

T.Y.B.Sc.
SEMESTER VI
BOTANY



VEER NARMAD SOUTH GUJARAT, UNIVERSITY, SURAT

T.Y. B. Sc. BOTANY SYLLABUS (AS PER CBCS)

EFFECTIVE FROM JUNE-2013

SEMESTER-VI

BOTANY PAPER-601

BOT: 601- PTERIDOPHYTES AND PALEOBOTANY

UNIT-1

General introduction of Pteridophyte

- General character of pteridophytes
- Classification of pteridophytes according to G.M. Smith and Riemers
- General character of following classes
 - I. Psilophytosida
 - II. Psilotopsida
 - III. Lycopsidea
 - IV. Sphenopsida
 - V. Pteropsida
- Habit and Habitat, body structure, internal characters, Reproduction, Gamatophytic phase and Alternation of generation in pteridophytes

UNIT-2

Life History of Pteridophyte

Classification and life history of following types

- I. Lycopsidea- *Selagenella*
- II. Pteropsida- *Op hioelosum and Azolla*

UNIT-3

Paleobotany

- Introduction
- Fossilization and types of fossil
- Nomenclature of fossils
- Geological time table



UNIT-4

Life History of Pteridophyte

Classification and life history of the following types (Excluding development)

- I. **Psilophytopsida- *Rhynia***
- II. **Psilotopsida- *Psilotum***
- III. **Lycopsida- *Lepidodendron***
- IV. **Sphenopsida- *Sphenophyllum***



VEER NARMAD SOUTH GUJARAT, UNIVERSITY, SURAT

T.Y. B. Sc. BOTANY SYLLABUS (AS PER CBCS)

EFFECTIVE FROM JUNE-2013

SEMESTER-VI

BOTANY PAPER-602

**BOT: 602- GYMNOSPERM, FOSSIL GYMNOSPERM AND BOTANICAL
TECHNIQUES**

UNIT-1

Gymnosperm-I

- Introduction and General characters of
- Affinities of gymnosperm with pteridophytes and angiosperm
- Classification and importance characters of following orders

- | | |
|--------------------|----------------|
| I. Cycadofilicales | V. Coniferales |
| II. Bennettitales | VI. Ginkgoales |
| III. Cycadales | VII. Gnetales |
| IV. Corditales | |

UNIT-2

Gymnosperm-II

- Classification and life histories of following types (Excluding development)

- I. *Taxus*
- II. *Ginkgo*
- III. *Ephedra*

UNIT-3

Fossil Botany

General accounts of following types



- I. **Cycadofilicales- *Lyginopteris***
- II. **Cycadeoidales- *Cycadeoidea***
- III. **Corditales- *Cordaites***

UNIT-4

Botanical techniques

- **Herbarium techniques**
 - Introduction
 - Field and collection techniques
 - Function of herbaria
- **Micro techniques**
 - Fixative and fixation
 - Dehydration
 - Infiltration
 - Microtomy
 - Stains
- **Whole mount of minute object**
- **Camera lucida**



VEER NARMAD SOUTH GUJARAT, UNIVERSITY, SURAT

T.Y. B. Sc. BOTANY SYLLABUS (AS PER CBCS)

EFFECTIVE FROM JUNE-2013

SEMESTER-VI

BOTANY PAPER-603

BOT: 603- CELL BIOLOGY AND GENETICS

UNIT-1

Cell Biology-I

- Ultra structure and function of following organelles
- I. **Cell-wall**
- II. **Chromosomes**
- III. **Ribosome**
- IV. **Golgi complex**
- V. **Lysosomes**
- VI. **ER (Endoplasmic reticulum)**
- VII. **Nucleus**

UNIT-2

Cell Biology-II

- Cell-cycle
- Mitosis
- Meiosis

UNIT-3

Genetics- I

- Nucleic acids
- Introduction
- Structure and types of DNA and RNA
- DNA- Replication
- Transformation and transduction



UNIT-4

Genetics-II

- Genetic code
- Mutation
- Lac-operan
- Chromosomal aberrations
- Protein synthesis (Transcription and translation)



VEER NARMAD SOUTH GUJARAT, UNIVERSITY, SURAT

T.Y. B. Sc. BOTANY SYLLABUS (AS PER CBCS)

EFFECTIVE FROM JUNE-2013

SEMESTER-VI

BOTANY PAPER-604

BOT: 604- PLANT ECOLOGY AND PHYTO-GEOGRAPHY

UNIT-1

Ecology

- Introduction, Definition and Brief account of ecological factor.
- Soil as an Edaphic factor
 - Composition of soil
 - Origin and development of soil
 - Soil moisture
 - Soil profile
- Biotic factor- Relationship among the organisms

UNIT-2

Plant community

- Definition, Characteristics and classification of plant community
- Characters of plant community (Analytical and Synthetical)
- Ecological niche
- Methods of studying vegetation
 - Quadrate
 - Transect



UNIT-3

Plant succession

- Definition and Causes of succession
- Process in succession
- Kinds of succession
- Rate of succession
- Limiting factors and trend in succession
- Hydrosere and xerosere

UNIT-4

Phyto-geography

- Forest vegetation of Gujarat
- Mangrove vegetation
- Desert of Gujarat
- Vegetation types of Himalaya
- Remote sensing
- Biological clock or Ecological clock



VEER NARMAD SOUTH GUJARAT, UNIVERSITY, SURAT

T.Y. B. Sc. BOTANY SYLLABUS (AS PER CBCS)

EFFECTIVE FROM JUNE-2013

SEMESTER-VI

BOTANY PAPER-605

BOT: 605- ECONOMIC BOTANY AND PHARMACOGNOSY

UNIT-1

Plants and their utilization

- Fibers
 - Introduction and classification of fibers
 - Plant fibers: Cotton, Jute and Coir
- Timber and firewood species
 - Definition and properties of wood
 - Types of wood
 - Uses of wood
- Distribution, botanical name, family and uses of following timber and firewood plants

I. <i>Accacia nilotica</i>	V. <i>Anogeissus letifolia</i>
II. <i>Azadirachta indica</i>	VI. <i>Dalbergia latifolia</i>
III. <i>Gmelina arborea</i>	VII. <i>Mitragyna pervifolia</i>
IV. <i>Tectona grandis</i>	VIII. <i>Terminalia chrunulata</i>

UNIT-2

Beverages and Beverage plants

- Classification of Beverage plants
- Origin, Botanical description, cultivation, preparation and uses of following beverage plants
 - **Non Alcoholic Beverages:- Tea, Coffee and Cocoa & Chocalate**
 - **Alcoholic Beverages:- Wine, Beer and Tadi**

UNIT-3

Introduction of Pharmacog noc

- Evaluation of drugs by following methods
 - Organoleptic evaluation



- Microscopic evaluation
- Biological evaluation
- Chemical evaluation
- Physical evaluation
- Classification of drugs
 - Classification of drug on the basis of Taxonomy
 - Classification of drug on the basis of Chemical present
 - Classification of drug on the basis of mode of action

UNIT-4

Plant drugs

- Drugs obtained from root: Cochicum
- Drugs obtained from bark: Holarrhena
- Drugs obtained from leaves: Adhatoda
- Drugs obtained from fruits: Dill (Sowa) and Poppy
- Drugs obtained from seeds: Nux vomica
- Underground drugs: Gum and Aloes

Medicinal Plants

- Scientific name, family, distribution, parts used and uses of following medicinal plants

- | | |
|--|---|
| I. <i>Agele marmelos</i> | V. <i>Aristolochia bracteolate</i> |
| II. <i>Cassia tora</i> | VI. <i>Enicostema axillare</i> |
| III. <i>Trigonella foenum-graecum</i> | VII. <i>Rauwolfia serpentine</i> |
| IV. <i>Andrographis peniculata</i> | VIII. <i>Withania somnifera</i> |



VEER NARMAD SOUTH GUJARAT, UNIVERSITY, SURAT

T.Y. B. Sc. BOTANY SYLLABUS (AS PER CBCS)

EFFECTIVE FROM JUNE-2013

SEMESTER-VI

BOTANY PAPER-606

BOT: 606- ELECTIVE PAPER- TAXONOMY AND PALYNOLOGY

UNIT-1

Botanical garden

- Aims of Botanical garden
- Prerequisite of Botanical garden
- Various Botanical gardens of World and India
 - Royal Botanical Garden - Kew
 - New York Botanical Garden- New York
 - Indian Botanical Garden-Calcutta
 - Loyd Botanical Garden- Darjeeling

BSI (Botanical Survey of India)

- Introduction and main objectives of BSI

UNIT-2

Major system of classification of following Botanist and its merits and demerits

- ▶ Angler and Prantl
- ▶ John Hutchinson
- ▶ Bessey



UNIT-3

Angiosperm Families

- Taxonomical studies of the following families with references to their geographical distribution, systematic position, floral variations and economic importance.

I. Papaveraceae	VII. Lythraceae	XII. (12)
II. Portulacaceae	VIII. Oliaceae	Hydrocheritacea
III. Rutaceae	IX. Boraginaceae	e
IV. Rhamnaceae	X. Basalaceae	XIII. (13)Orchidacea
V. Sepindaceae	XI. (11)Casuranace	e
VI. Anacardiaceae	ae	

UNIT-4

Palynology

- Introduction
- Pollen morphology
- Ancient applied aspects of palynology
- Importance of pollen: In food, In medicine, In agriculture and In breeding
- Pollen allergy: Diseases, allergens and control



VEER NARMAD SOUTH GUJARAT, UNIVERSITY, SURAT

T.Y. B. Sc. BOTANY SYLLABUS (AS PER CBCS)

EFFECTIVE FROM JUNE-2013

SEMESTER-VI

CAN SUBJECT : GARDENING

Unit-1

- **Soil :-** Definition, types, components and merits of soil analysis
- **Land scaping**
- **Garden:-** Definition and types of garden, Lawn, Kitchen garden

Unit-2

- **Plough:-** Definition, care taken during plough and merits
- **Manure:-** Organic manure, fertilizer, vermicompost
- **Irrigation:-** Definition, types and importance

Unit-3

- **Pruning:-** Definition, principles, aims, effect on growth and care taken during pruning
- **Framing:-** Definition, types and importance of framing
- **Fencing:-** Definition, types of fencing i.e thorny, wall, wire, wind breaker and importance of fencing

Unit-4

- **Flower arrangement:** Flower and flower arrangement, Importance of flower in home decoration, Types and principles of flower arrangement, Law of flower arrangement, Selection of flower vase, flower and place of arrangement
- **Cultivation of following flowering plants**
 - Rose**
 - Marigold**
 - Gerbera**
 - Crinum**
 - Chrysanthemum**

