

BHARATHIAR UNIVERSITY, COIMBATORE: 641 046

ALLIED BOTANY

(For the candidates admitted from the academic year 2015-16 onwards)

PAPER – I

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 – Oyster. Single Cell Protein. 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 – Osmosis ,Absorption of water –Active and Passive absorption of water Transpiration –Photosynthesis, light and dark reactions (Calvin cycle), factors affecting Photosynthesis. 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 Pharmacognosy – 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 PRACTICALS

I. Study of the following genera through slides and specimen

1. Chlamydomonas, Dictyota, Spirulina, Saccharomyces, Agaricus, Red rot of Sugarcane.
2. Funaria, Lycopodium, 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

Lycopodium stem, 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
5. Vinca, Aloe

ALLIED BOTANY PRACTICLALS (Paper I & II)

Time: 3Hrs

Max.Marks:30

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| 1. Refer Specimen A to the respective families giving reasons | 1x2=2 Marks |
| 2. Describe the specimen B in technical terms. Draw floral diagrams | 1x3=3 Marks |
| 3. Comment on C with its medicinal value | 1x2=2 Marks |
| 4. Cut transverse section of D and E. Identify giving reasons.
Draw diagrams. | 2x3=6 Marks |
| 5. Identify f, G, H, I and J giving reasons. | 5x2=10 Marks |
| 6. Comment on the set up K. Draw sketches | 1x2=2 Marks |

25 Marks

Record 5 Marks

Total 30 Marks

ALLIED BOTNY PRACTICLALS (Paper I & II)

KEY

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| 1. A Taxonomy (Identification – 1, Reasons -1) | 1x2=2 Marks |
| 2. B – Taxonomy (Identification -1, Sketch & F, D – 1, Notes -1) | 1x3=3 Marks |
| 3. C – Medicinal Botany (Identification -1, Medicinal Value -1) | 1x2=2 Marks |
| 4. D –Pteridophytes / Gymnosperms
E – Anatomy(Identification & Sketch-1, Notes-1 Slide-1) | 2x2=4 Marks |
| 5. F – Alage
G – Fungi
H– Pteridophytes / Gymnosperms
I – Horticulture
J – Ecology (Identification & Sketch -1, Notes -1) | 5x2=10 Marks |
| K – Physiology (Identification & Sketch -1, Notes -1) | 1x2=2 Marks |

25 Marks

Record 5 Marks

Total 30 Marks
