

Vinayak Vidnyan Mahavidyalaya, Nandgaon Khandeswar

Study Materials

Department Of Botany

B.Sc.I Semester I

| Sr. No. | Syllabus | Teaching Material Link |
|--|---|--|
| 1 | Syllabus Introduction | https://classroom.google.com/c/MTE5MzE00TAzN |
| | Unit I | |
| | 1.1 Cyanobacteria and its impact on origin of | https://classroom.google.com/c/MTE5MzE00TAzN |
| | 1.2 Introduction to Plant Kingdom: Cryptogams | https://classroom.google.com/c/MTE5MzE00TAzN |
| | 1.3 Diversity of plants with respect to habitat, | https://classroom.google.com/c/MTE5MzE00TAzN |
| | 1.4 General Account of Viruses and structure | https://classroom.google.com/c/MTE5MzE00TAzN |
| | 1.4 Structure of TMV | https://classroom.google.com/c/MTE5MzE00TAzN |
| | 1.4 Structure of HIV | https://classroom.google.com/c/MTE5MzE00TAzN |
| 2 | Unit II | |
| | 2.2. General characters of algae with reference to Habitat, Thallus | https://drive.google.com/file/d/1Wtn2qIQirLh3NS |
| | 2.3.1. Chlorophyta - Oedogonium | https://drive.google.com/file/d/1QDU6RN8Mba8 https://drive.google.com/file/d/1V0r2Mi8JYYM-Xe |
| | 2.3.3. Phaeophyta – Sargassum (Thallus structure and reproduction) | https://drive.google.com/file/d/13QkOIVVpw4ljAl https://drive.google.com/file/d/1_rul_a431fC5j7N |
| | 2.3.4. Rhodophyta – Batrachospermum | https://drive.google.com/file/d/1URliKhTyF-ezxUR |
| | 2.3.2. Charophyta – Chara (Thallus structure and | https://drive.google.com/file/d/1gvzMO69wM9r-E https://drive.google.com/file/d/1h_7wvOY2FzORB |
| 3 | Unit III | |
| | Fungi Introduction | https://classroom.google.com/c/MTE5MzE00TAzN |
| | Fungi Introduction | https://classroom.google.com/c/MTE5MzE00TAzN |
| | 3.2.1. Mastigomycotina : Albugo (Cystopus) | https://classroom.google.com/c/MTE5MzE00TAzN |
| | 3.2.1. Mastigomycotina : Albugo Reproduction | https://classroom.google.com/c/MTE5MzE00TAzN |
| | 3.2.2. Ascomycotina : General characteristics | https://classroom.google.com/c/MTE5MzE00TAzN |
| | 3.2.2. Ascomycotina : Aspergillus General charac | https://classroom.google.com/c/MTE5MzE00TAzN |
| 3.2.2. Ascomycotina : Aspergillus reproduction | https://classroom.google.com/c/MTE5MzE00TAzN | |
| 4 | Unit Iv | |
| | GENERAL CHARACTERS OF BRYOPHYTA | https://drive.google.com/file/d/13OfrBPVN3D1-Fk |
| | CLASSIFICATION OF BRYOPHYTES | https://drive.google.com/file/d/1Flp26Zy6hKZRQS |
| | 1.2.1. Hepaticopsida – Marchantia | https://drive.google.com/file/d/19UIgpQL_jLJ753s https://drive.google.com/file/d/17g-J-d6nVZcKIDa |
| | 1.2.2. Bryopsida – Funaria | https://drive.google.com/file/d/1HpnBKW_eEQXt https://drive.google.com/file/d/1Bv5uEHVYQFDh7 |
| | BRYOLOGIST OF INDIA | https://drive.google.com/file/d/1okaajCD0GzWVs |
| 5 | Unit VI | |
| | Economic Importance of Algae | https://drive.google.com/file/d/132Yf7mJEr0JlrKN |
| | Economic Importance of Fungi | https://drive.google.com/file/d/1dZCG1v7BvZqO7 |
| | TMV | https://drive.google.com/file/d/1woRlFGLL_Ka7-kl |

TIKKA DISEASE OF GROUND NUT

<https://drive.google.com/file/d/17srZx7FzBjKtvlhn>

| Format | Credit |
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| Video | Mr.S.V.Hiwarale |
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Vinayak Vidnyan Mahavidyalaya, Nandgaon Khandeswar

Study Materials

Department Of Botany

B.Sc.I Semester II

| Sr. No. | Syllabus | Teaching Material Link |
|---------|---|---|
| 1 | UNIT-IV : Morphology | |
| | 4.1. Inflorescences – Types: Racemose, Cymose and Special. | https://drive.google.com/file/d/16Mh |
| | 4.2. Flower – Flower as modified shoot; Structure of flower – Calyx, Corolla, Androecium and Gynoecium. Placentation; Types of Pollination. | https://classroom.google.com/c/MTE5 |
| 2 | UNIT-V : Morphology and Utilization of Plants | |
| | 5.1. Fruits – Morphological types | https://drive.google.com/file/d/1IHea |
| | 5.2. Utilization of Plants 5.2.1. Food Plants – Wheat, Potato – Morphology, varieties and economic importance. 5.2.2. Fiber Plant – Morphology, varieties and economic importance of Cotton. 5.2.3. Oil yielding Plant – Morphology, Varieties and economic importance of Ground nut. | https://drive.google.com/file/d/1a2iG |
| 3 | Unit VI Utilization of Plants | |
| | 6.1. Spices–General account and economic importance of Black pepper, Clove, Cinnamon and Cardamom | https://drive.google.com/file/d/1a2iG |

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| VIDEO | Dr.Suchita P. Khodke |
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| VIDEO | Dr.Suchita P. Khodke |

| Sr. No. | Syllabus |
|---------|---|
| 1 | UNIT I : Angiosperm Systematics and Biodiversity |
| | Introduction |
| | 1.1 Angiosperms: Origin and Evolution introduction |
| | 1.1 Angiosperms: Origin and Evolution (Pteridospermean Theory) |
| | 1.1 Angiosperms: Origin and Evolution (Bennititalean Theory) |
| | 1.3 Herbarium – Concept & significance, Royal Botanical Garden, Kolkata |
| | 1.4 Concept of biodiversity, Ex situ and In situ conservati |
| | 1.5 Concept & importance of Biodiversity. |
| | 1.5 Importance of Biodiversity. |
| 2 | UNIT III: Angiosperm Systematics |
| | 3.1 Systematic studies & economic importance of |
| | following Families Dicotyledons (Gamopetalae): |
| | Asteraceae, Asclepiadaceae, Apocynaceae, Solanaceae, |
| | 3.2 Dicotyledons (Monoclamydeae): Euphorbiaceae. |
| | 3.3 Monocotyledons: Liliaceae, Poaceae. |
| 3 | UNIT IV: Anatomy |
| | 4.1 Types of Tissues: Meristematic – Types of |
| | meristems Permanent – Simple and complex |
| | 4.2 Characteristics of growth rings, Sapwood and |
| | heartwood. |
| | 4.3 Anatomy of root: Primary structure in dicot and |
| | monocot root, normal secondary growth in dicot root. |
| 4 | UNIT V: Anatomy |
| | 5.1 Anatomy of stem: Primary structure in monocot |
| | and dicot stem, normal secondary growth in dicot stem |
| | 5.2 Anomalies in primary structure in Boerhavia stem, |
| | secondary structure in Bignonia and Dracaena stem. |
| | 5.3 Leaf Anatomy: Internal structure in Nerium and |
| | Maize leaf. |
| 5 | UNIT VI : Embryology |
| | 5.1 Microsporangium, microsporogenesis, |
| | development of male gametophyte. |

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| | 5.2 Megasporangium |
| | 5.2 Types of ovules |
| | 5.2 Megasporogenesis |
| | 5.3 Double fertilization and triple fusion |

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Study Materials

Department Of Botany

B.Sc.II Semester III

| Teaching Material Link | Format | Credit |
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| https://classroom.google.com/c/MTE5MzA3NjkyNDEz/r | VIDEO | Mr.S.V.Hiwarale |
| https://classroom.google.com/c/MTE5MzA3NjkyNDEz/r | VIDEO | Mr.S.V.Hiwarale |
| https://classroom.google.com/c/MTE5MzA3NjkyNDEz/r | VIDEO | Mr.S.V.Hiwarale |
| https://classroom.google.com/c/MTE5MzA3NjkyNDEz/r | VIDEO | Mr.S.V.Hiwarale |
| https://classroom.google.com/c/MTE5MzA3NjkyNDEz/r | VIDEO | Mr.S.V.Hiwarale |
| https://classroom.google.com/c/MTE5MzA3NjkyNDEz/r | VIDEO | Mr.S.V.Hiwarale |
| https://classroom.google.com/c/MTE5MzA3NjkyNDEz/r | VIDEO | Mr.S.V.Hiwarale |
| https://classroom.google.com/c/MTE5MzA3NjkyNDEz/r | VIDEO | Mr.S.V.Hiwarale |
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| FAMILY SOLNACEAE- https://drive.google.com/file/d/1v | VIDEO | Dr.Suchita Khodke |
| FAMILY VERBENACEAE- https://drive.google.com/file/d/ | VIDEO | Dr.Suchita Khodke |
| | VIDEO | Dr.Suchita Khodke |
| https://drive.google.com/file/d/1KW9QZxqzxvh92QCdM | VIDEO | Dr.Suchita Khodke |
| https://drive.google.com/file/d/1-rtPCqi6l05nwtY4VFU | VIDEO | Dr.Suchita Khodke |
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| https://drive.google.com/file/d/1EcpyRmwpmNNmJpN8 | VIDEO | Dr.Suchita Khodke |
| https://drive.google.com/file/d/1V377S44DhW1sXJH1G | VIDEO | Dr.Suchita Khodke |
| https://drive.google.com/file/d/1IUSUFaaw74M9WP5ue | VIDEO | Dr.Suchita Khodke |
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| https://drive.google.com/file/d/1W2A4buubgFREUPy0S | VIDEO | Dr.Suchita Khodke |
| https://drive.google.com/file/d/1mG3CvFz8vyYzyvnsu | VIDEO | Dr.Suchita Khodke |
| https://drive.google.com/file/d/1-ScOy7Wxz0abL3aVwv | VIDEO | Dr.Suchita Khodke |
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| https://classroom.google.com/c/MTE5MzA3NjkyNDEz/r | VIDEO | Mr.S.V.Hiwarale |

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| https://classroom.google.com/c/MTE5MzA3NjkyNDEz/r | VIDEO | Mr.S.V.Hiwarale |

| Sr. No. | Syllabus |
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| 1 | Unit-II : Cell Biology Structure and functions of |
| | 2.3 Vacuole |
| | 2.6 Mitochondria |
| | 2.7 Cell Cycle Mitosis |

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Study Materials

Department Of Botany

B.Sc.II Semester IV

| Teaching Material Link | Format | Credit |
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| | | |
| https://classroom.google.com/c/MTE5MzA3NjkyNDEz | Video | Mr.S.V.Hiwarale |
| https://drive.google.com/file/d/1KxyfAS03_5uGyuEN66e | Video | Mr.S.V.Hiwarale |
| https://drive.google.com/file/d/1VpLTpK_xOxz5cZvKD9EI | Video | Mr.S.V.Hiwarale |

| Sr. No. | Syllabus | Teaching Material Link |
|---------|--|---|
| 1 | Unit - I: Plant Water Relations | |
| | Introduction of syllabus | https://classroom.google.com/c/MTE5MzE2ODYxOTQ |
| | 1.1 Plant Water relation | https://classroom.google.com/c/MTE5MzE2ODYxOTQ |
| | 1.1 Diffusion | https://classroom.google.com/c/MTE5MzE2ODYxOTQ |
| | 1.1 Osmosis | https://classroom.google.com/c/MTE5MzE2ODYxOTQ |
| 2 | Unit - II: Metabolism | |
| | 2.1 Photosynthesis - Introduction, Role of Light, Photosynthetic Apparatus and Pigments, Two Pigment Systems, Photophosphorylation, C3 and C4 cycle, CAM Pathway. | https://classroom.google.com/c/MTE5MzE2ODYxOTQ |
| | 2.2 Respiration - Introduction, Mitochondria as a Respiratory centre, Types of Respiration - Aerobic and Anaerobic, Mechanism of aerobic respiration- Glycolysis, Krebs cycle, Electron transport system and | https://classroom.google.com/c/MTE5MzE2ODYxOTQ |
| 3 | Unit - III: Metabolism and growth | |
| | 3.1 Nitrogen Metabolism | https://classroom.google.com/c/MTE5MzE2ODYxOTQ0/m/MjQ4MTI4MzA0Nm5/details |
| | Source of Nitrogen | https://classroom.google.com/c/MTE5MzE2ODYxOTQ0/m/MjQ1NjY4OTg3NTc2/details |
| | Symbiotic nitrogen | https://classroom.google.com/c/MTE5MzE2ODYxOTQ0/m/MjQ5NjkyOTM4NTU0/details |
| | Non Symbiotic Activity | https://classroom.google.com/c/MTE5MzE2ODYxOTQ0/m/MjQ5Njg2OTM3MTIx/details |
| 4 | Unit – V: Ecology and Environment: | |
| | 5.2 Ecological factors- Climatic- Light, Temperature | https://classroom.google.com/c/MTE5MzE2ODYxOTQ |
| | 5.2 effects of Light on plants | https://classroom.google.com/c/MTE5MzE2ODYxOTQ |
| | 5.3 Atmosphere and its composition. | https://classroom.google.com/c/MTE5MzE2ODYxOTQ |
| | 5.4 Edaphic factor- Process of soil formation, soil profile, soil biota and their role. | https://classroom.google.com/c/MTE5MzE2ODYxOTQ |
| | 5.4 soil profile | https://classroom.google.com/c/MTE5MzE2ODYxOTQ |
| 5 | Unit VI | |
| | 6.1 Population Ecology- Natalty and Mortality, Community characteristics – Frequency, Density and Abundance | https://drive.google.com/file/d/1jVpvgvJNa7zj5RZ78I |
| | 6.2 Ecological Succession - Hydrosere and Xerosere | https://drive.google.com/file/d/1uW6nKJILAjHKKHo8E |
| | 6.3 Ecosystem – Definition, Structure and Function | https://drive.google.com/file/d/1u8i5VRjkN72lLgzlzyh |

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| | 6.4 Types of Ecosystem- Pond ecosystem, Desert ecosystem. | https://drive.google.com/file/d/1Zc4XzFhfRQ_MTma |
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Vinayak Vidnyan Mahavidyalaya, Nandgaon Khandeswar

Study Materials

Department Of Botany

B.Sc.III Semester VI

| Sr. No. | Syllabus | Teaching Material Link |
|---------|---|---|
| 1 | Unit-V : Plant Tissue Culture - | |
| | 5.2 Laboratory Requirement – Infrastructure, Instruments (laminar air flow, autoclave, growth chamber), Culture Media (MS Media), Growth Hormone (Auxin, Cytokinin and Gibberellins) Sterilization Techniques | https://drive.google.com/file/d/1gij7q_lgRH |
| | 5.3 Tissue Culture Technique - Cellular totipotency, differentiation and morphogenesis; Callus Culture; Micro propagation | https://drive.google.com/file/d/13B6h7yP2T |
| 2 | Unit-VI : Applications of Biotechnology - | |
| | Synthetic seed | https://classroom.google.com/c/MTE5MzE2 |
| | 6.3 Cryopreservation | https://classroom.google.com/c/MTE5MzE2 |

| Format | Credit |
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