

HEMCHANDRACHARYA NORTH GUJARAT UNIVERSITY, PATAN

Under CBCS-Semester-Grading pattern

B.Sc. (Semester-V & VI) Programme

Elective Subjective Course in BOTANY

ES-BOT-302 (*Fresh Water Ecology*)

Theory teaching hours: 2 Hours/week

Credit: 2.0

Unit-I

- Definitions: Freshwater, Limnology, Lakes, Ponds, Benthos, Bogs, Marshes and Swamps.
- Properties of freshwater: Physio-chemical characteristic, Factors affecting to fresh water ecosystem: abiotic and biotic (Light, Temperature, Vegetation, etc.).
- Types of Freshwater Ecosystem/Classification of Freshwater Habitat - Lentic ecosystems (still water) and lotic ecosystems (flowing water).
- Structure of lake (Freshwater Zonation). Aquatic biodiversity (Freshwater only): Aquatic flora (Algae, fresher plants).

Unit-II

- Aquatic food web and food pyramids, primary productivity. Aquatic ecosystem: goods and services.
- Energy flow in freshwater ecosystem.
- Threats to aquatic ecosystem and remediation: Eutrophication, Acidification, Pollution.
- Global issues and legislation for conservation and management of aquatic systems.

References:

Brown L. (1971). Ecology of Fresh Water. Heinemann Educational Books Ltd, London.

Gopal, B. and Bhardwaj, N. (1979). Elements of ecology. Vikash Publishing House Pvt Ltd., New Delhi.

Sharma P. D. (7<sup>th</sup> Edition - Reprint 2003). Ecology and Environment. Rastogi Publications, Meerut.

Eugene P. Odum (1971). Fundamentals of Ecology. Toppan Company, Japan.

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**B. Sc. (Semester-V and VI) Programme**

Format for Question paper

**Core Complementary Course in Botany**

Time: **3 Hours**

[w. e. f. June 2013 and December 2013]

Total Marks: **70**

1. Long answered and medium answered/short note-typed questions from each Unit-I **20**
  - a. Long answered questions (Attempt any **two** from **three**, each of **7** marks)
  - b. Medium answered or short note-typed questions (Attempt any **two** from **three**, each of **3** marks)
2. Long answered and medium answered/short note-typed questions from each Unit-II **20**
  - a. Long answered questions (Attempt any **two** from **three**, each of **7** marks)
  - b. Medium answered or short note-typed questions (Attempt any **two** from **three**, each of **3** marks)
3. Long answered and medium answered/short note-typed questions from each Unit-III **20**
  - a. Long answered questions (Attempt any **two** from **three**, each of **7** marks)
  - b. Medium answered or short note-typed questions (Attempt any **two** from **three**, each of **3** marks)
4. Questions such as, MCQs, Fill in the blanks, Match the pairs, very short answered questions, etc. **10**  
(Each of **1** Mark) [Total **10**, at least **three** questions from each Unit]

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**B. Sc. (Semester-V and VI) Programme**

Format for Question paper

**Elective (Subject) Course in Botany**

Time: **2 Hours**

[w. e. f. June 2013 and December 2013]

Total Marks: **50**

1. Long answered and medium answered/short note-typed questions from each Unit-I **20**
  - a. Long answered questions (Attempt any **two** from **three**, each of **7** marks)
  - b. Medium answered or short note-typed questions (Attempt any **two** from **three**, each of **3** marks)
2. Long answered and medium answered/short note-typed questions from each Unit-II **20**
  - a. Long answered questions (Attempt any **two** from **three**, each of **7** marks)
  - b. Medium answered or short note-typed questions (Attempt any **two** from **three**, each of **3** marks)
3. Questions such as, MCQs, Fill in the blanks, Match the pairs, very short answered questions, etc. **10**  
(Each of **1** Mark) [Total **10**, **Five** questions from each Unit]

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