

GENERIC ELECTIVE

PAPER - I Biodiversity (Microbes, Algae, Fungi and Archeponiate)
(Credits : Theory - 4, Practical - 2)

THEORY

Lectures : 60

Full Marks:60

Time: 03 Hrs.

In all eight questions of equal value (15 marks each) will be set out of which examinee shall have to answer four questions. Q.No 4 will be compulsory, consisting of five very short answer type questions each of three marks, covering the entire syllabus.

MICROBES

- 10

Viruses - Discovery, general structure, & nature

Bacteria - Discovery, general characteristics, cell structure, and Economic Importance.

ALGAE

- 10

General characteristics, Morphology and life cycles of Nostoc, chlamydomonas, chara, Batrachospermum

FUNGI

- 10

General characteristics, Morphology and life cycles of albigo, puccinia, alternaria, Lichens- General account.

BRYOPHYTES

- 10

General characteristics, Morphology, anatomy and reproduction of Marchantia and Funaria.

Anthoceros

Seyan
18/17

(11)

PTERIDOPHYTES

- General characteristics. Morphology, anatomy and reproduction of Selaginella. - 10
- Pteris.
- Stealer evolution.

GYMNOSPERMS

- General characteristics. Morphology, anatomy and reproduction of Pinus. & its Economic Importance - 10

PRACTICAL

Full Marks : ~~40~~ 20

Time: 06 hrs

- | | | | |
|----|-------------------------------------------------------------------------------------------------------|---------------------------|-----|
| 1. | Models of Viruses | - 2 | |
| 2. | Types of Bacteria form slides/ photographs/ Slides | - 2 - 5 | |
| 3. | Study of vegetative and reproductive structures by preparation of temporary slides from 2 to 6 units. | | |
| | | Two slide - 2 1/2 + 2 1/2 | - 9 |
| 4. | Spotting | - 5 | - 5 |
| 5. | Record | - 4 | - 4 |
| 6. | Viva voce | - 2 | - 2 |

2
2
5

① Prepare a temporary slide of any one genera included in the syllabus. - 5

- Chara or Puccinia or Albugo. or Botrychospiculum or Marchantia. - 03.

② Structure of Bacteria ~~By~~ By photograph or TM. - 03.

③ Spotting - ⑤ 4.
- ⑤ 2
- ⑤ 5.

Page-48
class record

viva - 02

Seyan
1877

sem-II

(11)

GENERIC ELECTIVE
PAPER - II, PLANT ECOLOGY AND TAXONOMY
(Credits : Theory - 4, Practical - 2)

THEORY
Lectures : 60

Full Marks:60

Time: 03 Hrs.

In all eight questions of equal value (15 marks each) will be set out of which examinee shall have to answer **four** questions. Q.No.1 will be compulsory, consisting of five very short answer type questions each of three marks, covering the entire syllabus.

ECOLOGY

-25

1. Introduction -
2. Ecological adaptation - Hydrophytes Xerophytes
3. Plant communities - succession - process & types
4. Eco-system Structure, types, - pond, Grassland, Energy flow, Trophic organisation, Food chain, Food web, Ecological pyramid.
5. Pollution - Air & Water - Cause & Control.

TAXONOMY

-35

1. Introduction, Identification, classification, nomenclature
2. Taxonomic aids - herbarium & Botanical Gardens.
3. Taxonomic hierarchy
4. Principles & rules of ICBN
5. Classification - Bentham & Hooker And Hutchinson's System
6. Study of following families
Apocynaceae, Solanaceae, Poaceae.

Sem
18/7

20

PRACTICAL

Full Marks : 40

Time: 06 hrs

1. Study of morphological adaptations of hydrophytes and xerophytes. - 3
2. Determination of minimal quadrat size for the study of herbaceous vegetation in the college campus by species area curve method. - 6
3. Study of vegetative and floral characters of the families included in syllabus with floral diagram, floral formula and systematic position.
4. Spotting - 5
5. Record - 4
6. Viva voce - 2

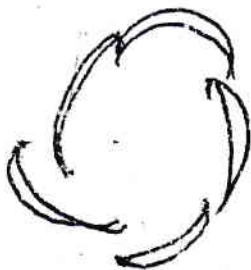
FULL MARKS. — 20.

- ① Family description — 6
- ② Anatomy Hydrophytes / Xerophytes 4
- ③ Spotting — 5
- ④ Record — 3 ✓
- ⑤ Viva-voce — 2

Mid Sem Practical

Family

OR anatomical adaptation of Hydrophytes or Xerophytes



GENERIC ELECTIVE

PAPER - III PLANT Anatomy Embryology, Economic Botany

(Credits : Theory - 4, Practical - 2)

Sem
1817

THEORY

Lectures : 60

Full Marks:60

Time: 03 Hrs.

In all **eight questions** of equal value (15 marks each) will be set out of which examinee shall have to answer **four questions**. Q.No.1 will be compulsory, consisting of five very short answer type questions each of three marks, covering the entire syllabus.

ANATOMY

- 20

1. Meristematic Tissues - apical, lateral, Intercalary Meristem & simple complex tissues
2. Anomalous secondary growth in Boerhaavia & Dracaena

EMBRYOLOGY

- 22

1. Outlines of life cycle of an angiospermic plant
2. Types of ovules
3. Types of Embryo Sacs. Development of Polygonum type
4. Double Fertilization
5. Endosperm & Polyembryony

① Wheat - Triticum aestivum
Poaceae

② Gram - Cicer arietinum
Fabaceae (papilionaceae)

Helianthus annuus

③ Sunflower - Asteraceae
(Compositae)

④ Mustard - Brassica campestris
- Brassicaceae (Cruciferae)

⑤ Cotton - Gossypium herbaceum
Malvaceae

⑥ Seesham - Dalbergia 2200

ECONOMIC & BOTANY

Morphology & uses of following

1. Cereal - Wheat
2. Legumes - Gram
3. Fibre - Cotton
4. Timber - Seeshum, Teak
5. Oil - Mustard, Sunflower
6. Medicinal - Tulsi, Neem & Amla

1. Identification of Tissues (parenchyma, collenchymas and sclerenchyma)
2. Temporary mounts of section of anatomical specimens - 4
3. Embryo dissection / Photograph of ovules - 2
4. Plant identification & uses - 3
5. Spotting - 5
6. Record - 4
7. Viva voce - 2

Sem III

Final

- ① T.S. of Boerhaavia stem - 5
- ② Structure of embryo sac / ovule - 2
- ③ Spotting - 5
 - (a)
 - (b)
 - (c)
 - (d)
 - (e)
- 4 - Viva - 3
- 5 - Record - 5

Internal Practical Exam - Sem III

- ① Structure of Embryo sac with labelling.



- ② (a) Tulsi - Bot. name
- (b) Cotton - Family name & uses. } - 02

Gen
TST

Gen
GENERIC ELECTIVE

PLANT PHYSIOLOGY, CYTOLOGY & GENETICS, BIOTECHNOLOGY

(Credits : Theory - 4, Practical -2)

THEORY

Lectures : 60

Full Marks:60

Time: 03 Hrs.

In all eight questions of equal value (15 marks each) will be set-out of which examinee shall have to answer four questions. Q.No.1 will be compulsory, consisting of five very short answer type questions each of three marks, covering the entire syllabus.

1. Transpiration - Mechanism & significance
2. Ascent of Sap - Root Pressure transpiration pull, theory
3. Photosynthesis - Photophosphorylation, C₃, C₄ Cycle
4. Respiration - Glycolysis, TCA Cycle.
5. Growth Hormone - Auxin, Gibberelline
6. Structure of Cytoplasmic Cell Organelles - Mitochondria, Chloroplast, Ribosome
7. Cell Division - Mitosis, Meiosis.
8. Principles of inheritance, Mendel's Law
9. Complimentary Genes & epistasis
10. Gene - Mutation & Polyploidy
11. Plant Tissue Culture - History, Requirement, Technique & Application

PRACTICAL

3 hour

Full Marks : ~~40~~ 20

Time: 06 hr

- | | | | |
|----|--------------------------------------------------------|----------|-----|
| 1. | To perform physiological Experiment of syllabus | <i>6</i> | - 4 |
| 2. | Cytological Slide preparation <i>study, study</i> | <i>3</i> | - 4 |
| 3. | <u>Photographs from Bio- technology</u> <i>related</i> | <i>2</i> | - 2 |
| 4. | Spotting | <i>4</i> | - 5 |
| 5. | Record | <i>3</i> | - 4 |
| 6. | Viva voce | <i>2</i> | - 2 |

- | | | | |
|---|-----------------------|----------|----------------------------------------------------------------------------------|
| ① | Physiology experiment | <i>6</i> | |
| ② | Mitosis metaphase | <i>4</i> | <i>mitochondria structure
(metaphase I of meiosis)
or
Anaphase I</i> |
| ③ | Spotting | <i>4</i> | |
| ④ | Record | <i>4</i> | |
| ⑤ | viva | <i>2</i> | |