



# **BIOLOGY**

## **BOOKS - FULL MARKS BIOLOGY (TAMIL ENGLISH)**

### **TAXONOMY AND SYSTEMATIC BOTANY**

**Textbook Evaluation Questions Solved Multiple  
Choice Questions**

1. Specimen derived from non-original collection serves as the nomenclatural type, when original specimen is missing . It is known as.

A. Holotype

B. Neotype

C. Isotype

D. Paratype

**Answer:**



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2. Phylogenetic classification is the most favoured classification because it reflects .....

- A. Comparative Anatomy
- B. Number of flowers produced
- C. Comparative cytology
- D. Evolutionary relationships

**Answer:**





3. The taxonomy which involves the similarities and dissimilarities among the immune system of different taxa is termed as

- A. Chemotaxonomy
- B. Molecular systematics
- C. Serotaxonomy
- D. Numerical taxonomy

**Answer:**



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4. Which of the following is a flowering plant with nodules containing filamentous nitrogen fixing micro-organisms?

A. *Crotalaria juncea*

B. *Cycas revoluta*

C. *Cicer arietinum*

D. *Casuarina equisetifolia*

**Answer:**



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5. Flowers are zygomorphic in \_\_\_\_\_.

A. Ceropegia

B. Thevetia

C. Datura

D. Solanum

**Answer:**



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## Textbook Evaluation Questions Solved

1. What is the role of national gardens in conserving biodiversity-discuss



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2. Where will you place the plants which contain two cotyledons with cup shaped thalamus?



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3. How do molecular markers work to unlock the evolutionary history of organisms?



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4. Give the floral characters of *Clitoria ternatea*.



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5. How will you distinguish Solanaceae members from Liliaceae members?



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## **Textbook Activities Solved**

1. Write common name and scientific name of 10 different plants around your home.



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2. Can you identify this?

(a) Name the family

(b) Write the binomial

(c) List the economic uses



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**Entrance Examination Questions Solved Choose  
The Correct Answer**

1. Leaves are modified into spines in \_\_\_\_\_

A. Silk Cotton

B. Opuntia

C. Pea

D. Onion

**Answer:**



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**2. Keel is the characteristic feature of flower of**

A. Tomato

B. Tulip

C. Indigofera

D. Aloe

**Answer:**



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**3. Perigynous flowers are found in**

A. Rose

B. Guava

C. Cucumber

D. China rose

**Answer:**



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**4.** Which one of the following statements 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:**



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5. An example of edible underground stem is

A. Carrot

B. Groundnut

C. Sweet potato

D. Potato

**Answer:**



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6. Placenta and pericarp are both edible portions in

A. Apple

B. Banana

C. Tomato

D. Potato

**Answer:**



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7. When the margins of sepals or petals overlap one another without any particular direction, the condition is termed as

A. Vexillary



B. Imbricate

C. Twisted

D. Valvate

**Answer:**



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**8.** An aggregate fruit is one which develops from

A. Multicarpellary syncarpous gynoecium

B. Multicarpellary apocarpous gynoecium

C. Complete inflorescence

D. Multicarpellary superior ovary

**Answer:**



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

A. Maize

B. Castor

C. Pea

D. Wheat

**Answer:**



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

A. Coconut

B. Groundnut

C. Gram

D. Maize

**Answer:**



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**11.** In china rose the flower 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

**Answer:**



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

A. Marginal

B. Axile

C. Parietal

D. Free central

**Answer:**



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**13.** Vexillary aestivation is characteristic of the family

A. Solanaceae

B. Brassicaceae

C. Fabaceae

D. Asteraceae

**Answer:**



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**14.** Phyllode is present in

A. Australian Acacia

B. Opuntia

C. Asparagus

D. Euphorbia

**Answer:**



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**15.** How many plants in the list given below have composite fruits that develop from an inflorescence? Walnut, poppy, radish, pineapple, apple, tomato.



A. Two

B. Three

C. Four

D. Five

**Answer:**



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**16.** Cymose inflorescence is present in \_\_\_\_\_

A. Trifolium

B. Brassica

C. Solanum

D. Sesbania

**Answer:**



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**17.** Which one of the following organism is correctly matched with its three characteristics ?

A. Pea :  $C_3$  pathway, Endospermic seed,

Vexillary aestivation

B. Tomato : Twisted aestivation, Axile

placentation, Berry

C. Onion: Bulb, Imbricate aestivation, Axile

placentation

D. Maize :  $C_3$  pathway, Closed vascular

bundles, scutellum

**Answer:**



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**18.** How many plants is marginal placentation?

,

Mustard, Gram, Tulip, Asparagus, Arhar, sun  
hemp ,Chilli ,Colchicine, Onion, Moong, Pea,  
'Tobacco, Lupin

A. Four

B. Five

C. Six

D. Three

**Answer:**



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**19.** The Eyes of the potato tuber are

- A. Axillary buds
- B. Root buds
- C. Flower buds
- D. Shoot buds

**Answer:**



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**20.** 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

**Answer:**



21. A drup develops in

A. Tomato

B. Mango

C. Wheat

D. Pea

**Answer:**



## Additional Questions Solved Multiple Choice Questions

1. Father of Botany .....

A. Linnaeus

B. Theophrastus

C. Darwin

D. Thales

**Answer:**



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2. .... Is the lowest level of classification

.

A. Kingdom

B. Class

C. Order

D. Species

**Answer:**



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3. Who proposed the concepts of "idos" or species ?

A. Theophrastus

B. Stebbians

C. Darwins

D. Plato

**Answer:**



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4. Which type of species develop by the process of evolution ?

A. Taxonomic species

B. Morphological species

C. Biological species

D. Phylogenetic species

**Answer:**



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5. Who first proposed the early elementary rule of naming plants ?

A. A.P. de Candolle

B. Linnaeus

C. Alphonse de Candolle

D. Simpson

**Answer:**



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6. Isolation species can also be called as ..... species .

A. Biological

B. Taxonomical

C. Phylogenetic

D. Morphological

**Answer:**



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7. 18<sup>th</sup> International Botanical congress was held at ..... .

A. Sydney

B. leningard

C. Melbourne

D. London

**Answer:**



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8. In 2017, ..... International Botanical congress was held at Shenzhen .

A. 17<sup>th</sup>

B. 18<sup>th</sup>

C. 19<sup>th</sup>

D. 20<sup>th</sup>

**Answer:**



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9. The vernacular name of Albizia amara in South Tamilnadu is ..... .

A. Thurinji

B. Kurinji

C. Nithyakalyani

D. Usilai

**Answer:**



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10. .... Is a descriptive phrase of a plant.

A. Vernacular name

B. Binomial

C. Polynomial

D. Botanical name

**Answer:**



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11. Who introduced binomial system of nomenclature?

A. Linnaeus

B. Gaspard Bauhin

C. Darwin

D. Wallace

**Answer:**



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12. Duplicate specimen of holotype is

A. Lectotype

B. Isotype

C. Neotype

D. Syntype

**Answer:**



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**13.** Which is the tool for the identification of unfamiliar plants?

A. Flora

B. Keys

C. Monograph

D. Catalogues

**Answer:**



**Watch Video Solution**

**14.** ..... Is a complete global account of a taxon of any rank.

A. Flora

B. Keys

C. Monograph

D. Catalogues

**Answer:**



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**15.** The first botanical garden was established and maintained by ..... .

A. Linnaeus

B. Babylonians

C. Theophrastus

D. Stebbins

**Answer:**



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16. First modern botanical garden was established by

A. Theophrastus

B. Linnaeus

C. Luca Ghini

D. Stebbins

**Answer:**



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17. The largest botanical garden is in \_\_\_\_\_.

- A. Royal Botanical garden
- B. Madras Presidency College
- C. Indian Botanical Garden
- D. New York Botanical garden

**Answer:**



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**18. Who is the father of Taxonomy?**

A. Engler & Prantl

B. Linnaeus

C. Theophrastus

D. Darwin

**Answer:**



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19. Number of stamen(s) in monandria is

..... .

A. 4

B. 3

C. 2

D. 1

**Answer:**



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**20.** Which of the following classification is a sexual system of classification?

A. Natural system

B. Artifical system

C. Phylogenetic

D. APG system

**Answer:**



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21. Number of series under Polypetalae.

A. 1

B. 2

C. 3

D. 4

**Answer:**



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22. Which one of the following series includes the epigynous flowers?

A. Heteromerae

B. Disaforea

C. Inferae

D. Thalanifloreae

**Answer:**



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23. Undistinguished sepal and petal is called as

- A. Petaloid
- B. Staminode
- C. Perianth
- D. Sepaloid

**Answer:**



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**24.** Which is not a family of gymnospermae?

A. Gnetaceae

B. Equistae

C. Coniferae

D. Cycadaceae

**Answer:**



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**25.** Which is not a monocotyledon character?

- A. One cotyledon
- B. Parallel venation
- C. Pentamerous
- D. Fibrous root

**Answer:**



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**26.** Number of divisions in Engler and Prantl classification?

A. 10

B. 11

C. 12

D. 13

**Answer:**



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27. The book titled 'The Evolution and classification of flowering plants' was written by\_\_\_\_\_.

- A. Engler & Prantl
- B. Bentham & Hooker
- C. Cronquist
- D. Theophrastus

**Answer:**



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**28.** Which of the following is not a clade of APG - classification?

- A. Early angiosperm
- B. Early gymnosperm
- C. Monocots
- D. Eudicots

**Answer:**



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**29.** The term biosystematics was introduced by

A. Bauhin

B. Camp & Gilly

C. Cronquist

D. Smith

**Answer:**



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**30.** Taxonomy based on chromosomal number & characteristics is called .....

- A. Serotaxonomy
- B. Cytotaxonomy
- C. Chemotaxonomy
- D. Molecular taxonomy

**Answer:**



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**31.** Classification based on protein content is called .....

- A. Serotaxonomy
- B. Cytotaxonomy
- C. Chemotaxonomy
- D. Molecular taxonomy

**Answer:**



**Watch Video Solution**

32. DNA bar coding was introduced by ..... .

A. Stebbins

B. Hebert

C. Camp & Gilly

D. Darwin

**Answer:**



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33. Biosystematics is also called as .. ..

A.  $\alpha$ -taxonomy

B. S-taxonomy

C.  $\Omega$  - taxonomy

D.  $\beta$ -taxonomy

**Answer:**



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**34.** The out come of a cladistic analysis is

-----

A. Monogram

B. Monograph

C. Cladogram

D. Cladograph

**Answer:**



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**35.** Taxa comprising all the descendents of a common ancestor.

A. Monophyletic group

B. Diphyletic group

C. Paraphyletic group

D. Polyphyletic group

**Answer:**



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**36.** Papilionaceous corolla is seen in  
.....family

A. Apocyanaceae

B. Fabaceae

C. Solanaceae

D. Liliaceae

**Answer:**



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37. Stipitate ovary is seen in .....

A. Solanaceae

B. Liliaceae

C. Fabaceae

D. Apocyanaceae

**Answer:**



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**38.** Number of genus in fabaceae is .....

.

A. about 131

B. about 741

C. about 751

D. about 761

**Answer:**



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39. The characteristic fruit of Fabaceae is \_\_\_\_\_.

A. Regima

B. Legume

C. Hesperidium

D. Berry

**Answer:**



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**40.** In *Arachis hypogea*, the fruit development is .....

A. Syncarpic

B. Apocarpic

C. Geocarpic

D. Photocarpic

**Answer:**



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**41.** Which of the following plants root is a Immunomodulator ?

- A. Glycirrhiza glabra
- B. Dalbergia latifolia
- C. Mucum pruriens
- D. Crotolaria jurcea

**Answer:**



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42. Indigo dye is obtained from ..... plant.

A. Lupin

B. Avuri

C. Sesban

D. Agathi

**Answer:**



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**43.** Which plant is commonly called as the “Flame of the forest”?

- A. Clitoritermatea
- B. Butea frondosa
- C. Lupinus hirsutus
- D. Butea monosperma

**Answer:**



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**44.** International year of pules

A. 2017

B. 2018

C. 2015

D. 2016

**Answer:**



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**45.** Which is called as "Night Shade Family" ?

A. Solanaceae

B. Fabaceae

C. Apocyanaceae

D. Liliaceae

**Answer:**



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**46.** Rhipidium inflorescence is seen in

..... .

A. *Solanum nigrum*

B. *Solanum tuberosum*

C. *Datura*

D. *Withania somnifera*

**Answer:**



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**47.** The fruit of *Datura metel* is .....

A. Spinescent Capsule

B. Regma

C. Legume

D. Capsule

**Answer:**



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**48.** Plicate inflorescence is seen in .....

A. *Solanum nigrum*

B. *Datura metel*

C. *Petunia hybrida*

D. *Solanum tuberosum*

**Answer:**



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**49.** ..... drug is used to treat asthma & whooping cough.

A. Atropine

B. Stramonium

C. Anabasin

D. Nornicotine

**Answer:**



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**50.** Inflorescence in Aloe is ..... .

A. Compound Spadix

B. Spike

C. Paricle



D. Solitary

**Answer:**



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**51. Carpels are obliquely placed in .....**

A. Fabaceae

B. Solanaceae

C. Liliaceae

D. Apocynaceae

**Answer:**



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**52.** Septal glands are present in the gynoeciums of .....

A. Solanaceae

B. Liliaceae

C. Fabaceae

D. Apocynaceae

**Answer:**



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**53. .... is an alkaloid that induces polyploidy.**

A. Nicotine

B. Stramonium

C. Atropine

D. Colchicine

**Answer:**



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54. The leaves of .... is used in hemorrhoidal salves & shampoos.

A. *Asparagus officinalis*

B. *Aloevera*

C. *Allium sativum*

D. *Allium cepa*

**Answer:**



**55.** Botanical survey of India has ..... regional centres in India.

A. 10

B. 11

C. 12

D. 13

**Answer:**



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56. Synstamenous condition is seen in .....

- A. Haemodorum
- B. Ruscus
- C. Paris quadrifolia
- D. Maianthemum

**Answer:**



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57. Scapigerous inflorescence is seen in .....

A. *Allium sativum*

B. *Allium cepa*

C. *Aloevera*

D. *Maenodorum*

**Answer:**



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**58.** Number of stamens in Schizanthus is..... .

A. 2

B. 3

C. 4

D. 5

**Answer:**



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59. Extra axillary scorpioid cyme is called

.....

- A. Spike
- B. Monochasical cyme
- C. Helicoid cyme
- D. Rhiphidium

**Answer:**



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# Additional Questions Solved Very Short Answer Type Questions

1. Define Taxonomy.



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2. List out the various rank or taxa of taxonomic hierarchy.



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3. Which is the lowest rank of classification?



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4. What is Nomenclature?



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5. What are vernacular names ? Give an example .



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6. What is author citation?



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7. What is electronic flora?



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8. When a neotype specimen is selected?



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9. What do you mean by taxonomical aids?



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10. Differentiate Regional Flora from continental flora.



**Watch Video Solution**

11. Define herbarium specimen.



**Watch Video Solution**

**12.** Name the major classes of Bentham & Hooker Classification.



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**13.** How Cronquist classified the angiosperms?



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**14.** Cronquist classification is a failure. Justify



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**15.** Which is the most recent classification of flowering plants? How many versions it had been published so far?



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**16.** What are the sub-classes of Liliopsida?



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**17.** Why are the classification systems changing every now and then?



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**18.** What are the aims of chemotaxonomy?



**Watch Video Solution**



19. Define biosystematics.



**Watch Video Solution**

20. Name a few molecular markers used in molecular taxonomy.



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21. Write the significance of DNA barcoding?



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**22.** State the demerits of RAPD analysis.



**Watch Video Solution**

**23.** What is cladistics?



**Watch Video Solution**

**24.** What is cladogram? Draw a model cladogram.



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**25.** The genetic sequence used to identify a plant is known as\_\_\_\_\_.



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**26.** Compare the Gynoecium of *Pisum sativum* and *Datura metel*.



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27. Write the floral formula of *Pisum sativum*.



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28. Name binomial name of any two oil plants of Fabaceae.



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29. Write a note on the classical taxonomical tools.





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**30.** Name the type of fruit seen in Capsicum and Datura.



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**31.** What is atropine?



[Watch Video Solution](#)

**32.** What is Stramonium?



**Watch Video Solution**

**33.** Which stimulated Engler and Prantl to prepare phylogenic classification?



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**Additional Questions Solved Short Answer Type Questions**

1. How dichotomous key helps in identification of plants ?



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2. List the differences between taxonomy and systematics.



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3. What is Binomial Nomenclature?



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4. Enumerate the steps involved in herbarium preparation.



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5. Why do we need the classification of organisms ?



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6. Classification is an essential part of biology -  
Justify.



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7. Linnaeus classification is also called sexual  
system of classification. Why?



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8. Write short notes on Monochlamydeae.



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**9.** In chemotaxonomy, how the chemicals are categorised?



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**10.** What is serotaxonomy?



**Watch Video Solution**

**11. What is molecular taxonomy?**



**Watch Video Solution**

**12. What are the uses of molecular taxonomy?**



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**13. How RFLP helps in taxonomical studies?**



**Watch Video Solution**

**14.** What is DNA barcoding?



**Watch Video Solution**

**15.** In which organelle of plant cell does the barcode genes are located? Name the genes.



**Watch Video Solution**

**16.** Differentiate between Monophyletic group and paraphyletic group.



**Watch Video Solution**

**17.** What is the need for cladistics?



**Watch Video Solution**

**18.** What is meant Papilionaceous corolla?



**Watch Video Solution**

**19.** Draw the floral diagram of *Pisum sativum*.



**Watch Video Solution**

**20.** Give the systematic position of Solanaceae.



**Watch Video Solution**

**21.** Write the diagnostic features of Liliaceae.



**Watch Video Solution**

**22.** Give the systematic position of Liliaceae.



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## Additional Questions Solved Long Answer Type Questions

1. List out the principles of ICN.



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2. Explain the role of Botanical garden in taxonomy.



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3. What are the uses of herbarium.



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4. Point out the characters of Early angiosperm according to APG Classification,



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5. Draw a flow chart depicting the Bentham and Hooker Classification.



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6. Draw an outline of Engler & Prantl Classification .



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7. list out the aim of biosystematics.



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**8.** Differentiate classical taxonomy and modern taxonomy.



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**9.** Write the significance of molecular taxonomy.



**Watch Video Solution**

**10.** Explain *Clitoria ternatea* in botanical terms.

Draw floral diagram.



**Watch Video Solution**

**11.** Explain *Datura metel* in botanical terms.

draw floral diagram



**Watch Video Solution**

**12.** Describe the floral characters of *Allium cepa* with a neat floral diagram.



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**13.** List out the economic importance of plants & their uses of Fabaceae.



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**14.** List out the economic importance of plants belonging to Solanaceae & their uses.



**Watch Video Solution**

**15.** List out the economic importance of plants & their uses of Liliaceae.



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**Additional Questions Solved Higher Order Thinking Skills Hots**

1. Neem is highly valued tree in Indian medicine. It is called by the name veppu in Malayalam, Arishta in Sanskrit, Vembu in Tamil, Nimbo in Portuguese. Suggest a solution for this varied naming problem considering as a taxonomist.



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2. According to Binomial nomenclature, Human beings are named as Homosapiens.

Following this, write the binomials for Brinjal and Rosewood.



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3. Officially, every state in the Republic of India has its own flower, fruit etc. If Andhra Pradesh has Lotus as its state flower, what is the state flower of Tamil Nadu? Mention its family.



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4. Peanut is a geocarpic fruit - Comment on the statement.



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5. You are given an entire plantlet of *Clitoria ternatea*. Give possible reasons to say that it is a dicot plantlet.



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6. Give possible terms explaining the gynoecium of a flower liliaceae



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