

M.Sc. 4th Semester Examination, 2025

BOTANY

(Molecular Syatematics)

PAPER—BOT-495A

(Practical)

Full Marks : 25

Time : 5 hours

**Attempt Q.No. 1 or 2 and answer all the rest
of the questions 3, 4, 5, 6, 7, 8 & 9**

The figures in the right hand margin indicate marks

**1. Chromatography- Paper and Thin Layer
Chromatography (TLC) :**

(a) Perform paper chromatography to
separate plant pigments or amino acids
and calculate Rf values. 4

(b) Conduct thin layer chromatography using
the provided extract and interpret the
results. 2

(Turn Over)

Or

2. SDS-PAGE Gel Electrophoresis (Protein Separation) : 6

(a) Demonstrate the setup and loading of protein samples.

(b) Interpret banding patterns and approximate protein molecular weights. (*Use a standard marker for reference*)

3. Numerical Taxonomy : 4

(a) Prepare a character matrix of 4-5 plant species based on morphological traits.

(b) Calculate basic similarity coefficients and draw a cluster diagram of dendrogram.

4. Herbarium Preparation : 3

(a) Demonstrate specimen pressing, mounting and labelling.

(b) Explain the importance of voucher specimens in taxonomy.

5. Interspecific Morphological Analysis : 3

(a) Compare two plant species using key morphological characters (leaf, flower, stem, etc.).

(b) Record differences and highlight their taxonomic significance.

6. Practical Record Notebook : 2

Assessment based on completeness, clarity and correctness of previous practical work records.

7. Viva Voce : 2

Oral examination based on practical knowledge, principles, and techniques performed.

8. Lab Note Book. 2

9. Viva-voce. 3

