



## BIOLOGY

### BOOKS - SARAS PUBLICATION

### TAXONOMY AND SYSTEMATIC BOTANY

#### Exercise

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:**



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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. Ceropogia

B. Thevetia

C. Datura

D. Solanum

**Answer:**



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6. Name the organization which provides rules for naming animals

A. ICZN

B. ICN

C. ICBN

D. IBN

Answer:



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7. Select the correct order

A.

$Class \rightarrow k \in gdom \rightarrow phylum \rightarrow or\ der \rightarrow \geq vs \rightarrow family \rightarrow s$

B.

$Family \rightarrow k \in gdom \rightarrow or\ der \rightarrow class \rightarrow \geq vs \rightarrow species \rightarrow pi$

C.

$Species \rightarrow family \rightarrow \geq vs \rightarrow or\ der \rightarrow phylum \rightarrow k \in gdom \rightarrow$

D.

$K \in gdom \rightarrow phylum \rightarrow class \rightarrow or\ der \rightarrow family \rightarrow r \geq vs \rightarrow$

Answer:



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8. What is the term given to a duplicate specimen of original type?

- A. Lectotype
- B. Holotuype
- C. Isotype
- D. Neotype

**Answer:**



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9. Which among the following is the smallest category?

- A. Order
- B. Species
- C. Tribe
- D. Class

**Answer:**



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**10.** Species plantarum was written by\_\_\_

- A. Linnaeus
- B. Hutchinson
- C. John Ray
- D. Benthem

**Answer:**



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**11.** Which is the basic unit of classification?

- A. Kingdom

B. Division

C. Species

D. Order

**Answer:**



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**12.** ICBN is associated with nomenclature of

A. Animals

B. Plants

C. Bacteria

D. Virus

**Answer:**



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

- A. New York Botanical garden, USA
- B. Royal Botanical garden, Kew
- C. Royal Botanical garden, Sydney
- D. New York Botanical garden

**Answer:**



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14. A place of collection of dried plant specimen is \_\_\_\_\_

- A. Arboretum
- B. Botanical garden
- C. Herbarium
- D. All of above

**Answer:**



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**15.** One of the largest herbarium is located in

- A. Kew
- B. Geneva
- C. Berlin
- D. Sweden

**Answer:**



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**16.** Natural system of classification was proposed by

- A. Bentham and Hooker

B. Whittaker

C. Engler and Prantl

D. Carolus Linnaeus

**Answer:**



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17. Holotype is

A. Duplicate of nomenclature type

B. Specimen selected from original when nomenclature type is missing

C. Specimen originally cited by the author

D. Specimen derived from non original collection.

**Answer:**



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18. Chemotaxonomoy is connected with

- A. Study of chemicals available in plants
- B. Study of life forms and their relationship.
- C. Study of serological reaction
- D. Study of molecular phylogenetics

**Answer:**



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19. Which of the following classification is a sexual system of classification?

- A. Natural System
- B. Artificial System
- C. Phlogenetic system
- D. Natural selection

**Answer:**



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**20.** Genera plantarum of Bentham and Hooker was published in

- A. A single volume
- B. Two volume
- C. Three volume
- D. Four volume

**Answer:**



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**21.** Plants having flowers with free petals are place under

- A. Gamopetalae

B. Polypetalae

C. Monochlamydeae

D. Dischlamydeae

**Answer:**



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**22. Infraclass includes**

A. 3 orders and 9 families

B. 4 orders and 34 families

C. 6 orders and 23 families.

D. 8 orders and 27 families.

**Answer:**



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23. How many families were described by Bentham and Hooker in their classification?

A. 104

B. 202

C. 204

D. 212

**Answer:**



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24. Thalamiflorae includes

A. 3 orders and 12 families

B. 4 orders and 24 families

C. 5 orders and 27 families

D. 6 orders and 34 families.

**Answer:**



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**25.** Which one of the following series includes the epigynous flowers?

- A. Inferae
- B. Thalamiflorae
- C. Disciflorae
- D. Heteromerae

**Answer:**



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**26.** Polypetalae, Gamospetalae and monochlamydae are subclasses of

- A. Dicotyledonae



B. Monocotyledonae

C. Monochlamydeae

D. Gymnospermae

**Answer:**



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**27. Flower of Fabaceae is**

A. Complete, Actinomorphic, trimerous

B. Complete, zygomorphic, Pentamerous

C. Incomplete, zygomorphic, Trimerous

D. Incomplete, Actinomorphic, Pentamerous.

**Answer:**



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28. Name the family having (9) +1 arrangement of stamens.

A. Solanaceae

B. Asteraceae

C. Liliaceae

D. Fabaceae

**Answer:**



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29. Family Fabaceae belong to series

A. Inferae

B. Thalamiflorae

C. Calyciflorae

D. Disciflorae

**Answer:**



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**30.** Potato belongs to the family

- A. Solanaceae
- B. Compositae
- C. Graminae
- D. Cruciferae

**Answer:**



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**31.** Inflorescence in family Fabceae is

- A. Cymose

B. Racemose

C. Compound

D. Capitulum

**Answer:**



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**32. Leguminous plants possess**

A. Napiform roots

B. Nodulated roots

C. Tuberous roots

D. Fusiform roots

**Answer:**



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**33.** Plants contain naked seeds come under the classification.

A. Monocotyledonae

B. Dicotyledonae

C. Gymnospermae

D. Polypetalae

**Answer:**



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**34.** Father of barcoding is

A. Adolph engler

B. Paul Hebert

C. Arthur Cronquist

D. Karl A prantl

**Answer:**



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**35.** Modern taxonomy is called

A.  $\alpha$  – *taxonomy*

B.  $\beta$  – *taxonomy*

C.  $\Omega$  – *taxonomy*

D.  $\mu$  – *taxonomy*

**Answer:**



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**36.** Botanical name of tomato

A. *Solanum tuberosum*

B. *Solanum melongena*

C. *Lycopersicon trilobatum*

D. *Lycopersicon esculentum*

**Answer:**



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**37.**  $\alpha$  - taxonomy deals with

A. Classical taxonomy

B. Chemotaxonomy

C. Phylogeny

D. Experimental taxonomy

**Answer:**



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38. Classical taxonomy is also termed

- A.  $\beta$  – taxonomy
- B. Systematics
- C. Descriptive taxonomy
- D. Experimental taxonomy

**Answer:**



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39. Which of the following suffixes used for units of classification in plants indicate a taxonomic category of 'family'?

- A. Ales
- B. Ineae
- C. Aceae
- D. Eae



**Answer:**



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**40.** Genus represents

- A. An individual plant or animal
- B. A collection of plants or animals
- C. Group of closely related species of plants or animals
- D. none of these.

**Answer:**



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41. Match the following and choose the correct option:-

A - Family	- i) tuberosum
B - kingdom	- ii) Polymoniales
C - Order	- iii) Solanum
D - Species	- iv) Plantae
E - Genus	- v) Solanaceae



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42. Two words comprising the binomial nomenclature are

- A. Family & genus
- B. Order & Family
- C. Genus & Species
- D. Genus & tribe

**Answer:**



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**43.** In classification the category below the level of family is

- A. Class
- B. Species
- C. Phylum
- D. Genus

**Answer:**



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**44.** Hierarchical classification means

- A. To divide division into classes
- B. To divide classes into orders
- C. To divide Orders into families
- D. To rank things one above the other

**Answer:**



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**45.** A group of interconnected genera is called

- A. Family
- B. Order
- C. Phylum
- D. Class

**Answer:**



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**46.** The suffix phyta indicates

- A. Family

B. Order

C. Class

D. Division

**Answer:**



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47. Plants having flowers with cup shaped thalamus included in the series.

A. Thalamiflorae

B. Disciflorae

C. Calcyciflorae

D. Inferae

**Answer:**



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48. Thalamus is dome or conical shape in

- A. hypogynous
- B. Disciflorae
- C. Calciflorae
- D. Inferae

Answer:



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49. Which of the following is a correct sequence?

A.

*Labell*  $\in$  *grarpres sing*  $\rightarrow$  *col*  $\leq$  *ction*  $\rightarrow$  *Mounta*  $\in$  *g*  $\rightarrow$  *Protectio*

B.

*Col*  $\leq$  *ction*  $\rightarrow$  *Pres sing*  $\rightarrow$  *Mount*  $\in$  *g*  $\rightarrow$  *Labell*  $\in$  *g*  $\rightarrow$  *Protectio*

C.

*Col ≤ ction → Pres sing → Labell ∈ g → Mouna ∈ g → Protect*

D.

*Pres sing → Col ≤ ction → Labell ∈ g → Protection → Mount ∈*

**Answer:**



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50. Flowers with more than two carpel are included in the series

A. Bicarpellatae

B. Calciflorae

C. Thalamiflorae

D. Heteromerae

**Answer:**



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51. The out come of a cladistic analysis is \_\_\_\_\_

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52. Fruits develop and matures from underground is \_\_\_\_\_

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53. Asexual reproductive stage of fungus is called \_\_\_\_\_

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54. Sexual reproductive stage of fungus is called \_\_\_\_\_

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55. A fossil taxon is called \_\_\_\_\_



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56. 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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57. 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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**58.** Select the correct order

A.

*Class* →  $K \in gdom$  → *Phylum* → *Order* → *Gevs* → *Family* → *Species*

B.

*Family* →  $K \in gdom$  → *Order* → *Class* → *Gevs* → *Species* → *Phylum*

C.

*Species* → *Family* → *Gevs* → *Order* → *Phylum* →  $K \in gdom$  → *Class*

D.

$K \in gdom \rightarrow Phylum \rightarrow Class \rightarrow Order \rightarrow Family \rightarrow Gevs \rightarrow k$

**Answer:**



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59. Plants having flowers with dome shaped thalamus included in the series

A. Thalamiflorae

B. Disciflorae

C. Calyciflorae

D. Inferae

**Answer:**



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60. Flowers are zygomorphic in \_\_\_\_\_.

A. Ceropogia

B. Thevetia

C. Datura

D. Solarium

**Answer:**



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



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



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**63.** Define karyotaxonomy.

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**64.** What is cladistics?

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**65.** How many genera and species are found in Fabaceae?

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

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67. What is the role of national gardens in conserving biodiversity-  
Discuss.

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68. Describe taxonomic hierarchy with example.

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69. What are the importance of serotaxonomy?

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70. Write the diagnostic features of Solanaceae family.

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**71.** What is DNA barcoding?



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



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**73.** Name the kinds of nomenclatural types.



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**74.** What are microsatellites?



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75. How will you prepare a herbarium specimen?



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## Example

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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6. What are the uses of taxonomy?

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7. Define Taxonomy.

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8. Define systematics

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9. What is taxonomic hierarchy.

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10. What are the types of species?

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11. What is biological species?

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12. Define morphological species.

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13. What is pylogenetic species?

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14. What is Nomenclature?

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15. What is ICN?

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16. What is ICN?

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17. What is author citation?

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18. Mention four nomenclatural types.

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19. Mention four nomenclatural types.

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20. What is holotype?

 [Watch Video Solution](#)

21. What is Lectotype?

 [Watch Video Solution](#)

22. What is syntype?

 [Watch Video Solution](#)

23. What is neotype?

 [Watch Video Solution](#)

24. What is paratype?

 [Watch Video Solution](#)

25. What is epitype?

 [Watch Video Solution](#)

26. What is taxonomic key?

 [Watch Video Solution](#)

27. What is local flora?

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28. What is regional flora?

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29. What is continental flora?

 [Watch Video Solution](#)

30. What is electronic flora?



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31. What do you know about the national botanical garden, Lucknow?



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32. Define herbarium specimen.



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33. What are the types of classification?



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34. What are the 3 major classes of natural system of classification?



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**35.** Write short notes on Gymnospermae.

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**36.** What are the sub-classes of Magnoliopsida?

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

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**38.** What are the chemical characters used in chemotaxonomy?

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



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

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**41.** Define biosystematics.

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**42.** Define karyotaxonomy.

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**43.** What is serotaxonomy?

 [Watch Video Solution](#)

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

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**45.** What is Microsatellites?

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**46.** Write the significance of DNA barcoding?

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**47.** What is cladistics?

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

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49. What is monophyletic group?

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50. What is polyphletic group?

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51. What is polyphletic group?

 [Watch Video Solution](#)

52. What is cladistics?

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53. How many genera and species are found in Fabaceae?

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54. Name the fibre yielding plants of Fabaceae.

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55. Write the oil plants and their uses of fabaceae family.

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56. Name the dye plants of fabaceae and write their uses.

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57. Name the green manure plants of fabaceae.



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58. Name any three ornamental plants of Fabaceae.



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59. What are the branches of botany?



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60. List the differences between taxonomy and systematics.



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61. What is species?



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62. What is genus?

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63. What is taxonomic family?

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64. What is order in taxonomy?

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65. What is class in taxonomy?

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66. What is division in taxonomy?

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67. What is kingdom in classification?

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68. Describe taxonomic hierarchy with example.

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69. List the characters of species.

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70. What is scientific name?

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71. What is polynomial nomenclature?

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72. What is Binomial Nomenclature?

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73. What is isotype?

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74. What are taxonomic aids?

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75. Write notes on polyclave key.



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76. What is flora?

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77. What is Monograph?

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78. What is meant by Catalogues?

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79. Define botanical garden.

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80. Write short notes on AJCB Indian Botanical garden, Kolkata.

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81. Write short notes on JNTBGRI Trivandrum, Kerala.

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82. Write short notes on the National Orchidarium, Yercaud.

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83. What do you know about Royal botanical garden Kew-England?

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84. Write short notes on herbarium.



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**85.** What are the uses of herbarium.



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**86.** Give examples of International Botanical Gardens.



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**87.** What is the need for classification?



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**88.** What are the Demerits of Artificial system of classification?



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89. Write the characteristics of class Dictyoletonae.

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90. Write short notes on Monochlamydeae.

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91. Write short notes on Monocotyledonae.

 [Watch Video Solution](#)

92. What are the merits of natural system of classification?

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93. What is chemotaxonomy?

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94. Define biosystematics.

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95. What are the importance of erotaxonomy.

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96. What is molecular taxonomy?

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97. Write the significance of molecular taxonomy.

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**98.** Write about AFLP and state its uses.

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**99.** What is RAPD?

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**100.** What is DNA barcoding?

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**101.** Write the diagnostic features of Fabaceae family.

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**102.** Explain 'Geocarpic fruit' with an example.



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**103.** Name the food plants of fabaceae family and write their uses.



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**104.** Name the food plants of fabaceae family and write their uses.



[Watch Video Solution](#)

**105.** Name the timber plants of fabaceae family and write their uses.



[Watch Video Solution](#)

**106.** Name the medicinal plants of fabaceae and write the useful part and their uses



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**107.** Write the diagnostic features of Solanaceae family.



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**108.** Write about the food plants of Liliaceae.



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**109.** Write the vegetative characters of *Allium cepa*.



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**110.** Write about the habit of Solanaceae.



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**111.** Name the ornamental plants of Solanaceae.

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

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**113.** What are the principles of ICN?

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**114.** What are the changes implemented in 18th International Botanical congress?

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**115.** What are vernacular names (or) common name?

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**116.** Describe the author citation.

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**117.** Define - dichotomous key.

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**118.** What do you know about taxonomic revisions?

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**119.** How will you prepare a herbarium specimen?



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120. Write short notes on Kew garden.



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121. What do you know about Botanical Survey of India?



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122. Write few points about Biological classification.



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123. Write a brief note on the artificial system of classification.



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**124.** Write notes on subclass Polypetalae.

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**125.** Write short notes on gamopetalae.

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**126.** Write short notes on Adolph Engler

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**127.** Write short notes on Arthur Cronquist system of classification.

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**128.** Write short notes on Angiosperm Phylogeny group (APG) classification.

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**129.** Write the general characteristics of early angiosperms.

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**130.** Write the general characteristics of monocots.

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**131.** Write the general characteristics of Eudicots.

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**132.** Write short notes on cladistic analysis.



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**133.** Give the vegetative characters of Fabaceae.



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**134.** Write about the habit of Fabaceae family.



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**135.** Give the floral characters of Fabaceae.



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**136.** Write about the floral characters of Datura metel.



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**137.** Give the vegetative characters of *Datura metel*.



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**138.** Write about food plants of Solanaceae.



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



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**140.** Name any three ornamental plants of Liliaceae.



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141. Write the Binomials of any three medicinally useful plants in Liliaceae.



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