

Annexure No.	26 B
SCAA Dated	29.02.2008

BHARATHIAR UNIVERSITY, COIMBATORE.

SYLLABUS FOR ALLIED BOTANY

PAPER – I

(For the candidates admitted during the academic year 2007–08 and on wards)

- Unit I : Thallophyta : Structure, Reproduction and life cycle of the following Clamydomonas, Dictyota, Spirulina, Reproduction and life cycle of the following Saccharomyces and Agaricus. Symptoms, causative organism and control measure of Red rot of sugarcane
- Unit II : Bryophyta, Pteridophyta and Gymnosperms – General characters – Structure, reproduction and life cycle of Funaria, Lycopodium, Cycas (Development details are not required)
- Unit III : Plant Taxonomy : Outline of Bentham and Hookers system of classification – study of the following families with their economic importance – Annonaceae, Cucurbitaceae, Apocynaceae, Euphorbiaceae and Poaceae.
- Unit IV : Economic Botany : Coir Industry – Coir Production Uses. Sugar industry , Extraction of juice, clarification, concentration and crystallization, Biodiesel – Cultivation of Jatropha extraction of oil and production of biodiesel, cobargas Biocontrol agents – Neem
- Unit V : Applied Botany : Mushroom cultivation – Oxster. Single Cell Protein. Biofertilizers – Nitrogen fixing symbiotic, Organic farming, Plant tissue culture, MS medium Applications.

Books for Reference :

Outlines of Botany – R.V. Narayanaswami & K.N. Rao

Text Book of Botany – Muneswaran.

Diseases of crop plants in India – G. Rengaswami second edition, Prentice Hall of India Private Limited. New Delhi

Botany for Degree Students – Algae B.R. Vashishta – S. Chand & Co

Botany for Degree Students – Fungi B.R. Vashishta – S. Chand & Co

Botany for Degree Students – Bryophyta B.R. Vashishta – S. Chand & Co

Botany for Degree Students – Pteridophyta P.C. Vashishta – S. Chand & Co

Text Book for Gymnosperms – G.L. Chopra – S. Nagin & Co.

Text Book of Systematic Botany – R.K. Gupta, ATMP RAM & Sons, Delhi

Economic Botany – B.P. Pandey, S. Chand & Co, 1980.

Elements of Biotechnology – P.K. Gupta, Rastogi & Company,

Allied Botany PAPER – II

Unit I : Anatomy : Meristem – Structure and classification. Brief account on Tissue Complex tissues – xylem and phloem, Internal structure of dicot stem (young), dicot root (young), monocot stem, Normal secondary thickening in dicot stem.

Unit II : Ecology – Adaptations in Hydrophytes, Xerophytes, Halophytes, Types of Forest in Tamil Nadu (occurrence, climatic conditions, nature of soil and plants present in the forest) Agroforestry. Afforestation and Reforestation, Soil erosion – types, methods to prevent soil erosion.

Unit III : Physiology – Absorption of water – definitions of diffusion, Osmosis, DPD, Imbibition, Active and Passive absorption of water. Ascent of Sap and Transpiration – Structure of Stoma, Mechanism (starch sugar hypothesis, potassium ion up take, hormonal level) and factors. Photosynthesis, light and dark reactions (Calvin cycle), factors. Phytohormones – Auxin, and Cytokinin.

Unit IV : Importance of Horticulture, Propagating methods of horticultural plants – cutting. Layering, grafting and budding. Cultivation of Papaya. Preservation of Fruits. Cultivation of Jasmine, concrete extraction, Indoor and terrace gardening, Lawn making.

Unit V : Scope of Pharmacognosy. Types – Ayurveda, Unani, Siddha. A brief account on the identifying features, medicinal properties and active principles of the following. Carminatives and Gastro intestinal Regulators – ginger, Antitussives – Vasaka, Antiseptic – Curcuma, Brain Tonic - Bramhi. Cultivation and marketing of commercial medicinal plants – Vinca, Aloe.

Books for Reference :

Text book of Botany – Muneswaran

Plant Anatomy – B.P. Pandey, S. Chand & Co, First edition.

Plant Ecology & Soil Science – Shukla & Chandel S. Chand & Co, First edition

Plant physiology – V. Verma, EMKAY publication, Delhi
Sixth revised edition

Text book of Horticulture - K. Manibhushan Rao - Macmillan India Ltd.

Introduction to Horticulture – N. Kumar (First Edition, Rajalakshmi Publication, 1996)

Book of Pharmocognosy – K.R. Arumugam & N. Muruges, Sathya Publishers –
1993.

Text book of Pharmacognosy – T.E. Wallis, fifth edition CBS publishers &
Distributors, Delhi.

Herbs cultivation and medicinal uses – H. Panda, NIIR Publication. Delhi.

Allied Botany Practical

I. Study of the following genera through slides and specimen

1. Chlamydomonas, Dictyota, Spirulina, Saccharomyces, Agaricus, Red rot of Sugarcane.
2. Funaria, Adiantum, Cycas
3. Simple and Complex tissues.
4. Hydrophyte, Xerophyte, Halophyte

II. Identification and technical description of the plants belonging to families Annonaceae, Cucurbitaceae, Apocynaceae, Euphorbiaceae and Poaceae.

III. Sectioning of the following materials

Adiantum rachis, Cycas leaf let

Young Dicot Stem, monocot stem,

Dicot stem with normal secondary thickening

IV Experiments to demonstrate

1. Potato Osmoscope
2. Ganong's potometer
3. Transpiration Pull
4. Evolution of oxygen during photosynthesis
5. Ganong's light screen experiment
6. Mohl's Experiment

V. Study of the following with the specimen or chart

1. Cutting
2. Simple Layering
3. Grafting – approach
4. Ginger, vasaka, curcuma, neem
5. Vinca, Aloe

**Allied Botany Practical
Allied Botany Paper I and II**

Time : 3 Hrs

Max. Marks : 40

1. Refer specimen A and B to the respective families giving reasons	2x2=4
2. Describe the specimen 'C' technically. Draw the floral diagrams	3
3. Comment 'D' with its medicinal value. (Specimen to be given from fifth unit of botany paper II)	2
4. Cut transverse section of E and F. Draw labeled sketches and identify giving reasons. Leave the preparation for valuation. [E is either <i>Adiantum</i> rachis, <i>Cycas</i> leaflet] [F is either Young Dicot stem, monocot stem, monocot root or dicot stem with normal secondary thickening]	2x7=14
5. Draw labeled sketches identify and giving reasons G, H, I, J, and K. [G from Algae or Fungi] [H from Pathology or Bryophyte] [I from Pteridophyte or Gymnosperm] [J from Horticulture of Tissues] [K from Xerophyte or Hydrophyte or Halophyte]	5x2=10
6. Comment on the setup L. Draw labeled sketch.	3
	36
Record	4
Total Marks	40