[This question paper contains 4 printed pages.]

Sr. No. of Question Paper : 696 **G** **Your Roll No.....**

Unique Paper Code : 216501

Name of the Paper : Plant Systematics and Evolution (BTHT-507)

Name of the Course : **B.Sc. (Hons.) Botany**

Semester : V

Duration : 3 Hours Maximum Marks : 75

Instructions for Candidates

1. Write your Roll No. on the top immediately on receipt of this question paper.
2. Attempt **five** questions in all.
3. Question No. **1** is compulsory.
4. All questions carry equal marks.
5. Answer all parts together.

1. (a) Name the author of the following publications (any **five**) : (5×1=5)

   (i) Flora of Delhi

   (ii) *Pinax the atri botanici*

   (iii) Species Plantarum

   (iv) *Theorie elementarie de la botanigue*

   (v) *Familees des plantes*

   (vi) *Die naturlichen Pflanzenfamilen*

   (b) Mention the alternative name and type genus of the following (any **five**) : (5×1=5)

   (i) Gramineae

(ii) Cruciferae

(iii) Compositae

(iv) Umbelliferae

(v) Leguminosae

(vi) Palmae

(c) True or False : (5×1=5)

(i) Theophrastus is the father of taxonomy.

(ii) 1 May 1753 is the starting date for binomial nomenclature

(iii) Holotype is the specimen cited by author to serve as nomenclatural type

(iv) The classification proposed by Takhtajan is natural classification.

(v) The standard size of herbarium sheet is 29 cm × 41.5 cm

2. Write short notes on the following (any **three**) : (3×5=15)

(a) Principles of priority and its limitations

(b) Importance of herbarium in taxonomy

(c) Biological Species Concept

(d) Taxonomic keys for identification

3. (a) Differentiate between the following (any **three**) : (3×4=12)

(i) Monophyly and Polyphyly

(ii) Homology and Analogy

(iii) Natural and Artificial Classification

(iv) Autonym and Tautonym

(b) Name the author who have used the following group names in their classification (any **three**) : (3×1=3)

(i) Monandria

(ii) Magnoliopsida

(iii) Archichlamydeae

(iv) Polypetalae

4. Discuss the following (any **three**) : (3×5=15)

(a) Role of cytology in taxonomy

(b) Various steps involved in numerical taxonomy

(c) Herbaceous origin of angiosperms

(d) Principles of ICBN

5. Explain the salient features of Bentham and Hooker's System of Classification (upto series level). Give its merits and demerits. (15)

6. (a) Interpret the following : (5x1=5)

(i) X *Agropogon lutosus*

(ii) *Delphinium viscosum* Hook. f. *et.* Thomson

(iii) *Carex kashmiriensis* Clarke *in* Hook. f.

(iv) *Rosa floribunda* 'Blessings'

(v) *Abra cadabra* Jones *ex.* Smith

(b) Briefly discuss the type method. (5)

(c) Comment on the role of secondary metabolites in taxonomy. (5)

7. (a) Define the following (any **five**) : (5×1=5)

(i) Flora

(ii) Taxon

(iii) Cladogram

(iv) Annotation label

(v) OTU

(vi) Heterobathmy

(b) Expand the following (any **five**) : (5×1=5)

IAPT; APG; Linn.; *nom. nud.;* ICBN; R. Br.

(c) Place the following to their respective taxonomic rank: (5×1=5)

Malvales; Brassicaceae; Magnoliophyta; Liliopsida; *Ocimum*