

Academic Year: 2012 - 13

i. Name of the Programme: B.Sc.F.Y. (Sem.-I)

ii. Name of the course: Botany

iii. Name of Paper: Diversity of Microbes

iv. Paper Number: I

➤ **Course outcomes in detail:**

A. Objectives:

- i. The main objective of this course is to understand the diversity of microbial world.
- ii. The course will provide insights into study of microbes and distinguishing features associated with them.

B. Outcomes:

- Co1. Understand the microbial diversity, taxonomy and dynamics of microbial interactions.
- Co2. Understand the morphology, structure and importance of the various organisms.

i. Name of the Programme: B.Sc.F.Y. (Sem.-I)

ii. Name of the course: Botany

iii. Name of Paper: Histology and Anatomy

iv. Paper Number: II

➤ **Course outcomes in detail:**

A. Objectives:

- i. This course deals the study of variety of plant tissues.
- ii. To study the internal structures of plants parts.

B. Outcomes:

- Co1. Understand the various kinds of tissue systems.
- Co2. Understand the normal and anomalous secondary growth in plants.

i. Name of the Programme: B.Sc.F.Y. (Sem.-II)

ii. Name of the course: Botany

iii. Name of Paper: Diversity of Cryptogams

iv. Paper Number: III


➤ **Course outcomes in detail:**

A. Objectives:

- i. To study and impart knowledge about the occurrence, distribution, structure and life cycle of algae, bryophytes and pteridophytes.
- ii. To provide knowledge about importance of the lower group of organisms.

B. Outcomes:

- Co1. Understand to differentiate between various groups of algae, bryophytes and pteridophytes.
- Co2. Understand the economic and ecological importance of the lower groups of plants.


Principal
Sharda Mahavidyalaya
Parbhani

- i. Name of the Programme:** B.Sc.F.Y. (Sem.-II)
- ii. Name of the course:** Botany
- iii. Name of Paper:** Embryology and Environmental Biology
- iv. Paper Number:** IV

➤ **Course outcomes in detail:**

A. Objectives:

- i. To study embryology of angiospermic plant.
- ii. To familiarize students with the concepts of ecology & environmental science.

B. Outcomes:

- Co1. Co1. Understand the relations and interactions between biotic and abiotic components of the environment,
- Co2. Understand the micro and megasporogenesis along with development in plants.
- Co3. Understand the scope and importance of anatomy and embryology.

- i. Name of the Programme:** B.Sc.S.Y. (Sem.-III)
- ii. Name of the course:** Botany
- iii. Name of Paper:** Morphology and Taxonomy of Angiosperms
- iv. Paper Number:** VI

➤ **Course outcomes in detail:**

A. Objectives:

- i. To study the types of classifications- artificial, natural and phylogenetic.
- ii. To study the principles and taxonomical terminology.
- iii. To study the various plant families and their economic importance.

B. Outcomes:

- Co1. Proficiency with the basic terminology of plant morphology.
- Co2. Able to identify the major families of plants and their economic importance.
- Co3. Understand the distinguishing features of angiospermic families.

- i. Name of the Programme:** B.Sc.S.Y. (Sem.-III)
- ii. Name of the course:** Botany
- iii. Name of Paper:** Plant Physiology
- iv. Paper Number:** VII


➤ **Course outcomes in detail:**

A. Objectives:

- i. This course provides knowledge about the various physiological processes of the plants.
- i. Familiarize with basic skills and techniques related to plant physiology.

B. Outcomes:

- Co1. Understand the basic principles related to various physiological functions in plant life.
- Co2. Students will be familiar with contemporary concepts in plant physiology and the physiological mechanisms controlling growth and development.


Principal
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i. Name of the Programme: B.Sc.S.Y. (Sem.-IV)

ii. Name of the course: Botany

iii. Name of Paper: Seed plants and their utilization

iv. Paper Number: VIII

➤ **Course outcomes in detail:**

A. Objectives:

- i. To study the occurrence, distribution, structure and life history of gymnosperms.
- ii. To study the utilization of various plants.

B. Outcomes:

- Co1. Learn the life cycles of individuals belonging to gymnosperms
- Co2. Understand the distinguishing characters, cultivation and economic importance of variety of plants.

i. Name of the Programme: B.Sc.S.Y. (Sem.-IV)

ii. Name of the course: Botany

iii. Name of Paper: Plant Metabolism and Biochemistry

iv. Paper Number: IX

➤ **Course outcomes in detail:**

A. Objectives:

- i. This course provides knowledge about different physiological processes of the plant life.
- ii. This course also discusses about the classification, nomenclature and mechanism of enzyme action.

B. Outcomes:

- Co1. Understand the physiological details of photosynthesis, respiration and nitrogen metabolism.
- Co2. Understand about various biomolecules and metabolites synthesized by the plants.

i. Name of the Programme: B.Sc.T.Y. (Sem.-V)

ii. Name of the course: Botany

iii. Name of Paper: Cell and Molecular Biology

iv. Paper Number: XII

➤ **Course outcomes in detail:**

A. Objectives:

- i. Provides detailed knowledge about cell and molecular biology.
- ii. Familiarize with basic skills and techniques related to cell and molecular biology.

B. Outcomes:

- Co1. Gain knowledge about cell science i.e. cell structure, organelles & chromosome.
- Co2. Understand biochemical nature of nucleic acids and their role.


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i. Name of the Programme: B.Sc.T.Y. (Sem.-V)

ii. Name of the course: Botany

iii. Name of Paper: Systematic Botany - I

iv. Paper Number: XIII

➤ **Course outcomes in detail:**

A. Objectives:

- i. To study the different types of classifications.
- ii. To study the principles and rules of ICN and taxonomical terminology.
- iii. To study the various dicot families along with their economic importance.

B. Outcomes:

- Co1. Proficiency with the basic terminology of plant morphology.
- Co2. Understand the methods of collection and preservation of plants.
- Co3. Able to identify the families of plants and their economic importance.

i. Name of the Programme: B.Sc.T.Y. (Sem.-VI)

ii. Name of the course: Botany

iii. Name of Paper: Genetics and Biotechnology

iv. Paper Number: XIV

➤ **Course outcomes in detail:**

➤ **Objectives:**

- i. To understand fundamentals of genetics and evolution.
- ii. To understand the mechanism, role and importance of cell division, linkage and crossing over.
- iii. To learn various plant tissue culture techniques in relation to crop productivity.

➤ **Outcomes:**

- Co1. Understand the science of heredity.
- Co2. Understand the various gene mutations and variations and their adverse effects.
- Co3. Understand the techniques of production of new superior crop varieties.

i. Name of the Programme: B.Sc.T.Y. (Sem.-VI)

ii. Name of the course: Botany

iii. Name of Paper: Systematic Botany - II

iv. Paper Number: XV

➤ **Course outcomes in detail:**

A. Objectives:

- i. To study various dicot and monocot families along with their economic importance.
- ii. To study the variety of pollen grains.
- iii. To study the origin of angiosperms.

B. Outcomes:

- Co1. Able to identify the families of plants and their economic importance
- Co2. Understand the different types of pollen grains along with their importance.
- Co3. Realize the origin of angiosperms with respect to time, origin and probable ancestors.


Principal
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Parbhani

Academic Year: 2013 - 14

i. Name of the Programme: B.Sc.F.Y. (Sem.-I)

ii. Name of the course: Botany

iii. Name of Paper: Diversity of Microbes

iv. Paper Number: I

➤ **Course outcomes in detail:**

A. Objectives:

- i. The main objective of this course is to understand the diversity of microbial world.
- ii. The course will provide insights into study of microbes and distinguishing features associated with them.

B. Outcomes:

- Co1. Understand the microbial diversity, taxonomy and dynamics of microbial interactions.
- Co2. Understand the morphology, structure and importance of the various organisms.

i. Name of the Programme: B.Sc.F.Y. (Sem.-I)

ii. Name of the course: Botany

iii. Name of Paper: Cell and Molecular Biology

iv. Paper Number: II

➤ **Course outcomes in detail:**

A. Objectives:

- i. Provides detailed knowledge about cell and molecular biology.
- ii. Familiarize with basic skills and techniques related to cell and molecular biology.

B. Outcomes:

- Co1. Gain knowledge about cell science i.e. cell structure, organelles & chromosome.
- Co2. Understand biochemical nature of nucleic acids and their role.
- Co3. Learn the scope and importance of molecular biology.

i. Name of the Programme: B.Sc.F.Y. (Sem.-II)

ii. Name of the course: Botany

iii. Name of Paper: Diversity of Cryptogams

iv. Paper Number: III

➤ **Course outcomes in detail:**

A. Objectives:

- i. To study and impart knowledge about the occurrence, distribution, structure and life cycle of algae, bryophytes and pteridophytes.
- ii. To provide knowledge about importance of the lower group of organisms.

B. Outcomes:

- Co1. Understand to differentiate between various groups of algae, bryophytes and pteridophytes.
- Co2. Understand the economic and ecological importance of the lower groups of plants.


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i. Name of the Programme: B.Sc.F.Y. (Sem.-II)

ii. Name of the course: Botany

iii. Name of Paper: Genetics and Plant Breeding

iv. Paper Number: IV

➤ **Course outcomes in detail:**

A. Objectives:

- i. This course will enable the students to understand fundamentals of genetics and evolution.
- ii. To understand the mechanism, role and importance of cell division, linkage and crossing over.
- iii. To learn various plant breeding techniques in relation to crop productivity.

B. Outcomes:

- Co1. Understand the science of heredity.
- Co2. Understand the various gene mutations and variations and their adverse effects.
- Co3. Understand the techniques of production of new superior crop varieties.

i. Name of the Programme: B.Sc.S.Y. (Sem.-III)

ii. Name of the course: Botany

iii. Name of Paper: Morphology and Taxonomy of Angiosperms

iv. Paper Number: VI

➤ **Course outcomes in detail:**

A. Objectives:

- i. To study the types of classifications- artificial, Natural and phylogenetic.
- ii. To study the principles and taxonomical terminology.
- iii. To study the various plant families and their economic importance.

B. Outcomes:

- Co1. Proficiency with the basic terminology of plant morphology.
- Co2. Able to identify the major families of plants and their economic importance.
- Co3. Understand the distinguishing features of angiospermic families.

i. Name of the Programme: B.Sc.S.Y. (Sem.-III)

ii. Name of the course: Botany

iii. Name of Paper: Plant Physiology

iv. Paper Number: VII


➤ **Course outcomes in detail:**

A. Objectives:

- i. Provides knowledge about the various physiological processes of the plants.
- ii. Familiarize with basic skills and techniques related to plant physiology.

B. Outcomes:

- Co1. Understand the basic principles related to various physiological functions in plant life.
- Co2. Students will be familiar with contemporary concepts in plant physiology and the physiological mechanisms controlling growth and development.


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- i. Name of the Programme:** B.Sc.S.Y. (Sem.-IV)
- ii. Name of the course:** Botany
- iii. Name of Paper:** Seed plants and their utilization
- iv. Paper Number:** VIII

➤ **Course outcomes in detail:**

A. Objectives:

- i. To study the occurrence, distribution, structure and life history of gymnosperms.
- ii. To study the utilization of various plants.

B. Outcomes:

- Co1. Learn the life cycles of individuals belonging to gymnosperms
- Co2. Understand the distinguishing characters, cultivation and economic importance of variety of plants.

- i. Name of the Programme:** B.Sc.S.Y. (Sem.-IV)
- ii. Name of the course:** Botany
- iii. Name of Paper:** Plant Metabolism and Biochemistry
- iv. Paper Number:** IX

➤ **Course outcomes in detail:**

A. Objectives:

- i. This course provides knowledge about different physiological processes of the plant life.
- ii. This course also discusses about the classification, nomenclature and mechanism of enzyme action.

B. Outcomes:

- Co1. Understand the physiological details of photosynthesis, respiration and nitrogen metabolism.
- Co2. Understand about various biomolecules and metabolites synthesized by the plants.

- i. Name of the Programme:** B.Sc.T.Y. (Sem.-V)
- ii. Name of the course:** Botany
- iii. Name of Paper:** Cell and Molecular Biology
- iv. Paper Number:** XII

➤ **Course outcomes in detail:**

A. Objectives:

- i. Provides detailed knowledge about cell and molecular biology.
- ii. Familiarize with basic skills and techniques related to cell and molecular biology.

B. Outcomes:

- Co1. Gain knowledge about cell science i.e. cell structure, organelles & chromosome.
- Co2. Understand biochemical nature of nucleic acids and their role.
- Co3. Learn the scope and importance of molecular biology.


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i. Name of the Programme: B.Sc.T.Y. (Sem.-V)

ii. Name of the course: Botany

iii. Name of Paper: Systematic Botany - I

iv. Paper Number: XIII

➤ **Course outcomes in detail:**

A. Objectives:

- i. To study the different types of classifications.
- ii. To study the principles and rules of ICN and taxonomical terminology.
- iii. To study the various dicot families along with their economic importance.

B. Outcomes:

- Co1. Proficiency with the basic terminology of plant morphology.
- Co2. Understand the methods of collection and preservation of plants.
- Co3. Able to identify the families of plants and their economic importance.

i. Name of the Programme: B.Sc.T.Y. (Sem.-VI)

ii. Name of the course: Botany

iii. Name of Paper: Genetics and Biotechnology

iv. Paper Number: XIV

➤ **Course outcomes in detail:**

➤ **Objectives:**

- i. To understand fundamentals of genetics and evolution.
- ii. To understand the mechanism, role and importance of cell division, linkage and crossing over.
- iii. To learn various plant tissue culture techniques in relation to crop productivity.

➤ **Outcomes:**

- Co1. Understand the science of heredity.
- Co2. Understand the various gene mutations and variations and their adverse effects.
- Co3. Understand the techniques of production of new superior crop varieties.

i. Name of the Programme: B.Sc.T.Y. (Sem.-VI)

ii. Name of the course: Botany

iii. Name of Paper: Systematic Botany - II

iv. Paper Number: XV

iii. Objectives:

- i. To study the various dicot and monocot families along with their economic importance.
- iii. To study the variety of pollen grains.
- iv. To study the origin of angiosperms.

iv. Outcomes:

- Co1. Able to identify the families of plants and their economic importance
- Co2. Understand the different types of pollengrains along with their importance.
- Co3. Realize the origin of angiosperms with respect to time, origin and probable ancestors.



Principal
Sharda Mahavidyalaya
Parbhani

Academic Year: 2014 - 15

i. Name of the Programme: B.Sc.F.Y. (Sem.-I)

ii. Name of the course: Botany

iii. Name of Paper: Diversity of Microbes

iv. Paper Number: I

➤ **Course outcomes in detail:**

A. Objectives:

- i. The main objective of this course is to understand the diversity of microbial world.
- ii. The course will provide insights into study of microbes and distinguishing features associated with them.

B. Outcomes:

- Co1. Understand the microbial diversity, taxonomy and dynamics of microbial interactions.
- Co2. Understand the morphology, structure and importance of the various organisms.

i. Name of the Programme: B.Sc.F.Y. (Sem.-I)

ii. Name of the course: Botany

iii. Name of Paper: Cell and Molecular Biology

iv. Paper Number: II

➤ **Course outcomes in detail:**

A. Objectives:

- i. Provides detailed knowledge about cell and molecular biology.
- ii. Familiarize with basic skills and techniques related to cell and molecular biology.

B. Outcomes:

- Co1. Gain knowledge about cell science i.e. cell structure, organelles & chromosome.
- Co2. Understand biochemical nature of nucleic acids and their role.
- Co3. Learn the scope and importance of molecular biology.

i. Name of the Programme: B.Sc.F.Y. (Sem.-II)

ii. Name of the course: Botany

iii. Name of Paper: Diversity of Cryptogams

iv. Paper Number: III


➤ **Course outcomes in detail:**

A. Objectives:

- i. To study and impart knowledge about the occurrence, distribution, structure and life cycle of algae, bryophytes and pteridophytes.
- ii. To provide knowledge about importance of the lower group of organisms.

B. Outcomes:

- Co1. Understand to differentiate between various groups of algae, bryophytes and pteridophytes.
- Co2. Understand the economic and ecological importance of the lower groups of plants.


Principal
Sharda Mahavidyalaya
Parbhani

i. Name of the Programme: B.Sc.F.Y. (Sem.-II)

ii. Name of the course: Botany

iii. Name of Paper: Genetics and Plant Breeding

iv. Paper Number: IV

➤ **Course outcomes in detail:**

A. Objectives:

- i. To understand fundamentals of genetics and evolution.
- ii. To understand the mechanism, role and importance of cell division, linkage and crossing over.
- iii. To learn various plant breeding techniques in relation to crop productivity.

B. Outcomes:

- Co1. Understand the science of heredity.
- Co2. Understand the various gene mutations and variations and their adverse effects.
- Co3. Understand the techniques of production of new superior crop varieties.

i. Name of the Programme: B.Sc.S.Y. (Sem.-III)

ii. Name of the course: Botany

iii. Name of Paper: Morphology and Taxonomy of Angiosperms

iv. Paper Number: VI

➤ **Course outcomes in detail:**

A. Objectives:

- i. To study the types of classifications- artificial, Natural and phylogenetic.
- ii. To study the principles and taxonomical terminology.
- iii. To study the various plant families and their economic importance.

B. Outcomes:

- Co1. Proficiency with the basic terminology of plant morphology.
- Co2. Able to identify the major families of plants and their economic importance.
- Co3. Understand various angiospermic families emphasizing their morphology and diagnostic characters.

i. Name of the Programme: B.Sc.S.Y. (Sem.-III)

ii. Name of the course: Botany

iii. Name of Paper: Histology, Anatomy and Embryology of Angiosperms

iv. Paper Number: VII

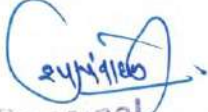
➤ **Course outcomes in detail:**

A. Objectives:

- i. This course deals the study of variety of plant tissues.
- ii. To study the internal structures of plants parts.
- iii. This paper also imparts embryology of angiospermic plant.

B. Outcomes:

- Co1. Understand the various kinds of tissue systems.
- Co2. Understand the normal and anomalous secondary growth in plants.
- Co3. Understand the micro and megasporogenesis along with development in plants.


Principal
Sharda Mahavidyalaya
Parbhani

i. Name of the Programme: B.Sc.S.Y. (Sem.-IV)

ii. Name of the course: Botany

iii. Name of Paper: Gymnosperms and Paleobotany

iv. Paper Number: VIII

➤ **Course outcomes in detail:**

A. Objectives:

- i. To study the occurrence, distribution, structure and life history of gymnosperms.
- ii. To provide students with skills in Paleobotany studies.

B. Outcomes:

- i. Learn the life cycles of individuals belonging to gymnosperms.
- ii. Learn about process of fossil formation and fossils plants

i. Name of the Programme: B.Sc.S.Y. (Sem.-IV)

ii. Name of the course: Botany

iii. Name of Paper: Ecology & Environmental Biology

iv. Paper Number: IX

➤ **Course outcomes in detail:**

A. Objectives:

- i. To familiarize students with the concepts of ecology & environmental science.
- ii. To provide students with skills necessary for ecological studies

B. Outcomes:

- Co1. Understand the relations and interactions between biotic and abiotic components of the environment,
- Co2: Understand the causes and consequences of a biological imbalance in the ecosystems.
- Co3. Know the sustainable development and care of environment.

i. Name of the Programme: B.Sc.T.Y. (Sem.-V)

ii. Name of the course: Botany

iii. Name of Paper: Cell and Molecular Biology

iv. Paper Number: XII

➤ **Course outcomes in detail:**

A. Objectives:

- i. Provides detailed knowledge about cell and molecular biology.
- ii. Familiarize with basic skills and techniques related to cell and molecular biology.

B. Outcomes:

- Co1. Gain knowledge about cell science i.e. cell structure, organelles & chromosome.
- Co2. Understand biochemical nature of nucleic acids and their role.
- Co3. Learn the scope and importance of molecular biology.


Principal
Sharda Mahavidyalaya
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i. Name of the Programme: B.Sc.T.Y. (Sem.-V)

ii. Name of the course: Botany

iii. Name of Paper: Systematic Botany - I

iv. Paper Number: XIII

➤ **Course outcomes in detail:**

A. Objectives:

- i. To study the different types of classifications.
- ii. To study the principles and rules of ICN and taxonomical terminology.
- iii. To study the various dicot families along with their economic importance.

B. Outcomes:

- Co1. Proficiency with the basic terminology of plant morphology.
- Co2. Understand the methods of collection and preservation of plants.
- Co3. Able to identify the families of plants and their economic importance.

i. Name of the Programme: B.Sc.T.Y. (Sem.-VI)

ii. Name of the course: Botany

iii. Name of Paper: Genetics and Biotechnology

iv. Paper Number: XIV

➤ **Course outcomes in detail:**

➤ **Objectives:**

- i. To understand fundamentals of genetics and evolution.
- ii. To understand the mechanism, role and importance of cell division, linkage and crossing over.
- iii. To learn various plant tissue culture techniques in relation to crop productivity.

➤ **Outcomes:**

- Co1. Understand the science of heredity.
- Co2. Understand the various gene mutations and variations and their adverse effects.
- Co3. Understand the techniques of production of new superior crop varieties.

i. Name of the Programme: B.Sc.T.Y. (Sem.-VI)

ii. Name of the course: Botany

iii. Name of Paper: Systematic Botany - II

iv. Paper Number: XV


➤ **Course outcomes in detail:**

A. Objectives:

- i. To study the various dicot and monocot families along with their economic importance.
- iii. To study the variety of pollen grains.
- iv. To study the origin of angiosperms.

B. Outcomes:

- Co1. Able to identify the families of plants and their economic importance
- Co2. Understand the different types of pollen grains along with their importance.
- Co3. Realize the origin of angiosperms with respect to time, origin and probable ancestors.


Principal
Sharda Mahavidyalaya
Parbhani

Academic Year: 2015 - 16

i. Name of the Programme: B.Sc.F.Y. (Sem.-I)

ii. Name of the course: Botany

iii. Name of Paper: Diversity of Microbes

iv. Paper Number: I

➤ **Course outcomes in detail:**

A. Objectives:

- i. The main objective of this course is to understand the diversity of microbial world.
- ii. The course will provide insights into study of microbes and distinguishing features associated with them.

B. Outcomes:

- Co1. Understand the microbial diversity, taxonomy and dynamics of microbial interactions.
- Co2. Understand the morphology, structure and importance of the various organisms.

ii. Name of the Programme: B.Sc.F.Y. (Sem.-I)

ii. Name of the course: Botany

iii. Name of Paper: Cell and Molecular Biology

iv. Paper Number: II

➤ **Course outcomes in detail:**

A. Objectives:

- i. Provides detailed knowledge about cell and molecular biology.
- ii. Familiarize with basic skills and techniques related to cell and molecular biology.

B. Outcomes:

- Co1. Gain knowledge about cell science i.e. cell structure, organelles & chromosome.
- Co2. Understand biochemical nature of nucleic acids and their role.
- Co3. Learn the scope and importance of molecular biology.

i. Name of the Programme: B.Sc.F.Y. (Sem.-II)

ii. Name of the course: Botany

iii. Name of Paper: Diversity of Cryptogams

iv. Paper Number: III

A. Objectives:

- i. To study and impart knowledge about the occurrence, distribution, structure and life cycle of algae, bryophytes and pteridophytes.
- ii. To provide knowledge about importance of the lower group of organisms.

B. Outcomes:

- Co1. Understand to differentiate between various groups of algae, bryophytes and pteridophytes.
- Co2. Understand the economic and ecological importance of the lower groups of plants.


Principal
Sharda Mahavidyalaya
Parbhani

i. Name of the Programme: B.Sc.F.Y. (Sem.-II)

ii. Name of the course: Botany

iii. Name of Paper: Genetics and Plant Breeding

iv. Paper Number: IV

➤ **Course outcomes in detail:**

A. Objectives:

- i. To understand fundamentals of genetics and evolution.
- ii. To understand the mechanism, role and importance of cell division, linkage and crossing over.
- iii. To learn various plant breeding techniques in relation to crop productivity.

B. Outcomes:

- Co1. Understand the science of heredity.
- Co2. Understand the various gene mutations and variations and their adverse effects.
- Co3. Understand the techniques of production of new superior crop varieties.

i. Name of the Programme: B.Sc.S.Y. (Sem.-III)

ii. Name of the course: Botany

iii. Name of Paper: Morphology and Taxonomy of Angiosperms

iv. Paper Number: VI

➤ **Course outcomes in detail:**

A. Objectives:

- i. To study the types of classifications- artificial, Natural and phylogenetic.
- ii. To study the principles and taxonomical terminology.
- iii. To study the various plant families and their economic importance.

B. Outcomes:

- Co1. Proficiency with the basic terminology of plant morphology.
- Co2. Able to identify the major families of plants and their economic importance.
- Co3. Understand various angiospermic families emphasizing their morphology and diagnostic characters.

i. Name of the Programme: B.Sc.S.Y. (Sem.-III)

ii. Name of the course: Botany

iii. Name of Paper: Histology, Anatomy and Embryology of Angiosperms

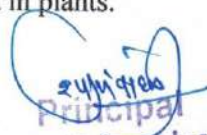
iv. Paper Number: VII

A. Objectives:

- i. This course deals the study of variety of plant tissues.
- ii. To study the internal structures of plants parts.
- iii. This paper also imparts embryology of angiospermic plant.

B. Outcomes:

- Co1. Understand the various kinds of tissue systems.
- Co2. Understand the normal and anomalous secondary growth in plants.
- Co3. Understand the basic concepts with ability to identify and distinguish various features related to anatomy and embryology.
- Co4. Understand the micro and megasporogenesis along with development in plants.


Principal
Sharda Mahavidyalaya
Parbhani

- i. Name of the Programme:** B.Sc.S.Y. (Sem.-IV)
ii. Name of the course: Botany
iii. Name of Paper: Gymnosperms and Paleobotany
iv. Paper Number: VIII

➤ **Course outcomes in detail:**

A. Objectives:

- i. To study the occurrence, distribution, structure and life history of gymnosperms.
- ii. To provide students with skills in Paleobotany studies.

B. Outcomes:

- i. Learn the life cycles of individuals belonging to gymnosperms.
- ii. Learn about process of fossil formation and fossils plants

- i. Name of the Programme:** B.Sc.S.Y. (Sem.-IV)
ii. Name of the course: Botany
iii. Name of Paper: Ecology & Environmental Biology
iv. Paper Number: IX

➤ **Course outcomes in detail:**

A. Objectives:

- i. To familiarize students with the concepts of ecology & environmental science.
- ii. To provide students with skills necessary for ecological studies

B. Outcomes:

- Co1. Understand the relations and interactions between biotic and abiotic components of the environment.
- Co2. Understand the plant communities and ecological adaptations in plants.
- Co3: Understand the causes and consequences of a biological imbalance in the ecosystems.
- Co4. Learn about conservation of biodiversity non-conventional energy and pollution.

- i. Name of the Programme:** B.Sc.T.Y. (Sem.-V)
ii. Name of the course: Botany
iii. Name of Paper: Plant Physiology
iv. Paper Number: XII

➤ **Course outcomes in detail:**

A. Objectives:

- i. This course provides knowledge about the various physiological processes of the plants.
- ii. Familiarize with basic skills and techniques related to plant physiology.

B. Outcomes:

- Co1. Understand the basic principles related to various physiological functions in plant life.
- Co2. Students will be familiar with contemporary concepts in plant physiology and the physiological mechanisms controlling growth and development.
- Co3. Learn about the biomolecules and metabolites synthesized in plants.


Principal
Sharda Mahavidyalaya
Parbhani

i. Name of the Programme: B.Sc.T.Y. (Sem.-V)

ii. Name of the course: Botany

iii. Name of Paper: Systematic Botany - I

iv. Paper Number: XIII

➤ **Course outcomes in detail:**

A. Objectives:

- i. To study the different types of classifications.
- ii. To study the principles and rules of ICN and taxonomical terminology.
- iii. To study the various dicot families along with their economic importance.

B. Outcomes:

- Co1. Proficiency with the basic terminology of plant morphology.
- Co2. Understand the methods of collection and preservation of plants.
- Co3. Able to identify the families of plants and their economic importance.

i. Name of the Programme: B.Sc.T.Y. (Sem.-VI)

ii. Name of the course: Botany

iii. Name of Paper: Plant Metabolism, Biochemistry & Biotechnology

iv. Paper Number: XIV

➤ **Course outcomes in detail:**

A. Objectives:

- i. This course provides knowledge about different physiological processes of the plant
- ii. To study the classification, nomenclature and mechanism of enzyme action.
- iii. Familiarize with basic skills and techniques related to plant tissue culture.

B. Outcomes:

- Co1. Understand the physiological details of photosynthesis, respiration and nitrogen metabolism.
- Co2. Understand the fundamentals of plant tissue culture techniques.
- Co3. Realize the application & importance of plant tissue culture & transgenic plants.

i. Name of the Programme: B.Sc.T.Y. (Sem.-VI)

ii. Name of the course: Botany

iii. Name of Paper: Systematic Botany - II

iv. Paper Number: XV

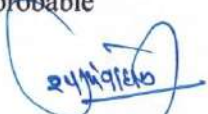
➤ **Course outcomes in detail:**

A. Objectives:

- i. To study the various dicot and monocot families with their economic importance.
- ii. To study the variety of pollen grains.
- iii. To study the origin of angiosperms.

B. Outcomes:

- Co1. Able to identify the families of plants and their economic importance
- Co2. Understand the different types of pollengrains along with their importance.
- Co3. Realize the origin of angiosperms with respect to time, origin and probable ancestors.


Principal
Sharda Mahavidyalaya
Parbhani

Academic Year: 2016 - 17

i. Name of the Programme: B.Sc.F.Y. (Sem.-I)

ii. Name of the course: Botany

iii. Name of Paper: Diversity of Microbes

iv. Paper Number: I

➤ **Course outcomes in detail:**

A. Objectives:

- i. The main objective of this course is to understand the diversity of microbial world.
- ii. Provides information about the occurrence, distribution, structure and life history of viruses, bacteria, fungi and lichens.
- iii. The course will provide insights into study of microbes and distinguishing features associated with them.

B. Outcomes:

- Co1. Understand life cycle pattern of viruses, bacteria fungi and lichens.
- Co2. Understand useful and harmful activities of viruses, bacteria, fungi and lichens.
- Co3. Differentiate various groups of microbes.

i. Name of the Programme: B.Sc.F.Y. (Sem.-I)

ii. Name of the course: Botany

iii. Name of Paper: Cell and Molecular Biology

iv. Paper Number: II

➤ **Course outcomes in detail:**

A. Objectives:

- i. Provides detailed knowledge about cell and molecular biology.
- ii. Familiarize with basic skills and techniques related to cell and molecular biology.

B. Outcomes:

- Co1. Gain knowledge about cell science i.e. cell structure, organelles & chromosome.
- Co2. Understand biochemical nature of nucleic acids and their role.
- Co3. Learn the scope and importance of molecular biology.

i. Name of the Programme: B.Sc.F.Y. (Sem.-II)

ii. Name of the course: Botany

iii. Name of Paper: Diversity of Cryptogams

iv. Paper Number: III

➤ **Course outcomes in detail:**

A. Objectives:

- i. To provides knowledge about the occurrence, distribution, structure and life cycle pattern of algae, bryophytes and pteridophytes.
- ii. To give information about importance of the lower group of organisms.

B. Outcomes:

- Co1. Understand the salient features of algae, bryophytes and pteridophytes.
- Co2. Learn about diversity of lower cryptogrammic plants in nature.
- Co3. Understand the economic and ecological importance of the lower plants.


Principal
Sharda Mahavidyalaya
Parbhani

i. Name of the Programme: B.Sc.F.Y. (Sem.-II)

ii. Name of the course: Botany

iii. Name of Paper: Genetics and Plant Breeding

iv. Paper Number: IV

➤ **Course outcomes in detail:**

A. Objectives:

- i. To understand fundamentals of genetics and evolution.
- ii. To study the mechanism, role & importance of cell division, linkage & crossing over.
- iii. To learn various plant breeding techniques in relation to crop productivity.

B. Outcomes:

- Co1. Understand the science of heredity.
- Co2. Understand the various gene mutations and variations and their adverse effects.
- Co3. Understand the techniques of production of new superior crop varieties.

i. Name of the Programme: B.Sc.S.Y. (Sem.-III)

ii. Name of the course: Botany

iii. Name of Paper: Morphology and Taxonomy of Angiosperms

iv. Paper Number: VI

➤ **Course outcomes in detail:**

➤ **Objectives:**

- ii. To study the types of classifications- artificial, Natural and phylogenetic.
- ii. To study the principles and taxonomical terminology.
- iii. To study the various plant families and their economic importance.

➤ **Outcomes:**

- Co1. Proficiency with the basic terminology of plant morphology.
- Co2. Able to identify the major families of plants and their economic importance.
- Co3. Understand the distinguishing features of angiospermic families.

i. Name of the Programme: B.Sc.S.Y. (Sem.-III)

ii. Name of the course: Botany

iii. Name of Paper: Histology, Anatomy and Embryology of Angiosperms

iv. Paper Number: VII

➤ **Course outcomes in detail:**

A. Objectives:

- i. This course deals the study of variety of plant tissues.
- ii. To study the internal structures of plants parts.
- iii. This paper also imparts embryology of angiospermic plant.

B. Outcomes:

- Co1. Understand the various kinds of tissue systems.
- Co2. Understand the normal and anomalous secondary growth in plants.
- Co3. Understand the basic concepts with ability to identify and distinguish various features related to anatomy and embryology.
- Co4. Understand the micro and megasporogenesis along with development in plants.


Principal
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Parbhani

i. Name of the Programme: B.Sc.S.Y. (Sem.-IV)

ii. Name of the course: Botany

iii. Name of Paper: Gymnosperms and Paleobotany

iv. Paper Number: VIII

➤ **Course outcomes in detail:**

A. Objectives:

- i. To study the occurrence, distribution, structure and life history of gymnosperms.
- ii. To provide students with skills in Paleobotany studies.

B. Outcomes:

- i. Learn the life cycles of individuals belonging to gymnosperms.
- ii. Learn about process of fossil formation and fossils plants

i. Name of the Programme: B.Sc.S.Y. (Sem.-IV)

ii. Name of the course: Botany

iii. Name of Paper: Ecology & Environmental Biology

iv. Paper Number: IX

➤ **Course outcomes in detail:**

A. Objectives:

- i. To familiarize students with the concepts of ecology & environmental science.
- ii. To provide students with skills necessary for ecological studies

B. Outcomes:

- Co1. Understand the relations and interactions between biotic and abiotic components of the environment.
- Co2. Understand the plant communities and ecological adaptations in plants.
- Co3: Understand the causes and consequences of a biological imbalance in the ecosystems.
- Co4. Learn about conservation of biodiversity non-conventional energy and pollution.

i. Name of the Programme: B.Sc.T.Y. (Sem.-V)

ii. Name of the course: Botany

iii. Name of Paper: Plant Physiology

iv. Paper Number: XII

➤ **Course outcomes in detail:**

A. Objectives:

- i. This course provides knowledge about the various physiological processes of the plants.
- ii. Familiarize with basic skills and techniques related to plant physiology.

B. Outcomes:

- Co1. Understand the basic principles related to various physiological functions in plant life.
- Co2. Students will be familiar with contemporary concepts in plant physiology and the physiological mechanisms controlling growth and development.
- Co3. Learn about the biomolecules and metabolites synthesized in plants.


Principal
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Parbhani

i. Name of the Programme: B.Sc.T.Y. (Sem.-V)

ii. Name of the course: Botany

iii. Name of Paper: Systematic Botany - I

iv. Paper Number: XIII

➤ **Course outcomes in detail:**

A. Objectives:

- i. To study the different types of classifications.
- ii. To study the principles and rules of ICN and taxonomical terminology.
- iii. To study the various dicot families along with their economic importance.

B. Outcomes:

- Co1. Proficiency with the basic terminology of plant morphology.
- Co2. Understand the methods of collection and preservation of plants.
- Co3. Able to identify the families of plants and their economic importance.

i. Name of the Programme: B.Sc.T.Y. (Sem.-VI)

ii. Name of the course: Botany

iii. Name of Paper: Plant Metabolism, Biochemistry & Biotechnology

iv. Paper Number: XIV

A. Objectives:

- i. This course provides knowledge about different physiological processes of the plant life.
- ii. This course also discusses about the classification, nomenclature and mechanism of enzyme action.
- iii. Familiarize with basic skills and techniques related to plant tissue culture.

B. Outcomes:

- Co1. Understand the physiological details of photosynthesis, respiration and nitrogen metabolism.
- Co2. Understand the fundamentals of plant tissue culture techniques.
- Co3. Realize the application & importance of plant tissue culture & transgenic plants.

i. Name of the Programme: B.Sc.T.Y. (Sem.-VI)

ii. Name of the course: Botany

iii. Name of Paper: Systematic Botany - II

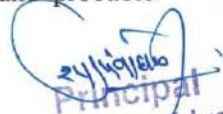
iv. Paper Number: XV

A. Objectives:

- i. To study the various dicot and monocot families with their economic importance.
- ii. To study the variety of pollen grains.
- iii. To study the origin of angiosperms.

B. Outcomes:

- Co1. Able to identify the families of plants and their economic importance
- Co2. Understand the different types of pollengrains along with their importance.
- Co3. Realize the origin of angiosperms with respect to time, origin and probable ancestors.


Principal
Sharda Mahavidyalaya
Parbhani

Academic Year: 2017 - 18

i. Name of the Programme: B.Sc.F.Y. (Sem.-I)

ii. Name of the course: Botany

iii. Name of Paper: Diversity of Microbes

iv. Paper Number: I

➤ **Course outcomes in detail:**

A. Objectives:

- i. The main objective of this course is to understand the diversity of microbial world.
- ii. Provides information about the occurrence, distribution, structure and life history of viruses, bacteria, fungi and lichens.
- iii. The course will provide insights into study of microbes and distinguishing features associated with them.

B. Outcomes:

- Co1. Understand life cycle pattern of viruses, bacteria fungi and lichens.
- Co2. Understand useful and harmful activities of viruses, bacteria, fungi and lichens.
- Co3. Differentiate various groups of microbes.

i. Name of the Programme: B.Sc.F.Y. (Sem.-I)

ii. Name of the course: Botany

iii. Name of Paper: Cell and Molecular Biology

iv. Paper Number: II

➤ **Course outcomes in detail:**

A. Objectives:

- i. Provides detailed knowledge about cell and molecular biology.
- ii. Familiarize with basic skills and techniques related to cell and molecular biology.

B. Outcomes:

- Co1. Gain knowledge about cell science i.e. cell structure, organelles & chromosome.
- Co2. Understand biochemical nature of nucleic acids and their role.
- Co3. Learn the scope and importance of molecular biology.

i. Name of the Programme: B.Sc.F.Y. (Sem.-II)

ii. Name of the course: Botany

iii. Name of Paper: Diversity of Cryptogams

iv. Paper Number: III

➤ **Course outcomes in detail:**

A. Objectives:

- i. To provides knowledge about the occurrence, distribution, structure and life cycle pattern of algae, bryophytes and pteridophytes.
- ii. To give information about importance of the lower group of organisms.

B. Outcomes:

- Co1. Understand the salient features of algae, bryophytes and pteridophytes.
- Co2. Learn about diversity of lower cryptogrammic plants in nature.
- Co3. Understand the economic and ecological importance of the lower plants.



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i. Name of the Programme: B.Sc.F.Y. (Sem.-II)

ii. Name of the course: Botany

iii. Name of Paper: Genetics and Plant Breeding

iv. Paper Number: IV

➤ **Course outcomes in detail:**

A. Objectives:

- i. To understand fundamentals of genetics and evolution.
- ii. To understand the mechanism, role and importance of cell division, linkage and crossing over.
- iii. To learn various plant breeding techniques in relation to crop productivity.

B. Outcomes:

- Co1. Understand the science of heredity.
- Co2. Understand the various gene mutations and variations and their adverse effects.
- Co3. Understand the techniques of production of new superior crop varieties.

i. Name of the Programme: B.Sc.S.Y. (Sem.-III)

ii. Name of the course: Botany

iii. Name of Paper: Morphology and Taxonomy of Angiosperms

iv. Paper Number: VI

➤ **Course outcomes in detail:**

A. Objectives:

- i. To study the types of classifications- artificial, Natural and phylogenetic.
- ii. To study the principles and taxonomical terminology.
- iii. To study the various plant families and their economic importance.

B. Outcomes:

- Co1. Proficiency with the basic terminology of plant morphology.
- Co2. Able to identify the major families of plants and their economic importance.
- Co3. Understand the distinguishing features of angiospermic families.

i. Name of the Programme: B.Sc.S.Y. (Sem.-III)

ii. Name of the course: Botany

iii. Name of Paper: Histology, Anatomy and Embryology of Angiosperms

iv. Paper Number: VII


➤ **Course outcomes in detail:**

A. Objectives:

- i. This course deals the study of variety of plant tissues.
- ii. To study the internal structures of plants parts.
- iii. This paper also imparts embryology of angiospermic plant.

B. Outcomes:

- Co1. Understand the various kinds of tissue systems.
- Co2. Understand the normal and anomalous secondary growth in plants.
- Co3. Understand the basic concepts with ability to identify and distinguish various features related to anatomy and embryology.
- Co4. Understand the micro and megasporogenesis along with development in plants.


Principal
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Parbhani

i. Name of the Programme: B.Sc.S.Y. (Sem.-IV)

ii. Name of the course: Botany

iii. Name of Paper: Gymnosperms and Paleobotany

iv. Paper Number: VIII

➤ **Course outcomes in detail:**

A. Objectives:

- i. To study the occurrence, distribution, structure and life history of gymnosperms.
- ii. To provide students with skills in Paleobotany studies.

B. Outcomes:

- i. Learn the life cycles of individuals belonging to gymnosperms.
- ii. Learn about process of fossil formation and fossils plants

i. Name of the Programme: B.Sc.S.Y. (Sem.-IV)

ii. Name of the course: Botany

iii. Name of Paper: Ecology & Environmental Biology

iv. Paper Number: IX

➤ **Course outcomes in detail:**

A. Objectives:

- i. To familiarize students with the concepts of ecology & environmental science.
- ii. To provide students with skills necessary for ecological studies

B. Outcomes:

- Co1. Understand the relations and interactions between biotic and abiotic components of the environment.
- Co2. Understand the plant communities and ecological adaptations in plants.
- Co3: Understand the causes and consequences of a biological imbalance in the ecosystems.
- Co4. Learn about conservation of biodiversity non-conventional energy and pollution.

i. Name of the Programme: B.Sc.T.Y. (Sem.-V)

ii. Name of the course: Botany

iii. Name of Paper: Plant Physiology

iv. Paper Number: XII

➤ **Course outcomes in detail:**

A. Objectives:

- i. This course provides knowledge about the various physiological processes of the plants.
- ii. Familiarize with basic skills and techniques related to plant physiology.

B. Outcomes:

- Co1. Understand the basic principles related to various physiological functions in plant life.
- Co2. Students will be familiar with contemporary concepts in plant physiology and the physiological mechanisms controlling growth and development.
- Co3. Learn about the biomolecules and metabolites synthesized in plants.


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Parbhani

i. Name of the Programme: B.Sc.T.Y. (Sem.-V)

ii. Name of the course: Botany

iii. Name of Paper: Systematic Botany - I

iv. Paper Number: XIII

➤ **Course outcomes in detail:**

A. Objectives:

- i. To study the different types of classifications.
- ii. To study the principles and rules of ICN and taxonomical terminology.
- iii. To study the various dicot families along with their economic importance.

B. Outcomes:

- Co1. Proficiency with the basic terminology of plant morphology.
- Co2. Understand the methods of collection and preservation of plants.
- Co3. Able to identify the families of plants and their economic importance.

i. Name of the Programme: B.Sc.T.Y. (Sem.-VI)

ii. Name of the course: Botany

iii. Name of Paper: Plant Metabolism, Biochemistry & Biotechnology

iv. Paper Number: XIV

➤ **Course outcomes in detail:**

A. Objectives:

- i. Provides knowledge about different physiological processes of the plant life.
- ii. To study the classification, nomenclature and mechanism of enzyme action.
- iii. Familiarize with basic skills and techniques related to plant tissue culture.

B. Outcomes:

- Co1. Understand the physiological details of photosynthesis, respiration and nitrogen metabolism.
- Co2. Understand the fundamentals of plant tissue culture techniques.
- Co3. Realize the application and importance of plant tissue culture and transgenic plants.

i. Name of the Programme: B.Sc.T.Y. (Sem.-VI)

ii. Name of the course: Botany

iii. Name of Paper: Systematic Botany - II

iv. Paper Number: XV

➤ **Course outcomes in detail:**

A. Objectives:

- i. To study the various dicot and monocot families with their economic importance.
- ii. To study the variety of pollen grains.
- iii. To study the origin of angiosperms.

B. Outcomes:

- Co1. Able to identify the families of plants and their economic importance
- Co2. Understand the different types of pollen grains along with their importance.
- Co3. Realize the origin of angiosperms with respect to time, origin and probable ancestors.


Principal
Sharda Mahavidyalaya
Parbhani

Academic Year : 2018 - 19

i. Name of the Programme: B.Sc.F.Y. (Sem.-I)

ii. Name of the course: Botany

iii. Name of Paper: Diversity of Microbes

iv. Paper Number: I

➤ **Course outcomes in detail:**

A. Objectives:

- i. The main objective of this course is to understand the diversity of microbial world.
- ii. Provides information about the occurrence, distribution, structure and life history of viruses, bacteria, fungi and lichens.
- iii. The course will provide insights into study of microbes and distinguishing features associated with them.

B. Outcomes:

- Co1. Understand life cycle pattern of viruses, bacteria fungi and lichens.
- Co2. Understand useful and harmful activities of viruses, bacteria, fungi and lichens.
- Co3. Differentiate various groups of microbes.

i. Name of the Programme: B.Sc.F.Y. (Sem.-I)

ii. Name of the course: Botany

iii. Name of Paper: Cell and Molecular Biology

iv. Paper Number: II

➤ **Course outcomes in detail:**

A. Objectives:

- i. Provides detailed knowledge about cell and molecular biology.
- ii. Familiarize with basic skills and techniques related to cell and molecular biology.

B. Outcomes:

- Co1. Gain knowledge about cell science i.e. cell structure, organelles & chromosome.
- Co2. Understand biochemical nature of nucleic acids and their role.
- Co3. Learn the scope and importance of molecular biology.

i. Name of the Programme: B.Sc.F.Y. (Sem.-II)

ii. Name of the course: Botany

iii. Name of Paper: Diversity of Cryptogams

iv. Paper Number: III

➤ **Course outcomes in detail:**

A. Objectives:

- i. To provides knowledge about the occurrence, distribution, structure and life cycle pattern of algae, bryophytes and pteridophytes.
- ii. To give information about importance of the lower group of organisms.

B. Outcomes:

- Co1. Understand the salient features of algae, bryophytes and pteridophytes.
- Co2. Learn about diversity of lower cryptogammic plants in nature.
- Co3. Understand the economic and ecological importance of the lower plants.


Principal
Sharda Mahavidyalaya
Parbhani

i. Name of the Programme: B.Sc.F.Y. (Sem.-II)

ii. Name of the course: Botany

iii. Name of Paper: Genetics and Plant Breeding

iv. Paper Number: IV

➤ **Course outcomes in detail:**

A. Objectives:

- i. This course will enable the students to understand fundamentals of genetics and evolution.
- ii. To study the mechanism, role & importance of cell division, linkage & crossing over.
- iii. To learn various plant breeding techniques in relation to crop productivity.

B. Outcomes:

- Co1. Understand the science of heredity.
- Co2. Understand the various gene mutations and variations and their adverse effects.
- Co3. Understand the techniques of production of new superior crop varieties.

i. Name of the Programme: B.Sc.S.Y. (Sem.-III)

ii. Name of the course: Botany

iii. Name of Paper: Morphology and Taxonomy of Angiosperms

iv. Paper Number: VI

➤ **Course outcomes in detail:**

A. Objectives:

- i. To study the types of classifications- artificial, Natural and phylogenetic.
- ii. To study the principles and taxonomical terminology.
- iii. To study the various plant families and their economic importance.

B. Outcomes:

- Co1. Proficiency with the basic terminology of plant morphology.
- Co2. Able to identify the major families of plants and their economic importance.
- Co3. Understand the distinguishing features of angiospermic families.

i. Name of the Programme: B.Sc.S.Y. (Sem.-III)

ii. Name of the course: Botany

iii. Name of Paper: Histology, Anatomy and Embryology of Angiosperms

iv. Paper Number: VII

➤ **Course outcomes in detail:**

A. Objectives:

- i. This course deals the study of variety of plant tissues.
- ii. To study the internal structures of plants parts.
- iii. This paper also imparts embryology of angiospermic plant.

B. Outcomes:

- Co1. Understand the various kinds of tissue systems.
- Co2. Understand the normal and anomalous secondary growth in plants.
- Co3. Understand the basic concepts with ability to identify and distinguish various features related to anatomy and embryology.
- Co4. Understand the micro and megasporogenesis along with development in plants.


Principal
Sharda Mahavidyalaya
Parbhani

i. Name of the Programme: B.Sc.S.Y. (Sem.-IV)

ii. Name of the course: Botany

iii. Name of Paper: Gymnosperms and Paleobotany

iv. Paper Number: VIII

➤ **Course outcomes in detail:**

A. Objectives:

- i. To study the occurrence, distribution, structure and life history of gymnosperms.
- ii. To provide students with skills in Paleobotany studies.

B. Outcomes:

- i. Learn the life cycles of individuals belonging to gymnosperms.
- ii. Learn about process of fossil formation and fossils plants

i. Name of the Programme: B.Sc.S.Y. (Sem.-IV)

ii. Name of the course: Botany

iii. Name of Paper: Ecology & Environmental Biology

iv. Paper Number: IX

➤ **Course outcomes in detail:**

A. Objectives:

- i. To familiarize students with the concepts of ecology & environmental science.
- ii. To provide students with skills necessary for ecological studies

B. Outcomes:

- Co1. Understand the relations and interactions between biotic and abiotic components of the environment.
- Co2. Understand the plant communities and ecological adaptations in plants.
- Co3: Understand the causes and consequences of a biological imbalance in the ecosystems.
- Co4. Learn about conservation of biodiversity non-conventional energy and pollution.

i. Name of the Programme: B.Sc.T.Y. (Sem.-V)

ii. Name of the course: Botany

iii. Name of Paper: Plant Physiology

iv. Paper Number: XII

➤ **Course outcomes in detail:**

A. Objectives:

- i. This course provides knowledge about the various physiological processes of the plants.
- ii. Familiarize with basic skills and techniques related to plant physiology.

B. Outcomes:

- Co1. Understand the basic principles related to various physiological functions in plant life.
- Co2. Students will be familiar with contemporary concepts in plant physiology and the physiological mechanisms controlling growth and development.
- Co3. Learn about the biomolecules and metabolites synthesized in plants.


Principal
Sharda Mahavidyalaya
Parbhani

i. Name of the Programme: B.Sc.T.Y. (Sem.-V)

ii. Name of the course: Botany

iii. Name of Paper: Systematic Botany - I

iv. Paper Number: XIII

➤ **Course outcomes in detail:**

A. Objectives:

- i. To study the different types of classifications.
- ii. To study the principles and rules of ICN and taxonomical terminology.
- iii. To study the various dicot families along with their economic importance.

B. Outcomes:

- Co1. Proficiency with the basic terminology of plant morphology.
- Co2. Understand the methods of collection and preservation of plants.
- Co3. Able to identify the families of plants and their economic importance.

i. Name of the Programme: B.Sc.T.Y. (Sem.-VI)

ii. Name of the course: Botany

iii. Name of Paper: Plant Metabolism, Biochemistry & Biotechnology

iv. Paper Number: XIV

➤ **Course outcomes in detail:**

A. Objectives:

- i. This course provides knowledge about different physiological processes of the plant life.
- ii. To study the classification, nomenclature and mechanism of enzyme action.
- iii. Familiarize with basic skills and techniques related to plant tissue culture.

B. Outcomes:

- Co1. Understand the physiological details of photosynthesis, respiration and nitrogen metabolism.
- Co2. Understand the fundamentals of plant tissue culture techniques.
- Co3. Realize the application & importance of plant tissue culture & transgenic plants.

i. Name of the Programme: B.Sc.T.Y. (Sem.-VI)

ii. Name of the course: Botany

iii. Name of Paper: Systematic Botany - II

iv. Paper Number: XV

➤ **Course outcomes in detail:**

A. Objectives:

- i. To study the various dicot and monocot families with their economic importance.
- ii. To study the variety of pollen grains.
- iii. To study the origin of angiosperms.

B. Outcomes:

- Co1. Able to identify the families of plants and their economic importance
- Co2. Understand the different types of pollen grains along with their importance.
- Co3. Realize the origin of angiosperms with respect to time, origin and probable ancestors.


Principal
Sharda Mahavidyalaya
Parbhani

Academic Year : 2019 - 20

i. Name of the Programme: B.Sc.F.Y. (Sem.-I)

ii. Name of the course: Botany

iii. Name of Paper: Viruses ,Bacteria, Algae, Fungi, Lichens and Mycorrhiza

iv. Paper Number: I

➤ **Course outcomes in detail:**

A. Objectives:

- i. To study and impart knowledge about the occurrence, distribution, structure and life history of lower plants such as algae, fungi, lichens.
- ii. To instil in students an appreciation for the diversity of plant forms and structural organization that exists within plant bodies that allow plants to develop and live as integrated organisms in diverse environments.

B. Outcomes:

- Co1. Understand the morphology, structure and importance of the various organisms.
- Co2. Differentiate between various groups of Algae, Fungi, Bacteria, Viruses, Lichens and Mycorrhiza.
- Co3. Learn the life cycles of individuals belonging to Algae, Fungi, Bacteria, Viruses, Lichens and Mycorrhiza.

i. Name of the Programme: B.Sc.F.Y. (Sem.-I)

ii. Name of the course: Botany

iii. Name of Paper: Plant Ecology, Phytogeography & Environmental Biology

iv. Paper Number: II

➤ **Course outcomes in detail:**

A. Objectives:

- i. Acquainted with basic concepts of ecology, ecological factors, ecosystem and community ecology.
- ii. To provide students with skills necessary for ecological studies.

B. Outcomes:

- Co1. Able to understand the ecological principles, interactions taking place in the ecosystems and the flow of energy.
- Co2. Learn about the concept of phytogeography and its relations with other disciplines.

i. Name of the Programme: B.Sc.F.Y.(Sem.-II)

ii. Name of the course: Botany

iii. Name of Paper: Bryophytes, Pteridophytes ,Gymnosperms & Paleobotany

iv. Paper Number: III

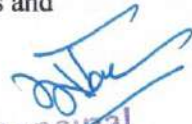
➤ **Course outcomes in detail:**

A. Objectives:

- i. To study the occurrence, distribution, structure and life history of bryophytes, pteridophytes and gymnosperms.
- ii. To provide students with skills in paleobotany studies.

B. Outcomes:

- Co1. Learn the life cycles of individuals belonging to bryophytes, pteridophytes and gymnosperms.
- Co2. Learn about process of fossil formation and fossils plants.


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i. Name of the Programme: B.Sc.F.Y.(Sem.-II)

ii. Name of the course: Botany

iii. Name of Paper: Taxonomy of Angiosperms

iv. Paper Number: IV

➤ **Course outcomes in detail:**

A. Objectives:

- i. To study the types of classifications- artificial, Natural and phylogenetic
- ii. To study the principles and rules of ICN and taxonomical terminology
- iii. To study the various plant families and their economic importance

B. Outcomes:

- i. Proficiency with the basic terminology of plant morphology
- ii. Able to identify the major families of plants and their economic importance
- iii. Understand the methods of collecting and preserving plants

i. Name of the Programme: B.Sc.S.Y. (Sem.-III)

ii. Name of the course: Botany

iii. Name of Paper: Morphology and Taxonomy of Angiosperms

iv. Paper Number: VI

➤ **Course outcomes in detail:**

A. Objectives:

- i. To study the types of classifications- artificial, Natural and phylogenetic.
- ii. To study the principles and taxonomical terminology.
- iii. To study the various plant families and their economic importance.

B. Outcomes:

- Co1. Proficiency with the basic terminology of plant morphology.
- Co2. Able to identify the major families of plants and their economic importance.
- Co3. Understand the distinguishing features of angiospermic families.

i. Name of the Programme: B.Sc.S.Y. (Sem.-III)

ii. Name of the course: Botany

iii. Name of Paper: Histology, Anatomy and Embryology of Angiosperms

iv. Paper Number: VII

➤ **Course outcomes in detail:**

A. Objectives:

- i. This course deals the study of variety of plant tissues.
- ii. To study the internal structures of plants parts.
- iii. This paper also imparts embryology of angiospermic plant.

B. Outcomes:

- Co1. Understand the various kinds of tissue systems.
- Co2. Understand the normal and anomalous secondary growth in plants.
- Co3. Understand the basic concepts with ability to identify and distinguish various features related to anatomy and embryology.
- Co4. Understand the micro and megasporogenesis along with development in plants.


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- i. Name of the Programme:** B.Sc.S.Y. (Sem.-IV)
ii. Name of the course: Botany
iii. Name of Paper: Gymnosperms and Paleobotany
iv. Paper Number: VIII

➤ **Course outcomes in detail:**

A. Objectives:

- i. To study the occurrence, distribution, structure and life history of gymnosperms.
- ii. To provide students with skills in Paleobotany studies.

B. Outcomes:

- i. Learn the life cycles of individuals belonging to gymnosperms.
- ii. Learn about process of fossil formation and fossils plants

- i. Name of the Programme:** B.Sc.S.Y. (Sem.-IV)
ii. Name of the course: Botany
iii. Name of Paper: Ecology & Environmental Biology
iv. Paper Number: IX

➤ **Course outcomes in detail:**

A. Objectives:

- i. To familiarize students with the concepts of ecology & environmental science.
- ii. To provide students with skills necessary for ecological studies

B. Outcomes:

- Co1. Understand the relations and interactions between biotic and abiotic components of the environment.
- Co2. Understand the plant communities and ecological adaptations in plants.
- Co3: Understand the causes and consequences of a biological imbalance in the ecosystems.
- Co4. Learn about conservation of biodiversity non-conventional energy and pollution.

- i. Name of the Programme:** B.Sc.T.Y. (Sem.-V)
ii. Name of the course: Botany
iii. Name of Paper: Plant Physiology
iv. Paper Number: XII

➤ **Course outcomes in detail:**

A. Objectives:

- i. This course provides knowledge about the various physiological processes of the plants.
- ii. Familiarize with basic skills and techniques related to plant physiology.

B. Outcomes:

- Co1. Understand the basic principles related to various physiological functions in plant life.
- Co2. Students will be familiar with contemporary concepts in plant physiology and the physiological mechanisms controlling growth and development.
- Co3. Learn about the biomolecules and metabolites synthesized in plants.


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i. Name of the Programme: B.Sc.T.Y. (Sem.-V)

ii. Name of the course: Botany

iii. Name of Paper: Systematic Botany - I

iv. Paper Number: XIII

➤ **Course outcomes in detail:**

A. Objectives:

- i. To study the different types of classifications.
- ii. To study the principles and rules of ICN and taxonomical terminology.
- iii. To study the various dicot families along with their economic importance.

B. Outcomes:

- Co1. Proficiency with the basic terminology of plant morphology.
- Co2. Understand the methods of collection and preservation of plants.
- Co3. Able to identify the families of plants and their economic importance.

i. Name of the Programme: B.Sc.T.Y. (Sem.-VI)

ii. Name of the course: Botany

iii. Name of Paper: Plant Metabolism, Biochemistry & Biotechnology

iv. Paper Number: XIV

➤ **Course outcomes in detail:**

A. Objectives:

- i. This course provides knowledge about different physiological processes of the plant life.
- ii. This course also discusses about the classification, nomenclature and mechanism of enzyme action.
- iii. Familiarize with basic skills and techniques related to plant tissue culture.

B. Outcomes:

- Co1. Understand the physiological details of photosynthesis, respiration and nitrogen metabolism.
- Co2. Understand the fundamentals of plant tissue culture techniques.
- Co3. Realize the application and importance of plant tissue culture and transgenic plants.

i. Name of the Programme: B.Sc.T.Y. (Sem.-VI)

ii. Name of the course: Botany

iii. Name of Paper: Systematic Botany - II

iv. Paper Number: XV


➤ **Course outcomes in detail:**

A. Objectives:

- i. To study the various dicot and monocot families along with their economic importance.
- ii. To study the variety of pollen grains.
- iii. To study the origin of angiosperms.

B. Outcomes:

- Co1. Able to identify the families of plants and their economic importance
- Co2. Understand the different types of pollengrains along with their importance.
- Co3. Realize the origin of angiosperms with respect to time, origin and probable ancestors.


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