

Roll No.

Question Booklet Number

O. M. R. Serial No.

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Question Booklet Number

**M. Sc. (Second Semester) (NEP)
EXAMINATION, 2022-23**

BOTANY

(Taxonomy of Angiosperms And Biosystematics)

Paper Code							
B	0	4	0	8	0	1	T

Questions Booklet
Series

A

Time : 1:30 Hours]

[Maximum Marks : 75

Instructions to the Examinee :

1. Do not open the booklet unless you are asked to do so.
2. The booklet contains 100 questions. Examinee is required to answer 75 questions in the OMR Answer-Sheet provided and not in the question booklet. All questions carry equal marks.
3. Examine the Booklet and the OMR Answer-Sheet very carefully before you proceed. Faulty question booklet due to missing or duplicate pages/questions or having any other discrepancy should be got immediately replaced.

परीक्षार्थियों के लिए निर्देश :

1. प्रश्न-पुस्तिका को तब तक न खोलें जब तक आपसे कहा न जाए।
2. प्रश्न-पुस्तिका में 100 प्रश्न हैं। परीक्षार्थी को 75 प्रश्नों को केवल दी गई OMR आन्सर-शीट पर ही हल करना है, प्रश्न-पुस्तिका पर नहीं। सभी प्रश्नों के अंक समान हैं।
3. प्रश्नों के उत्तर अंकित करने से पूर्व प्रश्न-पुस्तिका तथा OMR आन्सर-शीट को सावधानीपूर्वक देख लें। दोषपूर्ण प्रश्न-पुस्तिका जिसमें कुछ भाग छपने से छूट गए हों या प्रश्न एक से अधिक बार छप गए हों या उसमें किसी अन्य प्रकार की कमी हो, तो उसे तुरन्त बदल लें।

(Remaining instructions on the last page)

(शेष निर्देश अन्तिम पृष्ठ पर)

(Only for Rough Work)

1. Who is the father of Botany ?
 - (A) Theophrastus
 - (B) B. de Jussieu
 - (C) Carolus Linnaeus
 - (D) John Ray

2. According to Takhtajan system of classification which order is most primitive among the following plants ?
 - (A) Ericales
 - (B) Magnoliales
 - (C) Alismatales
 - (D) Fagales

3. Epigynous gamopetalous family is :
 - (A) Apiaceae
 - (B) Asteraceae
 - (C) Rosaceae
 - (D) Myrtaceae

4. Chemotaxonomy is connected with :
 - (A) Classification of chemical found in plant
 - (B) Use of phytochemical data in systematic botany
 - (C) Chemical analysis of plant
 - (D) Statistical analysis of plant

5. The chief merit of Bentham and Hooker's classification is.....
 - (A) It is natural system of classification.
 - (B) Evolutionary based classification.
 - (C) It also considered phylogenetic aspect.
 - (D) The description of taxa are based on actual examination of specimens.

6. α taxonomy deals with :
 - (A) Classical Taxonomy
 - (B) Chemotaxonomy
 - (C) Phylogeny
 - (D) Experimental taxonomy

7. Colchicine is obtained from a member of family :
 - (A) Solanaceae
 - (B) Liliaceae
 - (C) Fabaceae
 - (D) Asteraceae

8. Quinine medicine is obtained from :
 - (A) *Cinchona calisoya*
 - (B) *Adina cordifolia*
 - (C) *Coffea robusta*
 - (D) *Oldentandia corymposa*

9. Full name of Botanist Takhtajan is :
- (A) Arthur Takhtajan
(B) Armer Takhtajan
(C) George Takhtajan
(D) Joseph Takhtajan
10. Code and Botanical Nomenclature divide three parts :
- (A) Principles, Rules and Recommendation
(B) Families, Genus and Species
(C) Both (A) and (B)
(D) None of the above
11. The common name of *Eleusine corocana* is :
- (A) Ragi
(B) Barley
(C) Wheat
(D) Oats
12. The economic product of tobacco plant is :
- (A) Flower
(B) Leaves
(C) Root
(D) Stem
13. *Vinca rosea* belongs to family :
- (A) Euphorbiaceae
(B) Malvaceae
(C) Apocynaceae
(D) Solanaceae
14. Taxon is defined as :
- (A) Taxonomic unit
(B) Species
(C) Taxonomic group of any rank
(D) Genus
15. Cyathium is a type of :
- (A) Flower
(B) Calyx
(C) Inflorescence
(D) Stamen
16. In Black gram which type of placentation is present ?
- (A) Axile
(B) Parietal
(C) Marginal
(D) None of the above

17. Who among the following popularized the use of embryological characters in taxonomy ?
- (A) Carl Linnaeus
(B) Panchanan Maheshwari
(C) Birbal Sahni
(D) Bentham and Hooker
18. Embryological evidence indicates that Lamnaceae family is evolved from :
- (A) Arecaceae
(B) Fabaceae
(C) Poaceae
(D) Orchidaceae
19. One of the best methods for understanding general relationships of plant is :
- (A) Cytotaxonomy
(B) Experimental Taxonomy
(C) Numerical Taxonomy
(D) Chemotaxonomy
20. Level of taxonomy the method refers to the analysis of interspecific variability and study of evolution is called :
- (A) alpha taxonomy
(B) beta taxonomy
(C) gamma taxonomy
(D) theta taxonomy
21. The half inferior ovary is present in :
- (A) Plum
(B) Mustard
(C) Brinjal
(D) Sunflower
22. Axile Placentation is found in :
- (A) Asteraceae and Brassicaceae
(B) Malvaceae and Cucurbitaceae
(C) Liliaceae and Malvaceae
(D) Liliaceae and Brassicaceae
23. The quick referral system in taxonomy :
- (A) Museum
(B) Herbarium
(C) Botanical Garden
(D) Zoological Parks
24. APG Group (IV) was published in year :
- (A) 2009
(B) 2016
(C) 1998
(D) 1900

25. When two or more authors publish a new species or propose a new name, their names are linked using the epithet :
- (A) in
(B) ex
(C) et
(D) emend
26. The newly collected specimen which is used as a substitute, when the original type material is missing in herbarium, is designated as :
- (A) Lectotype
(B) Holotype
(C) Neotype
(D) Isotype
27. Highly salt tolerant fruit crop is :
- (A) Date palm
(B) Banana
(C) Coconut palm
(D) Grape
28. How many species does the Orchidaceae family have ?
- (A) 26,000
(B) 24,000
(C) 28,000
(D) 20,000
29. Who were the first to use orchids in traditional medicines ?
- (A) Greek
(B) Chinese
(C) Egyptian
(D) Indian
30. Amaryllidaceae differ from Liliaceae in having :
- (A) Actinomorphic to slightly zygomorphic flower
(B) Inferior ovary
(C) Axile placentation
(D) Number of six perianth
31. Sago (Sabudana) belong to which family ?
- (A) Aracaceae
(B) Apocyanaceae
(C) Asclepiadaceae
(D) Malvaceae
32. Binomials with identical genus, name and specific epithet are called :
- (A) Homonym
(B) Tautonym
(C) Basionym
(D) Synonym

33. Endosperm is absent in :
- (A) Orchidaceae
(B) Compositae (Asteraceae)
(C) Poaceae
(D) Malvaceae
34. $\oplus \text{ } \overset{\uparrow}{\text{♀}} P_{(3+3)} A_{3+3} G(\underline{3}) \text{ or } (\bar{3})$ floral formula belongs to family :
- (A) Arecaceae
(B) Amaryllidaceae
(C) Malvaceae
(D) Orchidaceae
35. Number of perianth in family Moraceae is :
- (A) 2
(B) 4
(C) 5
(D) 6
36. Correct floral formula of *Capparis spinosa* is :
- (A) $\oplus \text{ } \overset{\uparrow}{\text{♀}} K_{2+2} C_4 A_\alpha G \underline{2-6}$
(B) $\oplus \text{ } \overset{\uparrow}{\text{♀}} K_{2+2} C_4 A_6 G \underline{2}$
(C) $\oplus \text{ } \overset{\uparrow}{\text{♀}} K_5 C_5 A_\alpha G_\alpha$
(D) $\oplus \text{ } \overset{\uparrow}{\text{♀}} K_5 C_5 A_5 G (\underline{3})$
37. Gynobasic style from the base of ovary is a characteristic of family :
- (A) Lamiaceae
(B) Solanaceae
(C) Asteraceae
(D) Poaceae
38. Floral formula does not deal about :
- (A) Ovary position
(B) Whorls of floral part
(C) Number of floral part
(D) Placentation and aestivation
39. Gymnosperm has been placed in between dicot and monocot in plant classification by :
- (A) Charles and Bessey
(B) Bentham and Hooker
(C) John Hutchinson
(D) Engler and Prantdl
40. In family Asclepiadaceae the stamens are modified and known as :
- (A) Syngenesious
(B) Sinuous
(C) Translator
(D) Androphore

41. Correct statement applicable to family Myrtaceae :
- (A) Zygomorphic flower
 - (B) Hypogynous flower
 - (C) Limited stamens
 - (D) Inferior ovary
42. The starting family in Bentham and Hooker's classification :
- (A) Ranunculaceae
 - (B) Poaceae
 - (C) Liliaceae
 - (D) Magnoliaceae
43. The gynoecium with fused carpel is called :
- (A) Syncarpous
 - (B) Apocarpous
 - (C) Syngenesious
 - (D) Synandrous
44. Bicarpellary Gynoecium with obliquely placed septum is seen in :
- (A) Banana
 - (B) Brinjal
 - (C) Pisum
 - (D) Mustard
45. International size of Herbarium sheet is :
- (A) 49 cm × 22 cm
 - (B) 41.5 cm × 29 cm
 - (C) 22.5 cm × 49 cm
 - (D) 29 cm × 42 cm
46. Where is the British Museum of Royal Botanical Garden located ?
- (A) Paris
 - (B) Kew
 - (C) Kolkata
 - (D) Dehradun
47. Give the name of persistent and accrescent sepals :
- (A) Brinjal
 - (B) Tomato
 - (C) Both (A) and (B)
 - (D) None of the above
48. Name the type of inflorescence found in Banyan :
- (A) Hypanthodium
 - (B) Verticillaster
 - (C) Capitulum
 - (D) None of the above

49. The label of a herbarium sheet does not carry information on :
- (A) Local name
 - (B) Date of collection
 - (C) Height of plant
 - (D) Name of collector
50. Anthophore found in *Dianthus* belongs to family :
- (A) Apocynaceae
 - (B) Fabaceae
 - (C) Caryophyllaceae
 - (D) Capparidaceae
51. When condition of stamen is which anthers one united and filament are free called :
- (A) Syngenesious
 - (B) Adelphous
 - (C) Both (A) and (B)
 - (D) None of the above
52. The book 'Principles of Numerical Taxonomy' is compiled by :
- (A) Sokal and Sheath
 - (B) Linnaeus
 - (C) Adanson
 - (D) Bentham and Hooker
53. Which of the following families is known as sedge family ?
- (A) Cyperaceae
 - (B) Poaceae
 - (C) Arecaceae
 - (D) Liliaceae
54. Bentham and Hooker divided plant in their classification in :
- (A) 202 orders
 - (B) 186 orders
 - (C) 205 orders
 - (D) 206 orders
55. The number of ICBN principles is :
- (A) 8
 - (B) 3
 - (C) 5
 - (D) 6
56. Correct publication order of book "Fundamental Botanica, Critica Botanica, and Species Plantarum" is :
- (A) 1736 – 1737 – 1753
 - (B) 1736 – 1737 – 1873
 - (C) 1836 – 1837 – 1573
 - (D) 1726 – 1733 – 1573

57. The highly modified tepal of Orchidaceae flower is called :
- (A) Lip or Labellum
 - (B) Spur
 - (C) Standard
 - (D) Wings
58. The study of spore morphology of embryophytic plants and pollen morphology is termed as :
- (A) Chemotaxonomy
 - (B) Palynotaxonomy
 - (C) α -taxonomy
 - (D) β -taxonomy
59. Full form of APG is :
- (A) About Plant Growth
 - (B) Angiosperm Phylogeny Group
 - (C) Angiosperm Plant Growth
 - (D) Angiosperm of Particularly Growth
60. Peppermint [*Mentha piperita*] belongs to family :
- (A) Rosaceae
 - (B) Asclepiadaceae
 - (C) Asteraceae
 - (D) Lamiaceae
61. Taxonomic key is one of the taxonomic tools in the identification and classification of plant :
- (A) Monograph
 - (B) Flora
 - (C) Both (A) and (B)
 - (D) None of the above
62. Lint and Fuzz are characteristics of long fiber of :
- (A) Flax
 - (B) Jute
 - (C) Cotton
 - (D) Coir

63. Identification of species based on nucleotide diversity of short DNA segments is called :
- (A) DNA Sequencing
 - (B) DNA Barcoding
 - (C) Gene Bank
 - (D) Protein Coding
64. OTU in taxonomy stands for :
- (A) Operative Taxonomic Unit
 - (B) Operational Taxonomic Unit
 - (C) Only Taxonomic Unit
 - (D) One Taxonomic Unit
65. *Justica* is a large broadly distributed genus of flowering plant family belong to :
- (A) Malvaceae
 - (B) Asteraceae
 - (C) Cucurbitaceae
 - (D) Acanthaceae
66. Very hard wood *Tectona grandis* belongs to family :
- (A) Verbenaceae
 - (B) Asteraceae
 - (C) Orchidaceae
 - (D) Solanaceae
67. Clove is a :
- (A) fruit
 - (B) dry flower bud
 - (C) stigma
 - (D) seed
68. Groundnut oil is formed from :
- (A) *Pisum sativum*
 - (B) *Arachis hypogaea*
 - (C) *Glycine max*
 - (D) *Cajanus cajan*
69. Multivariate statistical analysis used to group organism into separate clusters is called :
- (A) Cluster Analysis
 - (B) Phenetic Analysis
 - (C) Complete Linkage
 - (D) Arithmetic Method

70. Feathery stigma is found in which family ?
- (A) Moraceae
(B) Musaceae
(C) Poaceae
(D) Fabaceae
71. In Caryophyllaceae the placentation is :
- (A) Marginal
(B) Axile
(C) Free central
(D) Basal
72. The system of classification followed by most of the herbaria of the world is that of :
- (A) Bessey
(B) Bentham and Hooker
(C) Hutchinson
(D) Engler and Prandtl
73. Name a marshy plant of family Acanthaceae :
- (A) Hygrophila
(B) Sterculia
(C) Crotalaris
(D) Asparagus
74. The pollengrain are united in two waxy masses called pollina found in family :
- (A) Caryophyllaceae
(B) Asclepiadaceae
(C) Boraginaceae
(D) Poaceae
75. The largest petals in a Papilionaceous flower is :
- (A) Standard
(B) Keel
(C) Wing
(D) None of the above
76. ICBN is :
- (A) International Code of Botanical Nomenclature
(B) International Culture of Botanical Nomenclature
(C) International Condition of Botanical Nomenclature
(D) International Conversation of Botanical Nomenclature

77. The term 'taxonomy' was first proposed by :
- (A) Lamarck
(B) Nageli
(C) A. P. de Candolle
(D) Carlous Linnaeus
78. The number of species classified in species Plantarum :
- (A) 5900
(B) 6000
(C) 4000
(D) 3800
79. Aerial roots having velamen are found in the member of family :
- (A) Arecaceae
(B) Amaryllidaceae
(C) Orchidaceae
(D) Rosaceae
80. Coconut oil found from *Cocos nucifera* belongs to family :
- (A) Arecaeae
(B) Poaceae
(C) Rubiaceae
(D) Malvaceae
81. Botanical name of Sugarcane is :
- (A) *Beta vulgaris*
(B) *Saccharum officinalis*
(C) *Ricinus communis*
(D) None of the above
82. Sida, a member of family Malvaceae does not show this prominent trait :
- (A) Axile placentation
(B) Monadelphous stamens
(C) Alternate stipulate leaves
(D) Presence of epicalyx
83. Find out the false statement with regard to family Asteraceae :
- (A) Cypsela fruits
(B) Capitulum inflorescence
(C) Hypogynous flower
(D) Syngenesious anther
84. *Lycopersicon esculantum* is common name of :
- (A) Tomato
(B) Potato
(C) Brinjal
(D) Maize

85. Name a plant where gynostegium is found :
- (A) *Calotropis procera*
 (B) *Nymphaea*
 (C) *Dracaena*
 (D) Both (A) and (B)
86. Which character among the angiosperms is most important taxonomically to differentiate it from gymnosperm ?
- (A) Triploid endosperm
 (B) Presence of vessels in xylem
 (C) Attractive petals
 (D) Seed enclosed in fruit
87. Adnate stipules are found in family :
- (A) Malvaceae
 (B) Rosaceae
 (C) Rubiaceae
 (D) Liliaceae
88. Nodulated roots are characteristic of family :
- (A) Fabaceae
 (B) Asteraceae
 (C) Poaceae
 (D) Solanaceae
89. Two important Papilionaceous timber woods are :
- (A) *Dalbergia sissoo* and *Albizia lebbek*
 (B) *Butea monosperma* and *Xylocopa xylocapa*
 (C) *Dalbergia sissoo* and *Intisia hookeri*
 (D) *Dalbergia sissoo* and *Pterocarpus*
90. Basic unit of classification is :
- (A) Genus
 (B) Class
 (C) Species
 (D) Order
91. The scientific name when printed should be :
- (A) In capital letter
 (B) In small letter
 (C) In italics
 (D) Underlined
92. Headquarters of Botanical Survey of India (BSI) is located in :
- (A) New Delhi
 (B) Kolkata
 (C) Lucknow
 (D) Dehradun

93. Champa (*Michelia champaca*) belongs to family :
- (A) Magnoliaceae
(B) Apocynaceae
(C) Asteraceae
(D) Orchidaceae
94. The inflorescence of Paddu is :
- (A) Racemose
(B) Catkin
(C) Panicle
(D) Verticillaster
95. $\oplus \overset{\text{♂}}{\text{♀}} K_{(5)} \overset{\curvearrowright}{C_{(5)}} A_5 G(\underline{2})$ is the floral formula of :
- (A) *Brassica*
(B) *Petunia*
(C) *Alium*
(D) *Sesbania*
96. Which is the correct class of Banana ?
- (A) Plantae
(B) Lilopsida
(C) Musaceae
(D) *Musa acuminata*
97. Pink family or carnation family is common name of :
- (A) Caryophyllaceae
(B) Amaranthaceae
(C) Rosaceae
(D) None of the above
98. *Pyrus malus* (apple) belong to family :
- (A) Rubiaceae
(B) Rosaceae
(C) Poaceae
(D) Solanaceae
99. Botanical name of Rubber tree plant is :
- (A) *Hevea brassilliensis*
(B) *Manihot esculenta*
(C) *Manihot glaziovii*
(D) *Jatropha goespifolia*
100. Takhtajan divided Angiosperm into no. of class :
- (A) Two
(B) Three
(C) Four
(D) Five

4. Four alternative answers are mentioned for each question as—A, B, C & D in the booklet. The candidate has to choose the correct answer and mark the same in the OMR Answer-Sheet as per the direction :

Example :

Question :

Q. 1 (A) ● (C) (D)

Q. 2 (A) (B) ● (D)

Q. 3 (A) ● (C) (D)

Illegible answers with cutting and over-writing or half filled circle will be cancelled.

5. Each question carries equal marks. Marks will be awarded according to the number of correct answers you have.
6. All answers are to be given on OMR Answer sheet only. Answers given anywhere other than the place specified in the answer sheet will not be considered valid.
7. Before writing anything on the OMR Answer Sheet, all the instructions given in it should be read carefully.
8. After the completion of the examination candidates should leave the examination hall only after providing their OMR Answer Sheet to the invigilator. Candidate can carry their Question Booklet.
9. There will be no negative marking.
10. Rough work, if any, should be done on the blank pages provided for the purpose in the booklet.
11. To bring and use of log-book, calculator, pager and cellular phone in examination hall is prohibited.
12. In case of any difference found in English and Hindi version of the question, the English version of the question will be held authentic.

Impt. : On opening the question booklet, first check that all the pages of the question booklet are printed properly. If there is any discrepancy in the question Booklet, then after showing it to the invigilator, get another question Booklet of the same series.

4. प्रश्न-पुस्तिका में प्रत्येक प्रश्न के चार सम्भावित उत्तर—A, B, C एवं D हैं। परीक्षार्थी को उन चारों विकल्पों में से सही उत्तर छँटना है। उत्तर को OMR आन्सर-शीट में सम्बन्धित प्रश्न संख्या में निम्न प्रकार भरना है :

उदाहरण :

प्रश्न :

प्रश्न 1 (A) ● (C) (D)

प्रश्न 2 (A) (B) ● (D)

प्रश्न 3 (A) ● (C) (D)

अपठनीय उत्तर या ऐसे उत्तर जिन्हें काटा या बदला गया है, या गोले में आधा भरकर दिया गया, उन्हें निरस्त कर दिया जाएगा।

5. प्रत्येक प्रश्न के अंक समान हैं। आपके जितने उत्तर सही होंगे, उन्हीं के अनुसार अंक प्रदान किये जायेंगे।
6. सभी उत्तर केवल ओ. एम. आर. उत्तर-पत्रक (OMR Answer Sheet) पर ही दिये जाने हैं। उत्तर-पत्रक में निर्धारित स्थान के अलावा अन्यत्र कहीं पर दिया गया उत्तर मान्य नहीं होगा।
7. ओ. एम. आर. उत्तर-पत्रक (OMR Answer Sheet) पर कुछ भी लिखने से पूर्व उसमें दिये गये सभी अनुदेशों को सावधानीपूर्वक पढ़ लिया जाये।
8. परीक्षा समाप्ति के उपरान्त परीक्षार्थी कक्ष निरीक्षक को अपनी OMR Answer Sheet उपलब्ध कराने के बाद ही परीक्षा कक्ष से प्रस्थान करें। परीक्षार्थी अपने साथ प्रश्न-पुस्तिका ले जा सकते हैं।
9. निगेटिव मार्किंग नहीं है।
10. कोई भी रफ कार्य, प्रश्न-पुस्तिका के अन्त में, रफ-कार्य के लिए दिए खाली पेज पर ही किया जाना चाहिए।
11. परीक्षा-कक्ष में लॉग-बुक, कैलकुलेटर, पेजर तथा सेल्युलर फोन ले जाना तथा उसका उपयोग करना वर्जित है।
12. प्रश्न के हिन्दी एवं अंग्रेजी रूपान्तरण में भिन्नता होने की दशा में प्रश्न का अंग्रेजी रूपान्तरण ही मान्य होगा।

महत्वपूर्ण : प्रश्नपुस्तिका खोलने पर प्रथमतः जाँच कर देख लें कि प्रश्न-पुस्तिका के सभी पृष्ठ भलीभाँति छपे हुए हैं। यदि प्रश्नपुस्तिका में कोई कमी हो, तो कक्षनिरीक्षक को दिखाकर उसी सिरीज की दूसरी प्रश्न-पुस्तिका प्राप्त कर लें।