

**Department of Botany
School of Chemical & Life Sciences
Jamia Hamdard, New Delhi-110062**

**M.Sc. BOTANY
I SEMESTER EXAMINATION DECEMBER 2023**

Paper Name: **Plant Diversity and Systematics of Angiosperms** Paper Code: **MBO-CC101**

Time: **2 ½ hours**

Maximum Marks: **60**

Note: This paper has 3 sections A, B, and C.

Section A: Answer all the questions.

Section B: Attempt any 04 out of 06

Section C: Attempt any 02 out of 03

Abbreviations used:

CLO-Course Learning Outcomes

CLO1: interpret the morphological, anatomical and reproductive features of algae, bryophytes, pteridophytes, gymnosperms and angiosperms (apply);

CLO 2: recognize the origin and evolution of plants and concept, components and aims of plant systematics (understand);

CLO 3: explain the taxonomic hierarchy, interpret the principles and rules of ICN in botanical nomenclature (understand/evaluate); and

CLO 4: classify and predict the relationship among the plants based on molecular data (understand and evaluate).

BTL-Bloom's Taxonomy Levels

1- Remembering, 2-Understanding, 3-Applying, 4-Analyzing, 5-Evaluating, 6-Creating

SECTION A

Very Short Type Question (15 questions)

15 x 1 = 15 marks

Q.No.	Question	Marks	CLO	BTL
1	What are the three main groups of bryophytes?	1	1	1
2	Differentiate between synapomorphy and autapomorphy	1	4	4
3	What is the primary purpose of phylogenetic analysis in biological research?	1	4	5
4	Differentiate between 'Flora' and 'flora'.	1	2	2
5	Name a bryophyte in which the basal part of capsule is meristematic	1	1	1
6	What is DNA barcoding?	1	4	1
7	Taxon, a bulletin published by International Association of Plant Taxonomy is an example of taxonomic literature called.....	1	2	1
8	Flora of Delhi is authored by	1	2	1
9	A.....represents a monophyletic ancestor descendent lineage.	1	3	2
10	Pteridophytes are cryptogam with well developedsystem	1	1	2
11	Name a plant group in which embryo is not formed after gametic union.	1	1	1
12	Define phenetics.	1	4	2
13	What does " <i>Euphorbia pulcherima</i> Willd. ex Klotzsch." represent?	1	3	4
14	ICN stands for.....	1	3	1
15	Define 'taxonomic hierarchy'.	1	3	1

SECTION B

Short Type Question. (Attempt any **FOUR**)

4 x 5 = 20 marks

Q.No.	Question	Marks	CLO	BTL
1	Provide insights into the adaptive features that played a role in the evolution of bryophytes.	5	2	4
2	What are the evolutionary advantages and adaptations that allowed gymnosperms to thrive in various environments?	5	2	4
3	Define the term "species concept" and explain the different species concepts that have been proposed.	5	3	1
4	What are the different methods for phylogenetic analysis? Explain briefly.	5	4	2
5	Briefly explain the different steps used in cladistics analysis.	5	4	4
6	Explain the concept of "nomenclatural types" and their importance in botanical nomenclature.	5	3	4

SECTION C

Long type Question (Attempt any **TWO**)

2 x 12.5 = 25 marks

Q.No.	Question	Marks	CLO	BTL
1	Contrast and compare the Pre-Darwinian and Post-Darwinian classification of angiosperms.	12.5	4	4
2	Elaborate the role of plant genomes, including the nuclear, chloroplast, and mitochondrial genomes, in advancing molecular systematics.	12.5	4	4
3	Describe in detail the aims, phases and components of plant systematics.	12.5	2	2
