

The Berar General Education Society's
Shri R.L.T. College of Science, Akola
Civil Lines, Akola, Maharashtra - 444001



Details of Book Published

Title of the Book : A Text Book of Botany for Fourth Semester of B.Sc.
Co-author : Dr. A. A. Sangole
Department : Botany
ISBN : 978-93-87278-04-2
Year of Publication : 2017-18
Publication / Publisher : DnyanPath Publication, Amravati



STRICTLY AS PER SYLLABUS OF SEMESTER PATTERN OF THE
SANT GADGE BABA AMRAVATI UNIVERSITY, AMRAVATI.

A TEXT BOOK OF

BOTANY

FOR FOURTH SEMESTER OF B.Sc.

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DnyanPath
Publication
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■ A TEXT BOOK OF BOTANY : SEMESTER - IV

ISBN 13 : 978-93-87278-04-2

Edition : First, January 2018



DnyanPath
Publication
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Published by the **DnyanPath Publication**

Mahatma Fule Sankul, Infront of Abhiyanta Bhavan,
Shegaon Naka, V.M.V. Road, Amravati - 444603 (Maharashtra)

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Price : ₹ 110/-

Printed at Shri Gurudeo Printers, Amravati.

Mahatma Fule Sankul, Shegaon Naka, V.M.V. Road, Amravati - 444603 (Maharashtra)

SYLLABUS

B.Sc. Part-I (Semester - IV)

Marks : 80

Total Lectures: 84

Chapter I

Cell Biology

- 1.1 Cell concept – Prokaryotic and Eukaryotic cell
- 1.2 Cell wall – Structure and Functions
- 1.3 Plasma membrane – Structure (models) and Functions
- 1.4 Nucleus – Ultra structure (nuclear membrane, nuclear pore complex and nucleolus) and functions
- 1.5 Chloroplast – Structure and Functions

Chapter II

Cell Biology Structure and functions of

- 2.1 Endoplasmic Reticulum
- 2.2 Golgi complex
- 2.3 Vacuole
- 2.4 Ribosome
- 2.5 Peroxisome
- 2.6 Mitochondria
- 2.7 Cell cycle: Mitosis and Meiosis

Chapter III

Genetics

- 3.1 Chromosome – Morphology, Types, Centromere & Telomere
- 3.2 Chromosomal aberrations –
 - 3.2.1 Structural aberrations: Deletion, Duplication, Inversion and Translocation
 - 3.2.2 Numerical aberrations: Euploidy and aneuploidy

Chapter IV

Genetics

- 4.1 Mendelism: Mendel's law of Dominance, Segregations and Independent assortment, Incomplete dominance
- 4.2 Interaction of genes – Complimentary, Supplementary and Epistasis
- 4.3 Problems based on Mendelism and Interaction of Genes

Chapter V

Genetics

- 5.1 Linkage – Concept, Types and theories
- 5.2 Crossing over: Concept, Types and theories
- 5.3 Gene mutations – Spontaneous and Induced
- 5.4 Extra-nuclear Genome – Mitochondrial DNA and Chloroplast DNA

Chapter VI

Biochemistry

- 6.1 Nomenclature of Enzymes
- 6.2 Characteristics of Enzymes
- 6.3 Concept of holoenzymes, coenzymes and cofactors
- 6.4 Theories for Mechanism of action of Enzymes
- 6.5 Structure and functions Carbohydrates, Monosaccharide's (Glucose), Disaccharides (Galactose) and Polysaccharides (Starch)