

Rayat Shikshan Sanstha's
SADGURU GADAGE MAHARAJ COLLEGE, KARAD.

(An Autonomous College - Affiliated to Shivaji University, Kolhapur)

Accredited By NAAC with A⁺ Grade (CGPA 3.63)

National Education Policy (NEP-2020)

Syllabus for

B.Sc. Part -I

BOTANY

Syllabus to be implemented from AUGUST 2022 onwards of

Academic Year 2022-23

RayatShikshanSanstha's
SADGURU GADAGE MAHARAJ COLLEGE, KARAD.

(An Autonomous College - Affiliated to Shivaji University, Kolhapur)

DEPARTMENT OF BOTANY

B.Sc. Part- I (Botany)

Course Structure

NEP-2020

w.e.f. August 2022

Note:

The following in a nutshell gives the scope and extent of each course offered. Each core theory course has two levels of teaching: Lectures and Practical's.

B.Sc. Part- I (Botany): NEP-2020				
Semester –I & II				
Course Type	Sr. No.	Course Code	Course Title	Credits
CGPA	1	DSC A13 BBT 22-101	Biodiversity of Microbes, Algae and Fungi	02
	2	DSC A14 BBT 22-102	Plant Ecology	02
	3	DSC B13 BBT 22-201	Biodiversity of Archegoniate – Bryophytes, Pteridophytes, Gymnosperms	02
	4	DSC B14 BBT 22-202	Plant Taxonomy	02
	5	DSC AP	Lab- Botany	02
	6	DSC BP	Lab- Botany	02
	7	AECC-1	English for Communication	04
	8	AECC-2	English for Communication	04
	9	SEC-1	Democracy, Elections & Good Governance	02
	10	SEC-2	Constitution of India & Local Self Government	02
			Total	24
			Grand Total	24

Short term Course- Bioprospecting of value-added products

**Choice Based Credited System with Multiple Entry and Multiple Exit to be implemented
from Academic Year: 2022-23
First Year Bachelor of Science (Level-5) Programme Structure (NEP-2020 PATTERN)**

Program				Teaching Scheme						Examination Scheme								
B.Sc.-I				Theory			Practical			Theory				Practical			(T+P)	
Courses	Semester	Sr. No.	Course Code	No. of Credits	No. of Lectures.	Hours	No. of Credits	No. of Lectures	Hours	Hours	Max. Marks	Total Marks	Min. Marks	Hours	Max. Marks	Min. Marks	Total Marks	
CGPA	Semester-I	1	DSC A	2	05	04	02	04	3.2	04	50	100	40=32+8	Annual Practical Examination				450
		2	DSC A	2							50							
		3	DSC A	2	05	04	02	04	3.2	04	50	100	40=32+8					
		4	DSC A	2							50							
		5	DSC A	2	05	04	02	04	3.2	04	50	100	40=32+8					
		6	DSC A	2							50							
		7	DSC A	2	05	04	02	04	3.2	04	50	100	40=32+8					
		8	DSC A	2							50							
		9	AECC-A	4	04	3.2	-	-	-	02	50	50	20=16+4					
		10	SEC-I	2	-	-	-	04	04	-	-	-	-					
		Credit				22	-	-	08	06	06	-	-	-	-			
Total Credit(A)				-	-	-	30	-	-	-	-	-	-					
CGPA	Semester-II	1	DSC B	2	05	04	02	04	3.2	04	50	100	40=32+8	06	50	20	650	
		2	DSC B	2							50							
		3	DSC B	2	05	04	02	04	3.2	04	50	100	40=32+8	06	50	20		
		4	DSC B	2							50							
		5	DSC B	2	05	04	02	04	3.2	04	50	100	40=32+8	06	50	20		
		6	DSC B	2							50							
		7	DSC B	2	05	04	02	04	3.2	04	50	100	40=32+8	06	50	20		
		8	DSC B	2							50							
		9	AECC-B	4	04	3.2	-	-	-	02	50	50	20=16+4	-	-	-		1100
		10	SEC-II	2	-	-	-	06	06									
		Credit				22	-	-	08	-	-	Total Credit Points is						
Total Credit (B)				-	-	-	30	-	-	Total Contact Hours For B.Sc.-I is								32
Total Credit (A+B)				-	--	-	60	-	-	Total Marks for B.Sc. -I is								1100

SCIENCE STRUCTURE

Levels	Sem.	DSC	DSE/OEC/GE C/IDS	AECC Languages and Env. Sci.	SEC (Multidisciplinary)	Total Credits
	I	4X(4+2)=24 (DSC)	-	1X4=4 (ENG)	SEC-I (1) VBC-I (1)	30
Level-5	II	4X(4+2)=24 (DSC)	-	1X4=4 (ENG)	SEC-II (2)	30
	III	4X(4+2)=24 (DSC)	-	-	SEC-III (2)	26
Level-6	IV	4X(4X2)=24 (DSC)	-	1X4=4 (EVS)	SEC-IV (2)	30
	V	-	4X(2+2)=16 (DSE)	1X4=4 (ENG)	SEC-V (2)	22
Level-7	VI	-	4X(2+2)=16 (DSE)	1X4=4 (ENG)	SEC-VI (2)	22
	VII	-	4X(4+2)=24 (DSE)	-	SEC-VII (2)	26
Level-8	VIII	-	4X(4+2)=24 (DSE)	-	SEC-VIII (2)	26
Total Credits						212

Rayat Shikshan Sanstha's
Sadguru Gadage Maharaj College, Karad
Department of Botany
B.Sc.: 2022-23
Programme Outcome (POs)

Skills that Botany students obtain by the time, they have finished their undergraduate programme.

- PO I: Understanding of the fundamentals of Biology & key principles of Botany, Biochemistry, Biotechnology, Environmental Biology, Ecology etc.
- PO II: Awareness of the major issue at the forefront of the discipline.
- PO III: Good skills such as plant tissue culture, cultivation of plants, Anatomy of plants, preparation of reagents & chemicals for the experiments.
- PO IV: Ability to design experiment & work effectively in laboratory.
- PO V: Ability to use computer as an information tool. Handling number of instruments safely.
- PO VI: Ability to develop their own communication skills, documents & effective presentation.
- PO VII: Awareness of the ethical issues in the life science.

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Sadguru Gadage Maharaj College, Karad
Department of Botany
B.Sc.: 2022-23

Programme Specific Outcomes (PSOs)

1. Application of knowledge and technique of various fields of Botany.
Students will show that they have learned laboratory skills, enabling them to take
2. measurements in a Botany laboratory and analyze the measurements to draw valid conclusions.
3. Scale up the biological resources by designing optimization, preparation and analysis of products required for Society.
4. Tabulation and interpretation of biological data using biostatistics.
Students will be capable of oral and written scientific communication, and will
5. prove that they can think critically and work independently.

Rayat Shikshan Sanstha's
Sadguru Gadage Maharaj College, Karad
Department of Botany
B.Sc.: 2022-23

Course Outcomes (COs)

1. Students will demonstrate an understanding of core knowledge in Botany' including the major premises of Plant Biodiversity, Ecology, Taxonomy etc.
2. Students will demonstrate Botany-related practical's as well as written and oral communication skills in communicating Botany-related topics.
3. Students will understand Modern Botany practices and approaches with applied technology in Pharmaceutical, Environment & Agricultural areas.
4. Students will become familiar with public policy, biosafety & Intellectual property Rights, issues related to Botany & Plant biotechnology.
5. Students will gain experiences with cultivation, conservation, Gene mapping, molecular techniques, seed bank.
6. Students will demonstrate an understanding of the impact of Botany and science on society.
7. Students will gain skills in Research.

DEPARTMENT OF BOTANY

Syllabus for B.Sc.-I (BOTANY)

B. Sc. Part-I, Semester-I, Paper- I

DSC A13: BBT 22 -101: Biodiversity of Microbes, Algae and Fungi (Credits: 02)

w.e.f. June-2022

Learning Objectives: Students will be able to-

1. To impart the basic knowledge of different plant groups.
2. To impart the knowledge of biodiversity of lower plant groups.

UnitI	:	Introduction to Plant Kingdom and Bacteria	(09)
		Systems of classification (Two, Three and Five kingdom systems), General outline of plant kingdom. Bacteria: Discovery, General characters, Cell structure, Types, Modes of reproduction – Vegetative, Asexual, Sexual – Conjugation. Economic Importance.	
UnitII	:	Algae	(09)
		General Characters of Algae, Economic importance of Algae, Morphology and life cycles (excluding developmental stages) of <i>Nostoc</i> and <i>Spirogyra</i>	
UnitIII	:	Fungi	(09)
		General Characters, Economic importance, Morphology and life cycle (excluding developmental stages) of <i>Mucor</i> and <i>Penicillium</i>	
UnitIV	:	Lichens	(09)
		General characters, Types of Lichens on the basis of thallus morphology, Methods of reproduction, Economic importance of lichens	
Referencebooks-			
1.		Ainsworth GG and AS Sussman, The Fungi Vols. I, II, III, IV- A and IV-B (Unit III)	
2.		Alexopoulos CJ (1960) Introductory Mycology (Unit III)	
3.		Awasthi DD (2000) A handbook of Lichens (Unit IV)	
4.		Dube HC (1990) An Introduction to Fungi, Vikas Publishing House Pvt. Ltd., Delhi (Unit III, IV)	
5.		Kumar HD (1990) Introductory Phycology. East Western Press. New Delhi (Unit II)	
6.		Sharma OP (1992) Textbook of Thallophytes. McGraw Hill Pub. Co. (Unit II)	
7.		Sharma OO (1989)Textbook of Fungi (Unit III)	
8.		Gangulee HS and Kar AK (1992) College Botany Vol. II, New Central Book Agency (P) Ltd. (Unit I, III, IV)	
9.		Sharma PD (1991) The Fungi. Rastogi and Company, Meerut. (Unit III)	
10.		Vashistha BR and Sinha AK, Botany for degree students – fungi (Unit III)	
11.		Vashishtha BR (1976) Botany for Degree Students Part I Algae. S. Chand and Company, New Delhi. (Unit II)	
12.		Smith GM (1971) Cryptogamic Botany. Vol. I Algae and Fungi. Tata McGraw Hill Publishing Co. New Delhi. (Unit II)	

Learning Outcomes:		
	After completion of the Paper, Student is able to:	
	<ol style="list-style-type: none"> 1. The students should be able to explain features and uses of lower cryptogams. 2. The students should be able to define concepts regarding lower cryptogams. 3. The students should be able to write answers and brief notes about plant diversity of lower cryptogams. 4. The students should be able to seek career opportunities in academics, research and Entrepreneurship with respect to lower cryptogams. 	

DEPARTMENT OF BOTANY
Syllabus for B.Sc.-I (BOTANY)
B. Sc. Part-I, Semester-I, Paper- II
DSC A14: BBT 22-102: Plant Ecology (Credits: 02)

Learning Objectives: Students will be able to-

1. To make students aware about the concepts of ecology & advanced environmental science.
2. To understand the inter-relationships between the animate and inanimate world.
3. To make the students aware about phytogeographical zones of India, biodiversity and sustainable development
4. To understand the concept of Bioremediation and its applications.

Unit I	:	Ecological Factors and Adaptations	(09)
		<p>Introduction, Definition and Scope of Ecology;</p> <p>Ecological Factors: Edaphic factors: Soil- Origin and formation, Composition, soil profile.</p> <p>Climatic factors: Light and Temperature as ecological factors;</p> <p>Ecological Adaptations: Ecological adaptations in Hydrophytes, Xerophytes, Epiphytes and parasites.</p>	
Unit II	:	Plant Communities and Succession	(09)
		<p>Plant Communities: introduction, general characters, forms and structure, Raunkiaers life forms</p> <p>Plant Succession: characters, process and types – Hydrosere, Xerosere.</p>	
Unit III	:	Ecological pyramids and phytogeography	(09)
		<p>Ecological pyramids- Number, Biomass and Energy with suitable example;</p> <p>Biogeochemical cycles- Introduction, Phosphorus and Nitrogen cycle;</p> <p>Phytogeographical regions of India.</p>	
Unit IV	:	Phytoremediation	(09)
		<p>Concept and scope; Types of remediation (bioaccumulation, rhizofiltration, rhizoextraction);</p> <p>Phytoremediation of dyes, chemicals and heavy metals.</p>	
Reference books-			

1.	Ambasht RS (1990) Plant Ecology (Unit I)	
2.	Krens CJ, Harper and Row (1978) Ecology: The experimental analysis of distribution and abundance. (Unit I)	
3.	Lieth HFW (1978) Patterns of primary production in the biosphere. (Unit I)	
4.	Agarwal SK (1992) Fundamentals of Ecology. (Unit I, III)	
5.	Bradbury IK (1990) The Biosphere (Unit I)	
6.	Grisms JP et al., (1988) Comparative Plant Ecology. (Unit II)	
7.	Kershaw KS (1964) Quantitative and dynamic ecology. (Unit II)	
8.	Kormondy EJ (1966) Concept of ecology. (Unit II)	
9.	Krebs CJ (1978) Ecology. (Unit II)	
10.	P. K. Gupta (2010) Elements of Biotechnology (Unit IV)	
11.	Misra KC (1989) Manual of plant Ecology. (Unit I, III)	
12.	Odum EP (1996) Fundamentals of Ecology. 3 rd Ed. (Unit I, III)	
13.	Kormondy EJ (1966) Concept of ecology. (Unit III)	
14.	Pandeya SC et al., (1963) Principles of Environment Sciences. (Unit IV)	
15.	Etherington JR (1975) Environment and Plant Ecology. (Unit IV)	
16.	Odum EP, Barrett GW (2010) Fundamentals of Ecology. 6 th Ed. (Unit I (Unit IV)	

Learning Outcomes:

: **After completion of the Paper, Student is able to:**

1. Student explains the basic terms and issues in the field of ecology and environmental protection.
2. Describes the relations and interactions between biotic and abiotic components of the environment.
3. Presents the causes and consequences of a biological imbalance in the ecosystems.
4. Indicates the need for biological monitoring of the environment and the possibility of using bio-indicators in the assessment of the environment

DEPARTMENT OF BOTANY

Syllabus for B.Sc.-I (BOTANY)

B. Sc. Part-I, Semester-II, Paper- III

DSC B13: BBT 22-201: Biodiversity of Archegoniate - Bryophytes, Pteridophytes, Gymnosperms (Credits: 02)

Learning Objectives: Students will be able to:

1. To make the students aware about the higher plants.
2. To impart the knowledge of fossil plants.

Unit I	:	Bryophytes	(09)
		General characters, Alteration of Generation, Economic importance, Morphology, anatomy and life cycle (excluding developmental stages) of <i>Riccia</i> and <i>Funaria</i>	
Unit II	:	Pteridophytes	(09)
		General characters, Economic importance, Morphology, anatomy and life cycles (excluding developmental stages) of Lycopsidea – <i>Selaginella</i> , <i>Lycopodium</i> , Pteropsida – <i>Pteris</i> ; Heterospory and seed habit.	
Unit III	:	Gymnosperms	(09)
		General characters; Classification (up to order) Economic importance; Morphology, anatomy (Leaf and Stem) and life cycle (excluding developmental stages) of Gnetopsida – <i>Gnetum</i> .	
Unit IV	:	Paleobotany	(09)
		Introduction; Geological time scale; Fossil formation process; Types of fossils – Compression, Impression, Petrification, Pith Cast, Coal balls.	
Reference books-			
1.		Parihar NS (1962) Bryophyta. Central Book Depot, Allahabad (Unit I)	
2.		Kashyap SR (1929) Liverworts of Western Himalayas and the Punjab Plains Part I and II (Unit I)	
3.		Jermy AG (1973) The Phylogeny and Classification of ferns. (Unit II)	
		Parihar NS (1959) An Introduction to Pteridophyta (Unit II)	
4.		Bierhorst DW (1971) Morphology of Vascular plants (Unit II, III)	
5.		Chamberlein CJ (1966) Gymnosperms, Structure and Evolution (Unit III)	
6.		Coulter and Chamberlein JM, Morphology of Gymnosperms (Unit III)	
7.		Bhatnagar SP and Moitra A (1996) The Gymnosperms. (Unit III)	
8.		Foster AS and Gifford EM (1959) Comparative morphology of vascular plants (Unit III)	
9.		Darroh WC (1960) Principles of Paleobotany (Unit IV)	
10.		Rashid A (1978) An introduction to Peridophytes (Unit II)	
11.		Arnold CA (1972) An Introduction to Paleobotany (Unit IV)	
13.		Ramanujan CGK (1979) Indian Gymnosperms in Time and Space (Unit III)	
14.		Shukla AC and Mishra SD (1975) Essentiales of Paleobotany (Unit IV)	
15.		Smith GM(1971) Cryptogamic Botany. Vol. II Tata McGraw Hill Publishing Co. New Delhi. (Unit I)	
16.		Spome KR (1966) Morphology of Pteridophytes (Unit II)	
17.		Sporne KR (1967) Morphology of Gymnosperms (Unit III)	

18.	Stewart WN (1983) Paleobotany and the evolution of plants, Cambridge U.S. (Unit IV)	
19.	Surange KR (1968) Indian Fossil Pteridophytes (Unit IV)	
20.	Trivedi AN (2002) Advances in Pteridology (Unit II)	
21.	Vashishta BR (1996) Botany for degree students – Pteridophytes (Unit II)	
22.	Vashishta PC (1976) The Gymnosperms (Unit III)	
23.	Watson EV (1971) The structure and life of Bryophytes. Hutchinson and Co., London (Unit I)	

Learning Outcomes:

: After completion of the Paper, Student is able to:

1. The students should be able to explain features and uses of vascular plants.
2. The students should be able to define concepts regarding vascular plants and fossils.
3. The students should be able to write answers and brief notes about plant diversity of vascular plants.

DEPARTMENT OF BOTANY

Syllabus for B.Sc.-I (BOTANY)

B. Sc. Part-I, Semester-II, Paper- IV

DSC B14: BBT 22-202: Plant Taxonomy (Credits: 02)

Learning Objectives: Students will be able to:

1. To impart the knowledge of basic structures of higher plants.
2. To impart the knowledge of developmental events in plants.

Unit I	:	Introductory Taxonomy	(09)
		Introduction, Scope of Taxonomy, Classification, Identification, Nomenclature, Binomial Nomenclature; Salient features of International Code of Nomenclature (ICN).	
Unit II	:	Tools for taxonomic studies	(09)
		Herbarium- Introduction, Role and significance. Botanical Gardens - Introduction, Role and Significance. Study of Sir J. C. Bose Botanical Garden, Calcutta; Lead Botanical Garden, Shivaji University, Kolhapur. Taxonomic literature – Flora, monograph.	
Unit III	:	Systems of classification of angiosperms	(09)
		General characters; Life cycle pattern in angiosperms; Systems of classifications –Artificial, Natural and Phylogenetic; Bentham and Hooker’s System of classification	
Unit IV	:	Angiosperm families	(09)
		Study of Angiosperm families – morphological, floral and distinguishing characters, floral diagram and floral formula of following families, with plants of economic importance. i. Brassicaceae, ii. Solanaceae, iv. Nyctaginaceae, v. Liliaceae.	
Reference books-			
1.		Cronquist A (1981) An Integrated System of Classification of Flowering Plants Columbia University Press, New York.	
2.		Davis PH, Heywood VH (1991) Principles of Angiosperm Taxonomy. Today and Tomorrow Publications, New Delhi.	
3.		Hutchinson J (1959) Families of Flowering plants. (Unit IV)	
4.		Lawrence GHM (1951) Taxonomy of Vascular Plants. Oxford and IBH Publ. Co. Pvt. Ltd. New Delhi.	
5.		Manilal KS, Muktesh Kumar MS (1998) A Handbook of Taxonomic Training. DST, New Delhi.	
7.		Gangulee HS and Kar AK (1992) College Botany Vol. II, New Central Book Agency (P) Ltd. (Unit II, III, IV)	
8.		Pande BP (2010) College Botany Vol. II, S Chand Ltd. (Unit I, II, III, IV)	
9.		Gurucharan Singh (2004) Plant Systematics: An Integrated Approach, Science Publishers Inc. (Unit I, II, III, IV)	

10.		Cronquist A (1988) The Evolution and Classification of Flowering Plants (2 nd ed.) Allen Press, USA	

Learning Outcomes:

: After completion of the Paper, Student is able to:

1. The students should be able to explain the concepts of fundamentals of plant sciences.
2. The students should be able to define the characteristic feature of plant development and angiosperm taxonomy.
3. The students should be able to write answers and brief notes about basics of morphology and development in angiosperms.

DEPARTMENT OF BOTANY
Syllabus for B.Sc.-I (BOTANY)
B. Sc. Part-I, Semester-I and II
DSC AP and BP-Practicals (Credits: 04)

Learning Objectives: Students will be able to:

1. To give practical knowledge to students about lower plant groups.
2. To give practical knowledge to students about ecological factors and ecological adaptation in plants.
3. To participate students in experiential learning with these practicals.
4. To give practical knowledge to students about identification of plants around them.
5. To give the practical knowledge about morphological and anatomical variations in plants.

1.	Study of forms of bacteria based on their shape (Permanent slide/ Photograph).
2.	Study of vegetative and reproductive structure of <i>Nostoc</i> and <i>Spirogyra</i> .
3.	Study of vegetative and reproductive structure of <i>Mucor</i> and <i>Penicillium</i> ..
4.	Study of Types of lichens (Based on morphology).
5.	Study of Meteorological Instruments (Any two).
6.	Study of pH and Water Holding Capacity of different soils.
7.	Study of morphological and anatomical adaptations in hydrophytes - <i>Hydrilla</i> , <i>Eichhornia</i> .
8.	Study of morphological and anatomical adaptations in Xerophytes - <i>Aloe</i> , <i>Nerium</i> .
9.	Study of morphological and anatomical adaptations in Parasites - <i>Cuscuta</i> .
10.	Study of Phytogeographical regions of India using standard Maps.
11.	Study of plants used in phytoremediation.
12.	Study of vegetative and reproductive structure of <i>Riccia</i> and <i>Funaria</i>
13.	Study of vegetative and reproductive structure of <i>Selaginella</i> and <i>Pteris</i> .
14.	Study of vegetative and reproductive structure of <i>Gnetum</i> .
15.	Study of types of fossils (Compression, Impression, Petrification, Cast and Coal Balls).
16.	Study of flowering twig morphology - Vegetative characters.
17.	Study of flowering twig morphology - Floral -/reproductive characters.
18.	Study of Family Brassicaceae.
19.	Study of Family Solanaceae.
20.	Study of Family Nyctaginaceae.
21.	Study of Family Liliaceae.
22.	Study of preparation of herbarium (Herbarium of any two weeds).

Rayat Shikshan Sansthas
Sadguru Gadage Maharaj College, Karad (Autonomous)

DEPARTMENT OF BOTANY
Evaluation Pattern: B.Sc.I Botany
(w.e.f.June2022)

Sem.	Course code	Subject code	Credits	Title of Paper	Evaluation Scheme (Marks)			Grand Total Marks
					CCE	SEE	Total	
I	DSC A13	BBT 22-101	02	Biodiversity of Microbes, Algae and Fungi	10	40	50	100
	DSC A14	BBT 22-102	02	Plant Ecology	10	40	50	
II	DSC B13	BBT 22-201	02	Biodiversity of Archegoniate-Bryophytes, Pteridophytes, Gymnosperms	10	40	50	150
	DSC B14	BBT 22-202	02	Plant Taxonomy	10	40	50	
	DSC	BBP 22-203	04	Botany Practical		40	50	
		Total	16		40	210	250	250

SEE-Semester End Examination, CCE-Continuous Comprehensive Evaluation

Nature of question paper and evaluation scheme:

❖ **Evaluation Scheme**

- Separate passing for Theory, Practical and internal examination is mandatory.
- In theory examination (SEE- Semester End Examination) passing for each paper is at 32marks (40% of 80marks).
- In internal of theory examination (CCE- Continuous Comprehensive Evaluation) passing for each paper is at 08 marks (40% of 20marks).
- In practical examination (SEE- Semester End Examination) passing is at 16 marks (40%of50marks).

DEPARTMENT OF BOTANY
Nature of SEE Question Papers
(w.e.f.June2022)

Que. 1. Select correct alternative.

08

1.
a) b)
c) d)
2.
a) b)
c) d)
3.
a) a)
c) c)
4.
a) a)
c) c)
5.
a) a)
c) c)
6.
a) b)
c) d)
7.
a) b)
c) d)
8.
a) b)
c) d)

Que. 2. Attempt any two.

16

- A)
- B)
- C)

Que. 3. Attempt any four.

16

- a)
- b)
- c)
- d)
- e)
- f)

DEPARTMENT OF BOTANY
FOR ACADEMIC YEAR: 2022-23

List of Paper setters

Sr. No.	Name of Paper setter	College
1	Dr. V. K. Nikam	S.G.M. College, Karad
2	Dr. (Mrs.) M. S. Patil	S.G.M. College, Karad
3	Dr. K. H. Patil	S.G.M. College, Karad
4	Dr. V. B. Chopade	S.G.M. College, Karad
5	Dr. A. V. Waghmode	S.G.M. College, Karad
6	Prof. Dr. D. D. Namdas	YCIS Satara
7	Dr. J. J. Chavan	YCIS Satara
8	Dr. S. D. Shaikh	RCSC Kolhapur
9	Dr. Mrs. R. A. Shinde	YCIS Satara
10	Dr. N. M. Pise	K. B. P. College, Pandharpur

DEPARTMENT OF BOTANY
FOR ACADEMIC YEAR: 2022-23

List of Examiners

Sr. No.	Name of Examiners	College
1	Prof. Dr. D. D. Namdas	YCIS Satara
2	Dr. J. J. Chavan	YCIS Satara
3	Dr. S. D. Shaikh	RCSC Kolhapur
4	Dr. Mrs. R. A. Shinde	YCIS Satara
5	Dr. N. M. Pise	K. B. P. College, Pandharpur
6	Dr. H. S. Patil	Arts, Science and Commerce College, Baramati
7	Dr. S. R. Valvi	Nowrosjee Wadia College, Pune
8	Dr. U. R. Pawar	Shri Pancham Khemraj Mahavidyalalaya, Sawantwadi
9	Dr. U. H. Patil	Bhogavati Mahavidylaya, Kurukali
10	Dr. S. K. Mengane	M. H. Shinde Mahavidyalaya, Tisangi

DEPARTMENT OF BOTANY
FOR ACADEMIC YEAR: 2022-23

List of Moderators

Sr. No.	Name of Moderators	College
1	Prof. Dr. D. D. Namdas	YCIS Satara
2	Dr. J. J. Chavan	YCIS Satara
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