This question paper contains **4+1** printed pages]

**Roll No.** | | | | | | | | | | |

S. No. of Question Paper : **1909**

Unique Paper Code : **42174302** **GC-3**

Name of the Paper : **Fundamentals of Plant Systematics and Ecology**

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

Semester : **III**

Duration : **3 Hours** Maximum Marks : **75**

*(Write your Roll No. on the top immediately on receipt of this question paper.)*

Attempt the answers of two Sections (A and B) on two separate answer-sheets.

Attempt *three* questions from each Section.

Question No. **1** of Sections A and B are compulsory.

All parts of a question must be answered together.

## Section A

1. (*a*) Expand the following : 2×0.5=1

(*i*) nom. nud.

(*ii*) DC

(*iii*) ICNCP

(*iv*) IAPT.

P.T.O.

(*b*) Give the alternate names of the following families : 3×0.5=1.5

(*i*) Compositae

(*ii*) Labiatae

(*iii*) Graminae.

(*c*) Fill in the blanks : 5×1=5

(*i*) Binomial nomenclature was established by ..... .

(*ii*) The standard size of a herbarium sheet is ..... .

(*iii*) Author of the book "The Flora of Delhi" is ..... .

(*iv*) Royal Botanical Garden is situated in ..... city.

(*v*) ..... is the species name in which the generic and specific epithets are identical.

2. (*a*) Give an outline of Engler and Prantl's system of classification. 5

(*b*) Enlist any *five* differences between Bentham and Hooker's and Engler and Prantl's system of classification. 5

(*c*) Interpret the following : 5×1=5

(*i*) *Lupinus* [Turne.] L.

(*ii*) *Opuntia bollardia* Britt.et. Rose.

(*iii*) *Acacia leucophloea* (Roxb.) Willd. 1806; *Mimosa leucophloea* Roxb. 1800.

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

(*v*) X *Potinara*.

3. Write short notes on any *three* : 3×5=15

(*i*) Principle of Priority and its limitations

(*ii*) Role of Botanical Gardens

(*iii*) Valid publication

(*iv*) Biological species concept

(*v*) APG-III.

4. Differentiate between any *three* : 3×5=15

(*i*) Artificial and Natural System of classification

(*ii*) Holotype and Neotype

(*iii*) Monograph and Manual

(*iv*) Annotation and Herbarium labels

(*v*) Taxonomic and Nomenclatural Synonyms.

## Section B

1. (*a*) Fill in the blanks : 5×0.5=2.5

(*i*) Instrument used to measure relative humidity is ..... .

(*ii*) ..... is an example of a xerophyte.

(*iii*) Transition zone between two communities where species diversity is high is called as ..... .

(*iv*) Transfer of energy in an ecosystem is ..... while transfer of mineral is ..... .

(*b*) Give *one* word for the following : 5×1=5

(*i*) Name an angiosperm growing as a stem parasite.

(*ii*) A process of nutrient enrichment in water bodies.

(*iii*) Small organisms which feed on the dead bodies of other organisms.

(*iv*) Soil transported by running water.

(*v*) Interlocking food chains.

2. (*a*) What is a food chain ? Give a comparative account of grazing and detritus food chains. 5

(*b*) Illustrate and explain cycling of nitrogen in an ecosystem. 6

(*c*) Explain *one* positive and *one* negative biotic interaction commonly found in nature. 4

3. (*a*) Describe the process of hydrarch succession with the help of diagram. 6

(*b*) Discuss the influence of temperature on plants. 4

(*c*) Give a diagrammatic representation of a typical soil profile. Explain the difference between eluviation and illuviation zones. 5

4. Differentiate between any *three* : 3×5=15

(*i*) Autogenic and Allogenic succession

(*ii*) Heliophytes and Sciophytes

(*iii*) Gravitational and Capillary water

(*iv*) Pyramid of Biomass and Pyramid of Energy

(*v*) Podsolisation and Laterization.