10/5/19

[This question paper contains 6 printed pages.]

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Your Roll No.....

Sr. No. of Question Paper : 2337 **IC**

Unique Paper Code : 42161201

Name of the Paper : Plant Ecology and Taxonomy

Name of the Course : **B.Sc. (Prog.)**

Semester : II

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 **Section A** and **B** on SEPARATE SHEETS.
3. Question No. **1** of both sections is COMPULSORY.
4. Attempt **three** questions from **Section A** and **three** questions from **Section B** including question number **1** of both sections.
5. Attempt **all** parts of a question together.

SECTION – A

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

   (i) Pedogenesis

   (ii) Abundance

   (iii) Heliophytes

P.T.O.

(iv) Edge effect

(v) Megatherm

(vi) Autoecology

(vii) Food chain

(b) Match the following : (5×0.5=2.5)

(i) Ecesis	(a) Total water present in soil
(ii) Weathering	(b) Amount of inorganic substance present at any given time in an ecosystem
(iii) Holard	(c) Instrument to measure light intensity
(iv) Standing state	(d) Process of successful establishment of a species in a new area
(v) Lux meter	(e) Process of breakdown of parent rock material

2. Differentiate between **any five** of the following : (5×3=15)

(i) Neoendemism and paleoendemism

(ii) Primary and secondary succession

(iii) Epilimnion and hypolimnion

(iv) Analytical and synthetic characters of community

(v) Capillary water and hygroscopic water

(vi) Pyramid of number and pyramid of biomass

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

(i) Light as an ecological factor

(ii) Phytogeography

(iii) Shelford's law of tolerance

(iv) Hydrosere

4. (a) Write an explanatory note on soil profile with the help of a well labeled diagram. (7)

(b) What are biogeochemical cycles? Discuss nitrogen cycle with the help of a diagram. (8)

SECTION – B

1. (a) Fill in the blanks **(any five)** : (5×1=5)

(i) Classification proposed by _____ is considered as phylogenetic system of classification.

(ii) The branch of taxonomy based on the information obtained from phytochemical studies is _____.

(iii) _____ is a specimen or illustration designated by the author of the species to represent nomenclatural type of species.

(iv) _____ botanical garden is situated in Bengaluru.

(v) _____ is the father of taxonomy.

(vi) The Flora of British India is written by _____.

(vii) The ICN sets the formal starting date of plant nomenclature at _____.

(b) State true or false for the following : (5×0.5=2.5)

(i) Adanson is the father of numerical taxonomy.

(ii) The annotation label is used to write the corrections done for the original label and is appended to the right side of the herbarium sheet.

(iii) The alternate name for family cruciferae is lamiaceae.

(iv) The head office of BSI is situated at Kolkata.

(v) A clade is a group of organisms that includes a single ancestor and all of its descendants.

2. Differentiate between **any five** of the following : (5×3=15)

(i) Artificial and natural system of classification

(ii) Phenogram and cladogram

(iii) Synonym and homonym

(iv) Isotype and neotype

(v) Local flora and regional flora

(vi) Indented (yoked) and parallel key

3. (a) Expand **any five** of the following terms : (5×1=5)

(i) APG

(ii) ICNCP

(iii) L.

(iv) IAPT

(v) Lamk

(vi) *sp. nov.*

(b) Discuss the Principles of ICN. (5)

(c) Explain the role of palynology in taxonomy. (5)

4. (a) Give the merits and demerits of classification proposed by Engler and Prantl. (6)

(b) Interpret **any three** of the following : (3×2=6)

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

(ii) *Vallisneria natans* (Lour.) Hara

(iii) *Gossypium tomentosum* Nutt. *ex* Seem.

(iv) *Phyllanthus* Linn. *emend.* Mull.

(c) Identify the taxonomic rank of **any three** of the following : (3×1=3)

(i) Lamiales

(ii) *Triticum*

(iii) Liliaceae

(iv) Magnoliopsida