



YASHWANTRAO CHAVAN COLLEGE OF SCIENCE, KARAD

CRITERION-III

RESEARCH, INNOVATIONS AND EXTENSION

3.2 RESEARCH PUBLICATIONS AND AWARDS

3.2.2 Number of books and chapters in edited volumes/books published and papers published in national/ international conference proceedings for year 2018-2023

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Book/Book Chapters/Proceeding Publications in 2022-2023

Sl. No.	Name of the teacher	Title of the book/chapters published	National / International	Calendar Year of publication	ISBN number	Name of the publisher
1	Dr. Potdar G.G.	Mycology, phytomycology and cultivation	National	2023	978-93-5451-964-2	Nirali Publications
2	Dr. Potdar G.G.	Microbes, algae, biofertilizer & cell biology and analytical techniques	National	2023	978-93-5451-839-3	Nirali Publications
3	Mr. Mulla A.A.	Introduction to microprocessor 8085	National	2023	611913636-0	Nirali Publications
4	Mr. Mulla A.A.	Linear and digital integrated circuit	National	2023	936109343-6	Nirali Publications
5	Mr. Mulla A.A.	Analog Electronic Circuit	National	2023	978-93-6109-931-1	Nirali Publications
6	Mr. Mulla A.A.	Network analysis and analog electronics	National	2023	811911752-2	Nirali Publications
7	Mr. Mulla A.A.	Network analysis and analog electronics	National	2023	811911752-3	Nirali Publications
8	Mr. Mulla A.A.	8051 Microcontroller and embedded system	National	2023	938982538-5	Nirali Publications

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9	Dr. Patil A.M.	A text book on Molecular biology	National	2023	978-93- 9337- 35-1	International Journal of Microbial sciences
10	Dr. Patil A.M.	A text book on Biochemistry and Metabolism	National	2023	978-93- 9337- 29-0	International Journal of Microbial sciences
11	Dr. Patil A.M.	A text book on Immunology	National	2023	978-93- 9337- 26-9	International Journal of Microbial sciences
12	Dr. Patil A.M.	Biology and diversity of pteridophytes, Gymnosperm and Paleobotany	National	2023	978--81- 966170- 9-7	My Rays Publication Center (MRPC)
13	Dr. Patil A.M.	Angiosperm systematics	National	2023	978--81- 966170- 2-8	My Rays Publication Center (MRPC)
14	Dr. Potdar G.G.	Plant systematics and anatomy & Genetics and molecular biology	National	2023	978-81- 19117- 54-3	Nirali Publications
15	Dr. Patil A.M.	Biology and diversity of algae, fungi and bryophytes	National	2023	978--81- 966170- 7-3	My Rays Publication Center (MRPC)
16	Dr. Patil A.M.	Cell and Molecular Biology	National	2023	978-81- 966170- 1-1	My Rays Publication Center (MRPC)
17	Dr. Potdar G.G.	Practical Botany	National	2023	978-81- 19116- 68-3	Nirali Publications
18	Dr. Otari S.V.	Advances in Eco- Friendly and Sustainable Tech for the Treatment of Tex Wastewater	International	2023	978-0- 323- 91235-8	Elsevier
19	Dr. Otari S.V.	Microbial Bioprocessing of Agri-food Wastes	International	2023	9781- 0031- 289-84	CRC Press
20	Dr. Kirtane S. A.	Practical Handbook of Botany	National	2023	978-91- 19939- 51-0	Success Publications

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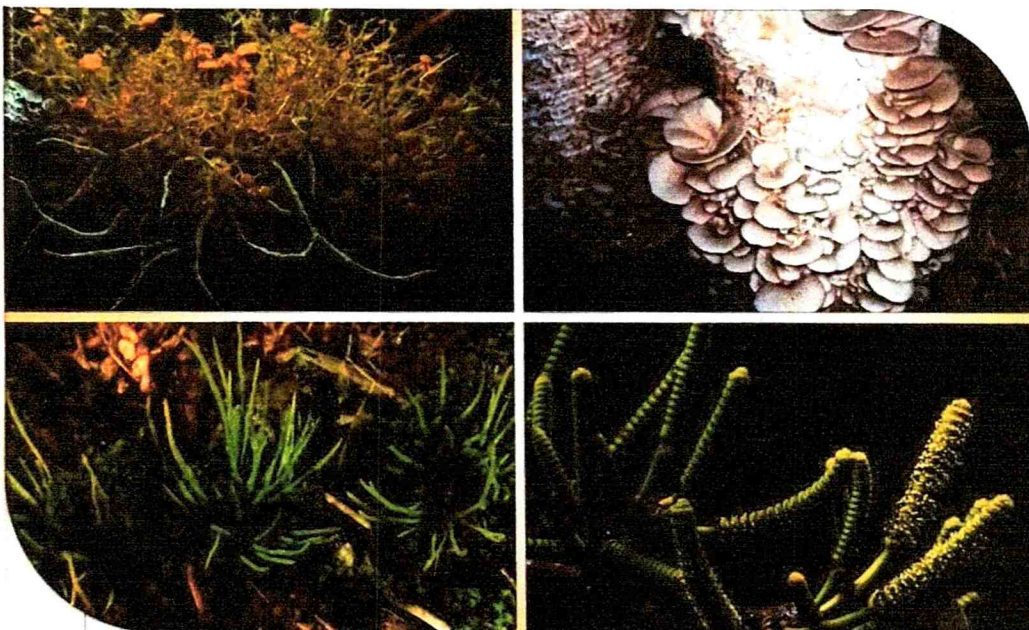
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(DSC-13 B : BOTANY : PAPER-III)

&

**ARCHEGONIAE (BRYOPHYTES,
PTERIDOPHYTES AND GYMNOSPERMS)**

(DSC-14 B : BOTANY : PAPER-IV)



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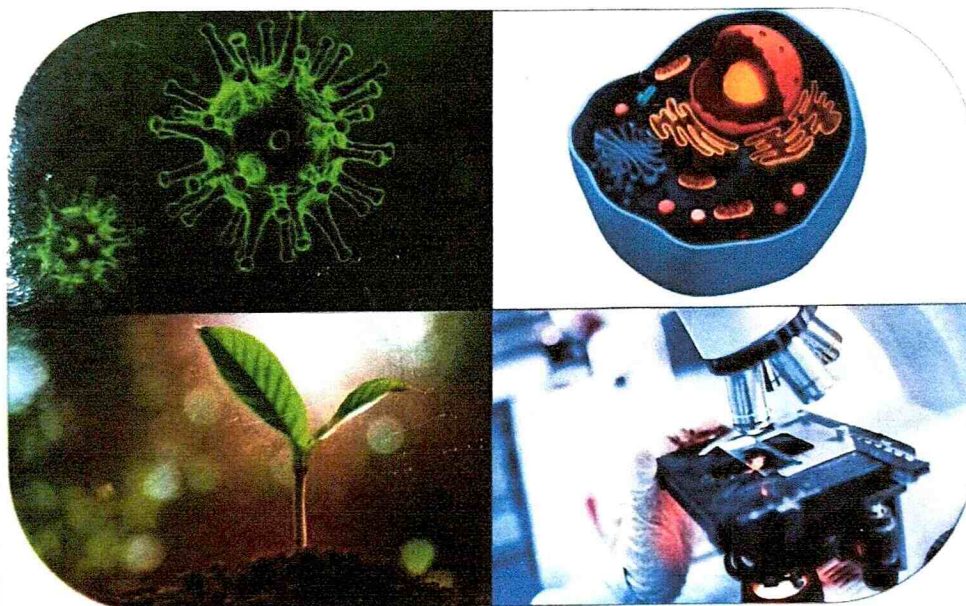
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&
CELL BIOLOGY AND ANALYTICAL TECHNIQUES
(DSC-14 A : BOTANY : PAPER-II)



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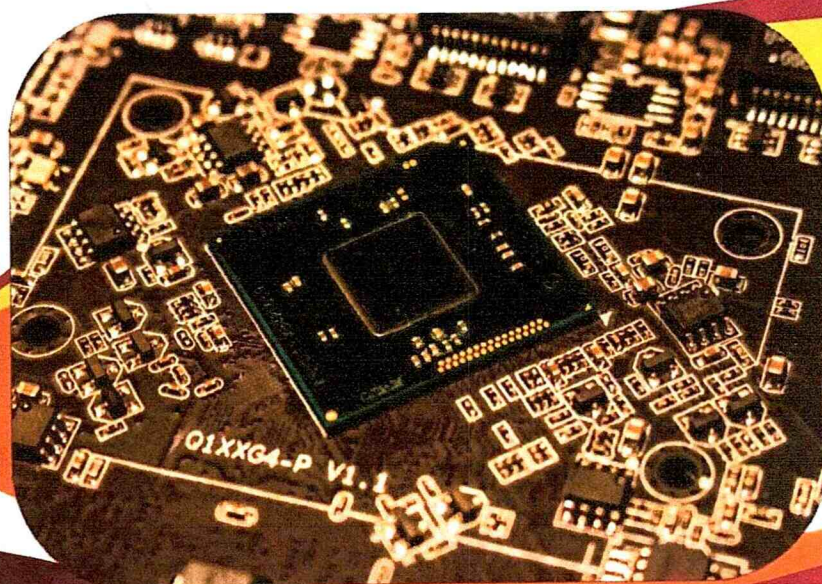
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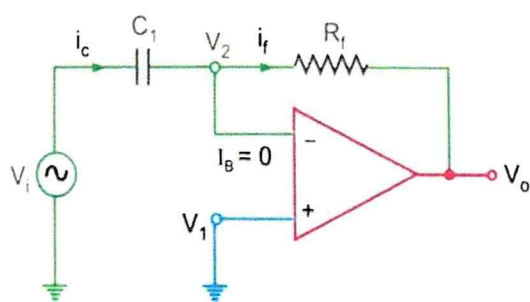
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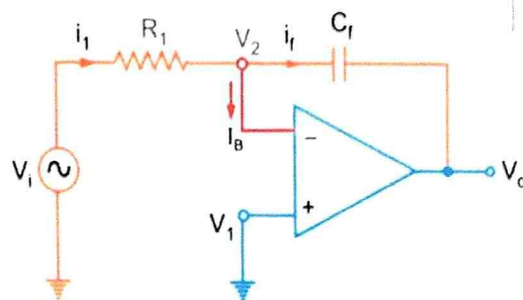
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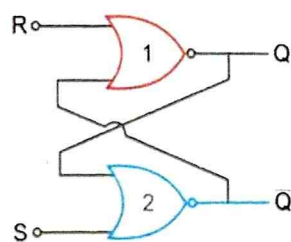
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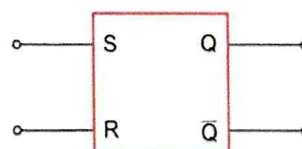
Basic differentiator



Basic Integrator



(a) Logic diagram



(b) Symbol

RS flip-flop using NOR gates

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(DSC-B10 : Paper - IV)

FOR

B.Sc. Part - I : Semester - II

*As Per Choice Based Credit System (CBCS) Syllabus with
Multiple Entry and Multiple Entry Options
under NEP-2020 w.e.f. June 2022*

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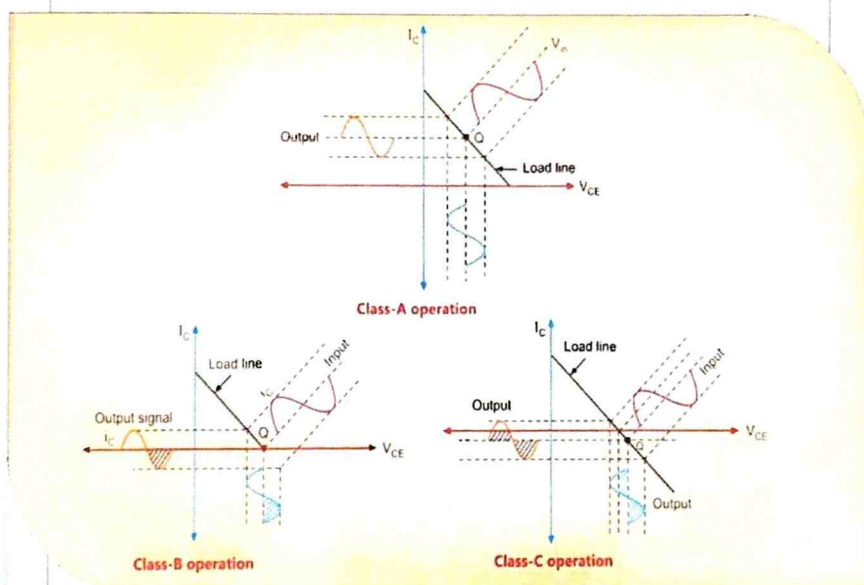
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- (c)
- (d)
- (e)
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(ELECTRONICS : DSC-B9 : PAPER - III)



Dr. K. D. ATAR
A. A. MULLA

Prof. (Dr.) S. R. KUMBHAR
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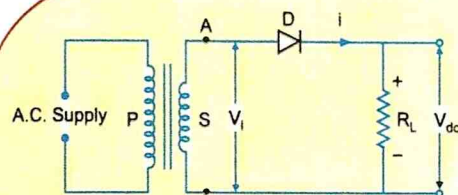
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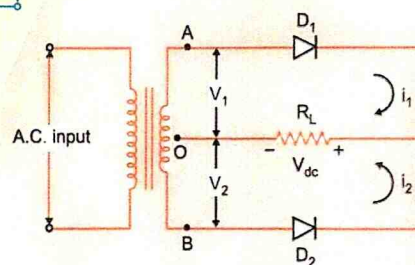
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ELECTRONICS (DSC-9A) : PAPER-I



Half-wave rectifier



Full-wave rectifier

Dr. K. D. ATAR

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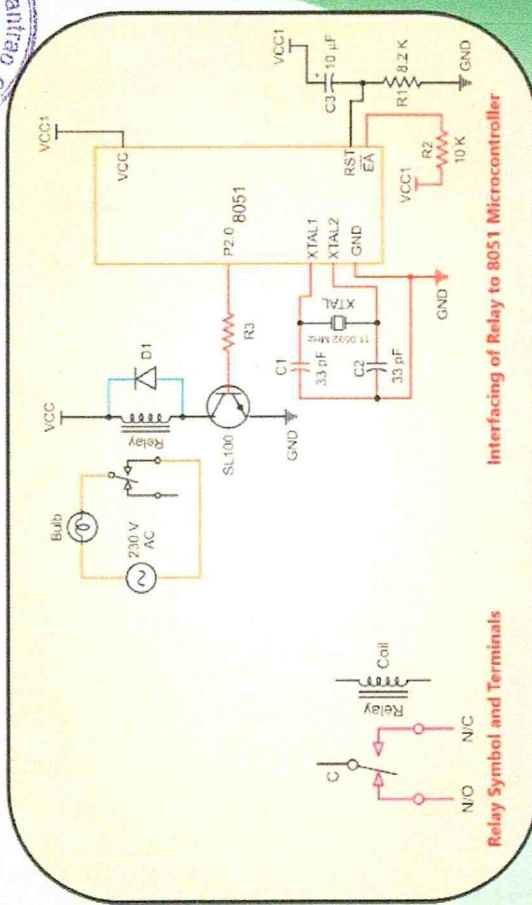
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8051 MICROCONTROLLER AND EMBEDDED SYSTEM

ELECTRONICS (DSC-10D) : PAPER-VIII

A. A. MULLA
Dr. K. D. ATAR
Z. A. MULLA

Dr. P. U. LANDE
Dr. N. S. JOSHI
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Interfacing of Relay to 8051 Microcontroller

Relay Symbol and Terminals

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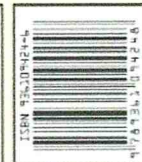


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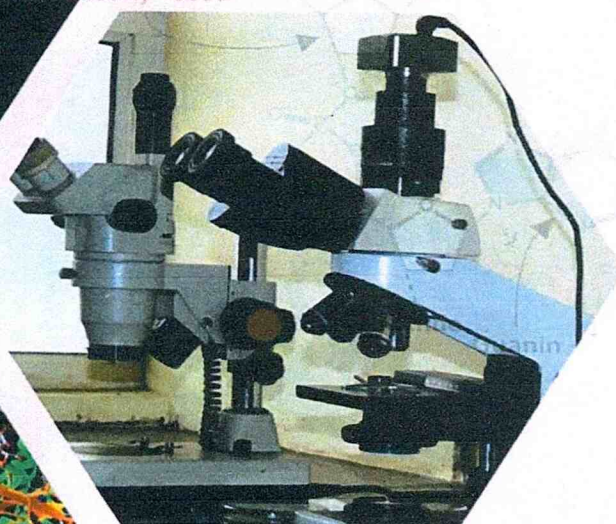
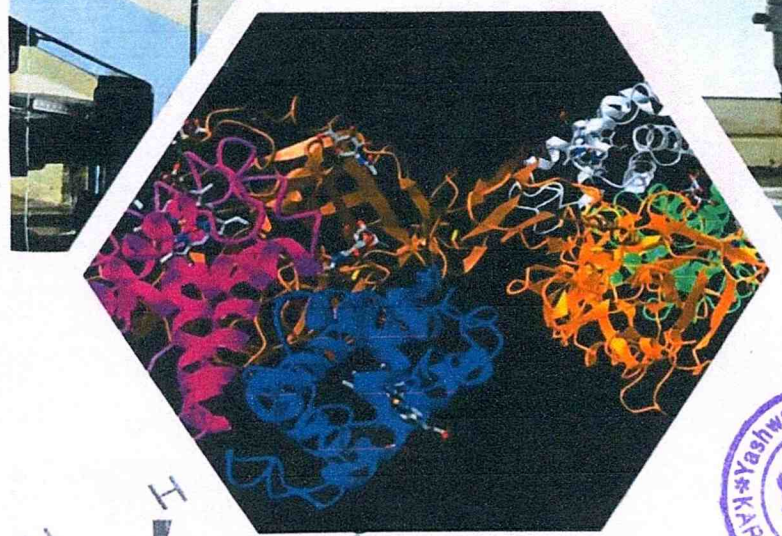
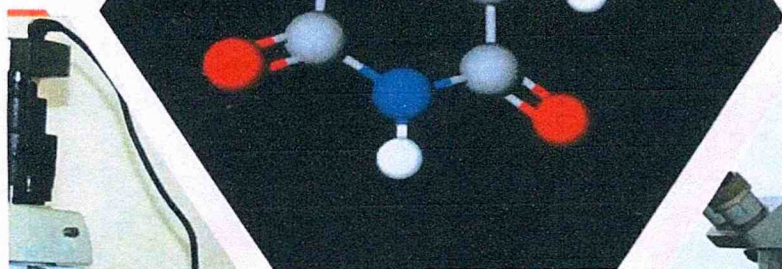
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Dear students, greetings from the International Journal of Microbial Science! The team is happy to announce a text book on 'Molecular Biology' to students studying in all Universities in higher education and those who struggle to collect literature. The team expects that students give their valuable time for innovations, research projects, development of entrepreneurship skills in order to solve the problems of the society. This is possible only if the students get ready-made coursework reading material so that they can devote more time and energy to innovations, research projects, entrepreneurship skills. The textbook on 'Molecular Biology' has been launched with this viewpoint in mind. The team assures that the book will help the students in studying Molecular Biology and wish them all the best in all their future endeavors.



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1	Credit I 1. Genomics a) Gene sequencing, conserved genes, finding base sequences which form genes b) Many proteins from one gene, alternative gene expression: DNA imprinting and Epigenetics. c) Genomic variation -SNPs, SNPS and diseases, SNPS detection and medical therapies. Eukaryotic and prokaryotic SNPs d) Role of genomic variation in aging, Recognition of trades offs associated with genomic variation.	Ganesh Pawar Ganesh Pawar Netravati Kattimath
2	Credit II 2. Genetically modified plants and animals a) Genetically modified organisms-social and ethical issues b) Gene augmentation and gene therapy c) Applications in medicine – prevention, early detection and cure of diseases d) Applications of transgenic plants and animals - advantages and disadvantages	Vrushali Uddavrao Hingane Dr. Sudhakar Gutte

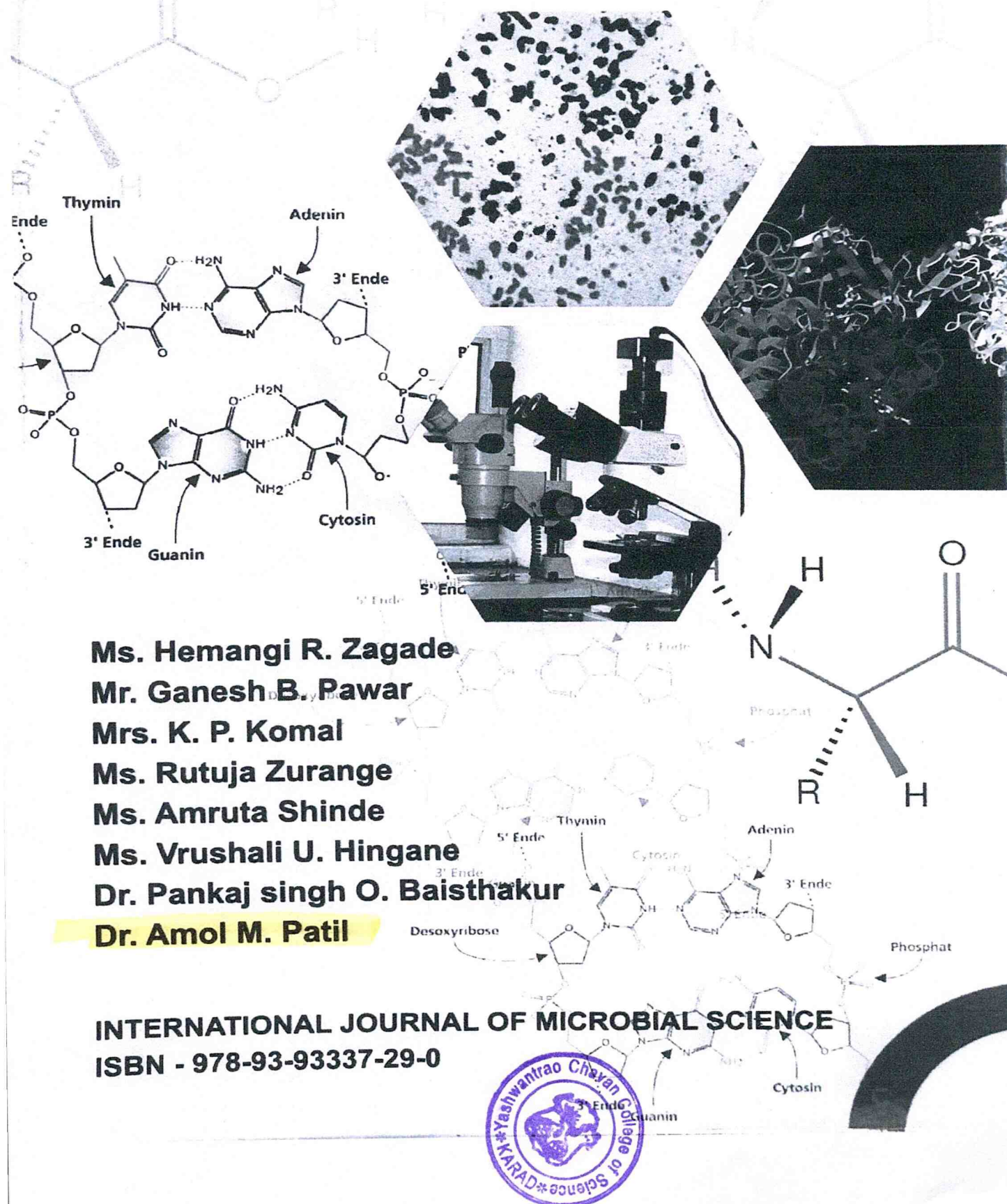


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4	Credit IV 4. Proteomics a) Basic concept of proteomics Expression, analysis and characterization of Protein. b) Analysis of protein structure c) Protein interaction. d) Basic concept of Metabolomics with examples and global biochemical networks	Dr. Sonali Kadam
5	Question Bank	Dr. Amol Mohan Patil



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A TEXT BOOK ON BIOCHEMISTRY AND METABOLISM



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2	Credit II Biochemistry and Molecular Biology Techniques: 1. Chromatography: Principles and applications of gel filtration, Ion exchange, affinity chromatography 2. Electrophoresis: Agarose, Native PAGE, SDS PAGE 3. Polymerase chain reaction: Principle, variations of PCR (Hot start, Nested, Reverse transcription, real time PCR) and its applications. 4. Sequencing methods: a) RNA-sequencing methods and applications, b) DNA sequencing: Classical and next generation sequencing methods (Pyro-sequencing, Ion torrent, Nano-pore sequencing).	Hemangi Rajendra Zagade
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3	<p>Credit III Developmental Biology:</p> <ol style="list-style-type: none"> 1. Introduction to developmental biology. Different model systems used to study developmental biology 2. Conserved nature of development, Concepts of commitment, determination and differentiation, 3. Morphogen gradients in developmental regulation, Hox code, MPF 4. Gastrulation and cellular movements involved in it, Organizer and its importance giving examples of invertebrates (<i>Drosophilla</i>) and vertebrate (<i>Xenopus</i>) model systems, pattern formation in body axis, antero-posterior and dorso-ventral polarity. 5. Morphogenesis and organogenesis in plants: Organization of shoot and root apical meristem; shoot and root development; transition to flowering, floral meristems and floral development in <i>Arabidopsis</i>. 	Hemangi Rajendra Zagade
4	<p>Credit IV: Cell biology:</p> <ol style="list-style-type: none"> 1. Structural organization and function of Endoplasmic Reticulum, Golgi apparatus, Nucleus, Mitochondrion, chloroplast, Lysosomes, peroxisomes; Cytoskeleton and function of Molecular motors. 2. Protein trafficking among various cellular compartments (by secretory and cytosolic pathway: targeting to secretory vesicles, cell membrane, lysosomes, nucleus, mitochondria and peroxisomes) 3. Events in cell cycle, Regulation of cell cycle. Apoptosis 	Hemangi Rajendra Zagade



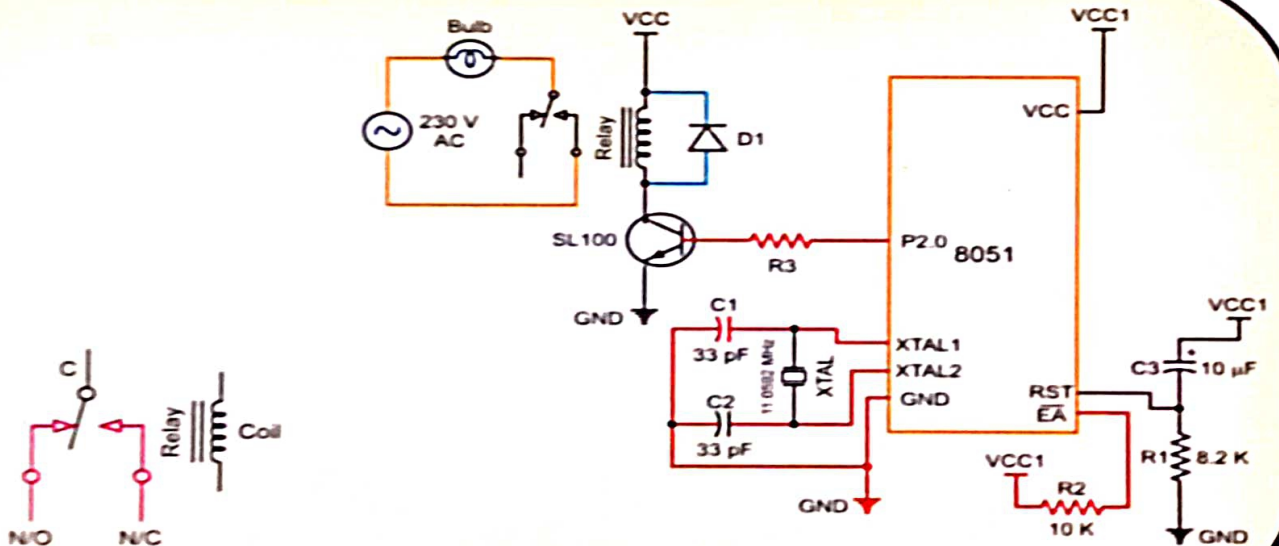
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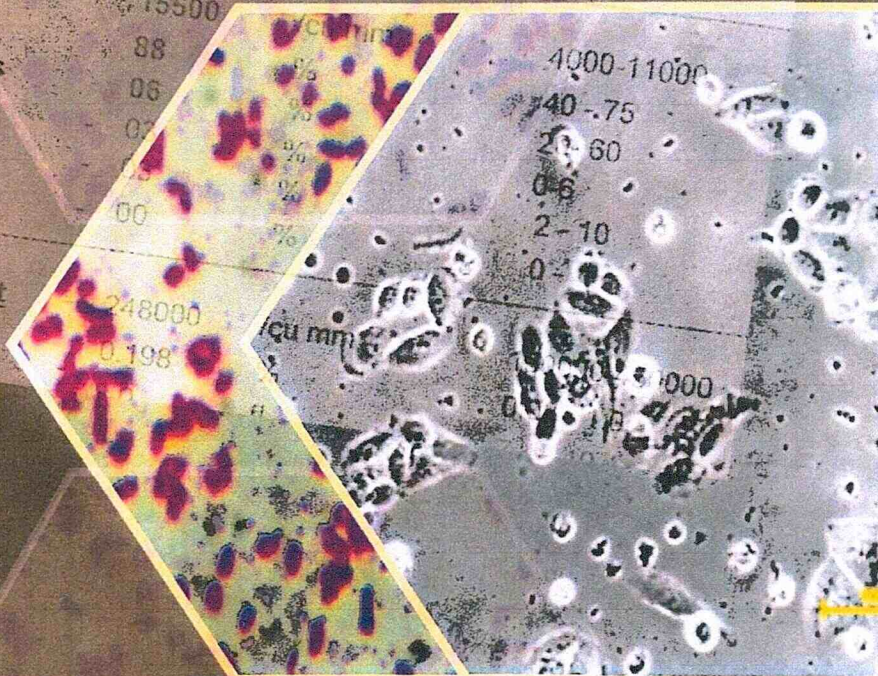
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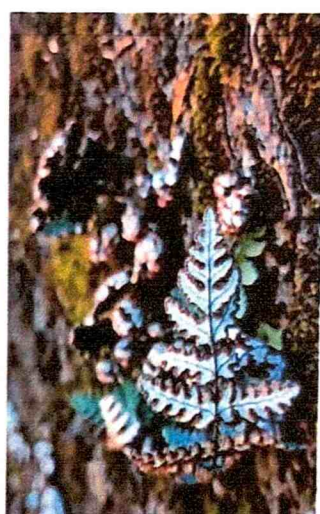
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BIOLOGY AND DIVERSITY OF PTERIDOPHYTES, GYMNOSPERMS AND PALAEOBOTANY

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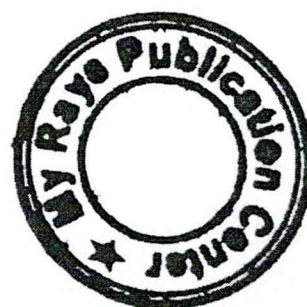
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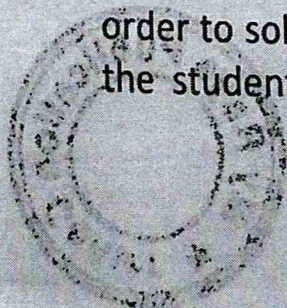
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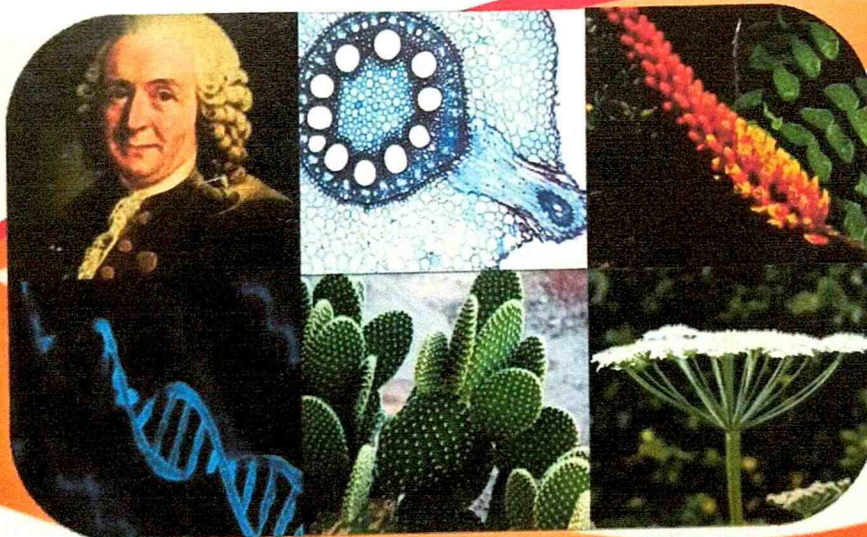
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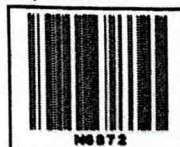
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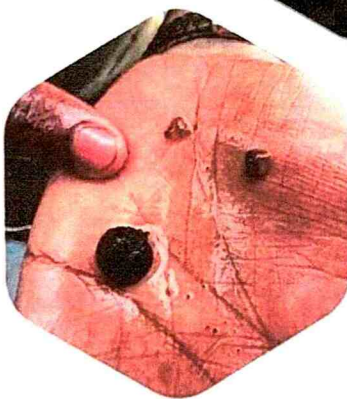
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Dear students, greetings from the International Journal of Microbial Science. The team is happy to announce a book on 'Biology and Diversity of algae, fungi and bryophytes' to students studying in all Indian Universities. In higher education, students struggle to collect literature. The team expects that students give their valuable time for innovations, research projects, and development of entrepreneurship skills in order to solve the problems of the society. This is possible only if the students get ready-made coursework reading material so that they can devote more time and energy to innovations, research projects, entrepreneurship skills. The presented book on has been launched with this viewpoint. The team assures that the book will help the students in studying and wish them all the best in all their future endeavors.



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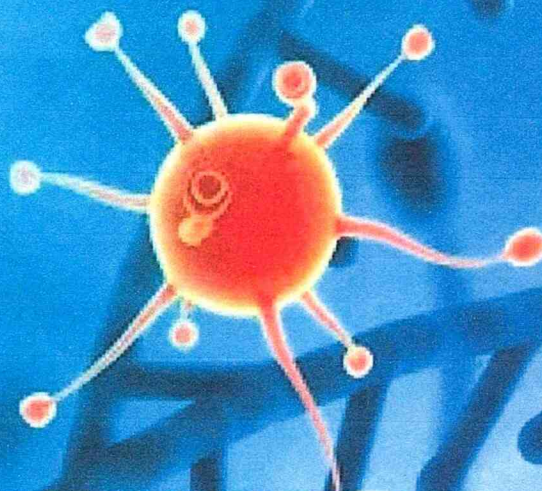
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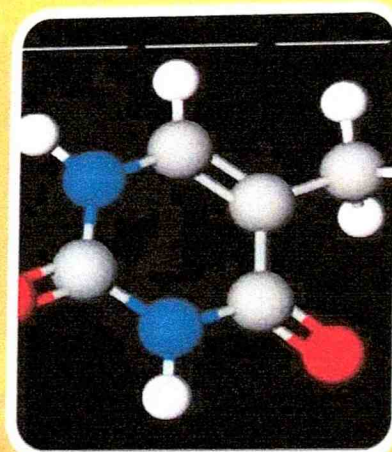
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CELL AND MOLECULAR BIOLOGY



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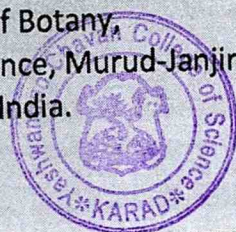
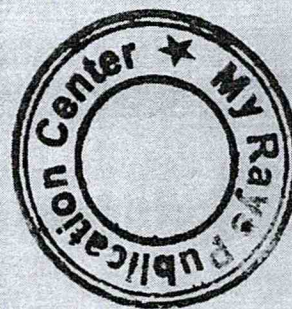
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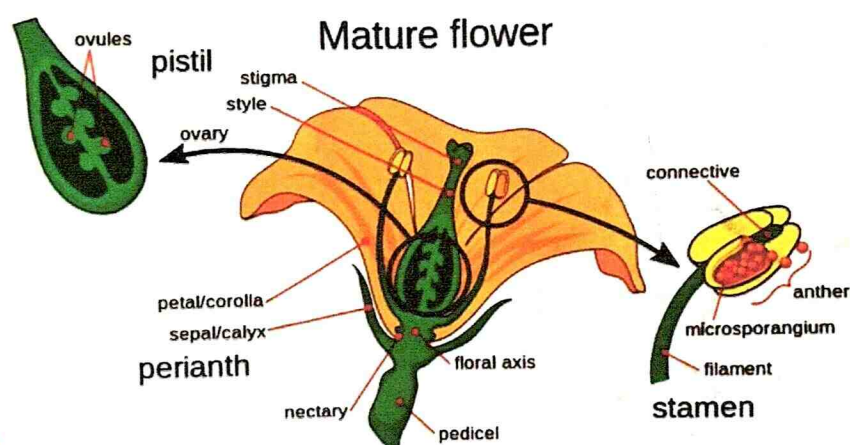
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PRACTICAL BOTANY

BASED ON PAPER - V, VI, VII, VIII

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ADVANCEMENT OF KNOWLEDGE



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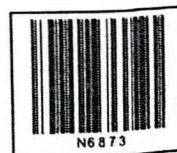
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Metal-organic framework and its derivative nanoparticles for effective textile wastewater treatment

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1. Introduction

Textile industry is considered as the oldest and largest industry throughout the globe contributing more than 2% in Indian economy which has provided largest employment after the Indian industrial revolution. The textile industry involves the use of the several different kinds of fibers, chemicals, and dyes. About more than 300 million ton of dyes and chemicals are processed throughout the globe. Dyes possess diverse chemical chromophoric groups, like azo, anthraquinone, triarylmethane, and phthalocyanine. The dyeing of fabrics involves the use of large amount of water during various steps where the chemical contaminated or polluted water is released in the environment after the preliminary treatment procedure. The detrimental impact of this colored wastewater has been proved on the ecosystem as the waste water is directly released in the fresh water which has direct impact on the aquatic and nonaquatic lives. Though the serious steps have been taken in effective treatment of the textile waste water, the toxicity assessments along with chemical parameters of the treated water are essential before releasing into the ecosystem.

Several biological, physical, and chemical methods have demonstrated in textile waste water treatment (Fig. 5.1) (Kiran et al., 2017). The physical method involves the use various forces like van der Waal force, electrical, gravity, etc. The physical methods consist of adsorption, flocculation, coagulation, and filtration processes where one or two processes are used in combination in the textile waste water treatment. Adsorption has been one the most effective physical method commonly applied in industrial waste water treatment due to the high adsorption capacity of adsorbent. Various strong adsorbent has been utilized for the discoloration of the textile waste water having potential ability to reuse for multiple cycles (Holkar et al., 2016). Investigators have



7 Valorization of Lignocellulosic Biomass into Polyhydroxyalkanoates Using Microbial Fermentation

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Practical - I & II

(Based on Paper - V, VI, VII & VIII)

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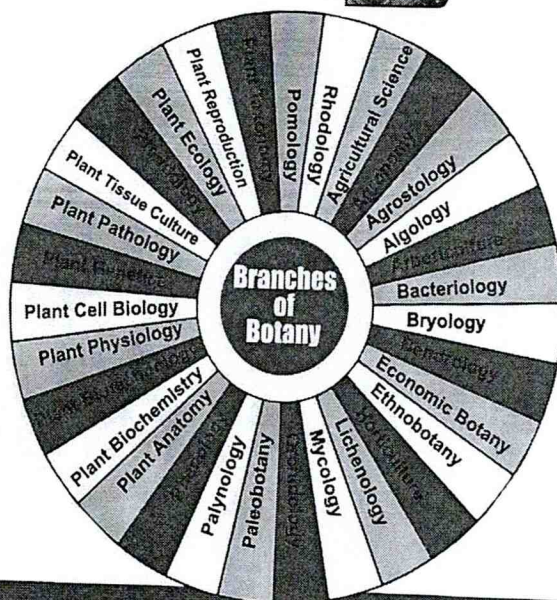
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