

B. A-4, B-5, C-1, D-2, E-3

C. A-2, B-3, C-1, D-5, E-4

D. A-3, B-1, C-5, D-4, E-2

**Answer: B**

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**37.** The fruit is chambered, developed from inferior ovary and has seeds with succulent testa in

A. Guava

B. Cucumber

C. Pomegranate

D. Orange

**Answer: C**

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

A. Berry

B. Cremocarp

C. Caryopsis

D. Cypsella

**Answer: D**

**39.** The fleshy receptacle of syconus of fig encloses a number of

A. Berries

B. Mericarps

C. Achenes

D. Samaras

**Answer: C**

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**40.** Replum is present in the ovary of flower of

A. Sunflower

B. Pea

C. Lemon

D. Mustard

**Answer: D**

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**41.** Zygomorphic condition can be represented as

A. $\oplus$

B. $\%$

C. P

D. G

**Answer: B**

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**42.** Aril is the edible part of

A. Apple

B. Litchi

C. Banana

D. Mango

**Answer: B**

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**43.** In which plant the fruit is a drupe, seed coat is thin, embryo in inconspicuous and endosperm is edible

A. Ground nut

B. Wheat

C. Apple

D. Coconut

**Answer: D**

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**44.** 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**

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**45.** Cotyledons and testa respectively are edible parts in

A. Walnut and tamarind

B. French bean and coconut

C. Cashew nut and litchi

D. Ground nut and pomegranate

**Answer: D**

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**46.** An example of a seed with endosperm perisperm and caruncle is

Or

Which one of the following is an endosperm seed

Or

In which of the following plants, cotyledons form the first pair of leaves.

A. Coffee

B. Lily

C. Castor

D. Cotton

**Answer: C**

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**47.** 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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**48.** 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**

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**49.** 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: D**

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**50.** Roots developed from parts of the plant other than radicle are called

A. Taproots

B. Fibrous roots

C. Adventitious roots

D. Nodular roots

**Answer: C**

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**51.** Venation is a term used to describe the pattern of arrangement of

A. Floral organs

B. Flower in inflorescence

C. Veins and veiitlets in a lamina

D. All of them

**Answer: C**

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**52.** Endosperm, a product of double fertilization in angiosperms is absent in the seeds of

A. Gram

B. Orchids

C. Maize

D. Castor

**Answer: B**

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**53.** 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: B**

Watch Video Solution

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

A. Testa

B. Hilum

C. Micropyle

D. Chalaza

**Answer: D**

Watch Video Solution

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

A. Trifolium

B. Indigofera

C. Lupin

D. Cassia

**Answer: B**

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**56.** Match the followings and choose correct option.

| Group A | Group B |
|---|---|
| $A$. Aleurone layer | $(ii)$Without fertilisation |
| $B$. Parthenocarpic fruit | $(ii)$Nutrition |
| $C$. Ovule | $(iii)$Double fertilisation |
| $D$. Endosperm | $(iv)$Seed |

A. A-i, B-ii, C-iii, D-iv

B. A-ii, B-i, C-iv, D-iii

C. A-iv, B-ii, C-i, D-iii

D. A-ii, B-iv, C-i, D-iii

**Answer: B**

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**57.** The scutellum observed in a grain of wheat or maize is comparable to which part of the seed in other monocotyledons

A. Plumule

B. Cotyledons

C. Endosperm

D. Aleurone layer

**Answer: B**

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**58.** Aestivation of petals in the flower of cotton is correctly shown in

A.

B.

C.

D.

**Answer: D**

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**59.** Find the correct match

A. mustard plant-leaves opposite

B. mustard plant-leaves alternate

C. guava plant-leaves alternate

D. guava plant-leaves whorled

**Answer: B**

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**60.** Which of the following is not correctly paired

A. Fabaceae-legume family

B. Solanaceae-Potato family

C. Liliaceae-Sunflower family

D. Brassicaceae-Mustard family

**Answer: C**

Watch Video Solution

**61.** Find the incorrect statement.

A. root hairs are univellular elongation

B. root hairs absord water and minerals

C. trichomes are unicellular elongations

D. trichomes are multicellular elongations

**Answer: C**

Watch Video Solution

**62.** Find the incorrect match.

A. tap root-correct

B. adventitious root-sweet potato

C. poop root-banyantree

D. stilt root-turnip

**Answer: D**

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**63.** Example of corm is

A. Ginger

B. Colocasia

C. Onion

D. Potato

**Answer: B**

Watch Video Solution

**64.** The 'Eyes' of the potato tuber are :-

A. root buds

B. flower buds

C. shoot buds

D. axillary buds

**Answer: D**

Watch Video Solution

**65.** Which one of the following statements is correct?

A. in tomato, fruit is a capsule

B. seeds of orchids have oil-rich endosperm

C. placentation in primose is basal

D. flower of tulip is a modified shoot

**Answer: D**

Watch Video Solution

**66.** The floral formula of solanaceae (Chilli) is

A.

B.

C.

D.

**Answer: B**

Watch Video Solution

**67.** The ovary is half inferior in flowers of

A. peach

B. cucumber

C. cotton

D. guava

**Answer: A**

Watch Video Solution

**68.** A drupe develops in

A. mango

B. wheat

C. pea

D. tomato

**Answer: A**

Watch Video Solution

**69.** Which one the following pairs is wrongly matched while the remaining three and correct

A. Penicillium - conidia

B. Water hyacinth - runner

C. Bryophyllum - leaf buds

D. Agave - bulbils

**Answer: B**

Watch Video Solution

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

A.

B.

C.

D.

**Answer: B**

Watch Video Solution

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

A. Calotropis

B. neem

C. China rose

D. Alstonia

**Answer: D**

Watch Video Solution

**72.** Flowers are Zygomorphic in

A. mustard

B. gulmohar

C. tomato

D. datura

**Answer: B**

Watch Video Solution

**73.** The mesocarp in coconut is

A. fleshy

B. stony

C. fibrous

D. milky

**Answer: C**

Watch Video Solution

**74.** Placentation in tomato and lemon is

A. Parietal

B. Free central

C. Marginal

D. Axile

**Answer: D**

Watch Video Solution

**75.** Cymose inflorescence is present in

A. Solanum

B. Sesbania

C. Trifolium

D. Brassica

**Answer: A**

**76.** Phyllode is present in :-

A. Asparagus

B. Euphorbia

C. Australian Acacia

D. Opuntia

**Answer: C**

Watch Video Solution

**77.** The gynoecium consists of many free pistils in flowers of

A. Aloe

B. Tomato

C. Papaver

D. Michelia

**Answer: D**

Watch Video Solution

**78.** Which one of the following is correctly matched

A. Onion - Bulb

B. Ginger - Sucker

C. Chlamydomonas - Conidia

D. Yeast-Zoospores

**Answer: A**

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**79.** How many plants in the list given below have composite fruits that develop from an inflorescence.

Walnut, poppy, radish, fig, pineapple, apple, totato, mulberry.

A. Four

B. Five

C. Two

D. Three

**Answer: D**

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**80.** The coconut water and the edible part of coconut are equivalent to or the morphological nature of the edible part of coconut is

A. Endosperm

B. Endocarp

C. Mesocarp

D. Embryo

**Answer: A**

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**81.** Vexillary aestivation is charactetic of the family

A. Fabaceae

B. Asteraceae

C. Solanaceae

D. Brassicaceae

**Answer: A**

Watch Video Solution

**82.** In china rose the flowers are

A. actinomorphie, epigynous with valvate aestivation

B. zygomorphic, hypogynous with imbricate aestivation

C. zygomorphic, epigynous with twisted aestivation

D. actinomorphic, hypogynous with twisted aestivation

**Answer: D**

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**83.** Age of tree can be estimated by

A. biomass

B. number of annual rings

C. diameter of its heartwood

D. its height and girth

**Answer: B**

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**84.** The essential chemical components of many coenzymes are

A. nucleic acids

B. carbohydrates

C. vitamins

D. proteins

**Answer: C**

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**85.** Perisperm differs from endosperm in

A. having no reserve food

B. being a diploid tissue

C. its formation by fusion of secondary nucleus with several sperms

D. being a haploid tissue

**Answer: B**

Watch Video Solution

**86.** Seed coat is not thin, membranous in

A. Coconut

B. Groundnut

C. Gram

D. Maize

**Answer: A**

Watch Video Solution

**87.** Among bitter gourd. Mustard, brinjal, pumpkin, chinarose, lupin, cucumber, sunnehemp, gram, guava, bean, chilli, plum,petunia, tomato, rose,withania, potato, onion, aloe and tulip how many plants havehypogynous flower

A. Ten

B. Fifteen

C. Eighteen

D. Six

**Answer: B**

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**88.** An example of edible underground stem is

A. Carrot

B. Groundnut

C. Sweet potato

D. Potato

**Answer: D**

Watch Video Solution

**89.** Which one of the following stateme its 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.

**Answer: C**

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**90.** Placenta and pericarp are both edible portions in

A. Apple

B. Banana

C. Tomato

D. Potato

**Answer: C**

Watch Video Solution

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

A. Vexillary

B. lmbricate

C. Twisted

D. Valvate

**Answer: B**

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**92.** 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**

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**93.** Non-albuminous seed is produced in

A. Maize

B. Castor

C. Wheat

D. Pea

**Answer: D**

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**94.** Cladode' is a characteristic morphological feature of

A. Asparagus and Ruscus

B. Casuarina and Opuntia

C. Cladophora and Cactus

D. Citrus and Euphorbia

**Answer: A**

**95.** Censer mechanism of seed dispersal is found in

A. Papaveraceae

B. Liliaceae

C. Leguminoceae

D. Rosaceae

**Answer: A**

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**96.** Elater mechanism for seed dispersal is exhibited by

A. Riccia

B. Marchantia

C. Dryopteris

D. Funaria

**Answer: B**

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**97.** Among china rose, mustard, Brinjal, potato, guava,cucumber onion and tulip, how many plants have superior ovary

A. Four

B. Five

C. Six

D. Three

**Answer: C**

Watch Video Solution

**98.** Flowers are unisexual in

A. Onion

B. Pea

C. Cucumber

D. China rose

**Answer: C**

Watch Video Solution

**99.** Roots play insignificant role in absorption of water in

A. Wheat

B. Sunflower

C. Pistia

D. Pea

**Answer: C**

Watch Video Solution

**100.** The small projections present on the surface of pineapple fruit represent

A. persistent styles

B. persistent stamens

C. persistent calyx

D. persistent bracts

**Answer: D**

Watch Video Solution

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

A. Phyllodes

B. Phylloclades

C. Scales

D. Cladodes

**Answer: B**

Watch Video Solution

**102.** The standard petal of a papilionaceous corola is also called

A. Pappus

B. Vexillum

C. Corona

D. Carina

**Answer: B**

Watch Video Solution

**103.** Tricarpellary syncarpous gynoecium is found in flowers of

A. Solanaceae

B. Fabaceae

C. Poaceae

D. Liliaceae

**Answer: D**

Watch Video Solution

**104.** Cotyledon of maize grain is called

A. Coleorhiza

B. Coleoptile

C. Scutellum

D. Plumule

**Answer: C**

Watch Video Solution

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

A. Thorns of citrus

B. Tendrils of cucumber

C. Flattened structures of Opuntia

D. Pitcher of Nepenthes

**Answer: D**

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**106.** Proximal end of the filament of stamen is attached to the

A. Connective

B. Placenta

C. Thalamus or petal

D. Anther

**Answer: C**

Watch Video Solution

**107.** The term 'polyadelphous' is related to

A. gynoecium

B. androecium

C. corolla

D. calyx

**Answer: B**

Watch Video Solution

**108.** Many plants among Indigofera, Sesbania, Salvia, Allium, Aloe, mustard, groundant,radish,gram and turnip have stamens with different in their flowers

A. Three

B. Four

C. Five

D. Six

**Answer: B**

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**109.** Radial symmetry is found in the flowers of

A. Brassica

B. Trifolium

C. Pisum

D. Cassia

**Answer: A**

Watch Video Solution

**110.** Free-central placentation is found in

A. Dianthus

B. Argemone

C. Brassica

D. Citrus

**Answer: A**

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**111.** Match Column-I with Column-II and select the correct option using the codes given below

| | Column-I | | Column-II |
|---|---|---|---|
| (A) | Pistils fused together | (i) | Gametogenesis |
| (B) | Formation of gametes | (ii) | Pistillate |
| (C) | Hyphae of higher Ascomycetes | (iii) | Syncarpous |
| (D) | Unisexual female flower | (iv) | Dikaryotic |

A. $\begin{matrix}(1) & (2) & (3) & (4)\\ (iv) & (iii) & (i) & (ii)\end{matrix}$

B. $\begin{matrix}(1) & (2) & (3) & (4)\\ (ii) & (i) & (iv) & (iii)\end{matrix}$

C. $\begin{matrix}(1) & (2) & (3) & (4)\\ (i) & (ii) & (iv) & (iii)\end{matrix}$

D. $\begin{matrix}(1) & (2) & (3) & (4)\\ (iii) & (i) & (iv) & (ii)\end{matrix}$

**Answer: D**

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**112.** Coconut fruit is a

A. berry

B. nut

C. capsule

D. drupe

**Answer: D**

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

A. adventitious root

B. stem

C. leaf

D. stipules

**Answer: B**

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**114.** The morphological nature of the edible part of coconut is

A. cotyledon

B. endosperm

C. pericarp

D. perisperm

**Answer: B**

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**115.** Sweet potato is a modified

A. stem

B. adventitious root

C. tap root

D. rhizome

**Answer: B**

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## Assertion Reason Type Questions

**1.** Assertion. An exposed potato tuber develops chlorophyll and turns green.

Reason. Potato tuber is a modified stem and its cells have ability to develop chlorophyll if exposed to light.

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. The leaflet of a compound leaf is not a true leaf.

Reason. There is no bud in the axil of a leaflet.

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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**3.** Assertion. The fruits of groundnuts are not nuts but underground pods.

Reason. The pods will not develop until the fertilized ovary is pushed under the soil.

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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**4.** Assertion. A flower is a modified shoot .

Reason . All the floral parts are borne on the receptacle ( or thalamus).

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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**5.** Assertion. Dispersal of fruits in Xanthium takes place by wind and water.

Reason. Fruits are light and floating.

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**

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**6.** Assertion. Fruits are formed only in angiosperm .

Reason . Fruits develop from ovaries which are found only in angiosperm .

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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**7.** Assertion. Seeded plants are highly evolved.

Reason. Seeds are found in gymnosperms and angiosperms.

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**

Watch Video Solution

**8.** Assertion : An ovule is transformed into a fruit after fertilization.

Reason : The fruits are formed only from ovules.

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**

Watch Video Solution

**9.** Assertion. Flowers are structures of sexual reproduction

.

Reason. Various embryological processess of plants occur in the flower.

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. Epigynous ovary is always inferior.

Reason. All the floral parts lie above the level of ovary in epigynous condition and, therefore, ovary becomes inferior.

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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**11.** Assertion. The placenta is swollen in the ovary of Solanaceae.

Reason. The ovary is obliquely placed on the thalamus in Solanaceae.

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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**12.** Assertion. The flowers of the family-Liliaceae are pentamerous.

Reason. Flowers of Liliaceae are pentamerous because it is a dicot family.

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**

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**13.** Assertion. The corolla of the family Fabaceae is papilionaceous.

Reason: The petals of Lamiaceae are fused in such a manner that the corolla looks bilipped.

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. Leaves of Smilax show parallel venation.

Reason. Leaves of all the plants belonging to family Liliaceae show parallel venation.

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**

**15.** Assertion : Ginger has a prostrate-growing rhizome.

Reason : Shoot growth is not affected by gravity

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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**16.** Assertion : Coconut tree is distributed in coastal areas over a large part of the world.

Reason : Coconut fruit can float and get dispersed over thousands of Kilometers before losing viability.

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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