



**Shri Sangameshwar Education Society, Solapur**

Kannada Linguistic Minority Institute

**Sangameshwar College, Solapur**

**Autonomous**

The Written Test – the First Phase of the Selection Process  
for the Post(s) of Assistant Professor

## **Syllabus**

### **Subject: Botany**

---

#### **Unit 1: Microbiology, and Mycology**

Microbes: - Introduction and history of microbiology,

Viruses: - General characters, structure and economic importance of viruses.

Bacteria: General characters, structure and Economic importance. Study of Rhizopus- Occurrence, Thallus organization, classification, Life cycle and Economic importance Study of Trichoderma- Occurrence, Thallus organization, classification, Life cycle and Economic importance

#### **Unit 2: Archegoniate**

General characters of bryophytes, Pteridophyte and Gymnosperms, Study of Riccia- Occurrence, classification, thallus structure, and Economic importance General characters and Economic importance of Pteridophyte, Study of Sellaginella- Occurrence, and Economic importance

#### **Unit 3: Paleobotany and Taxonomy of Angiosperms:**

Introduction, Definition, Scope and importance, Geological time scale, Process of Fossilization, Concept of Nomenclature, Binomial nomenclature of plants, Importance of Binomial nomenclature, Bentham and Hooker system of classification, Merits and Demerits

#### **Unit 4: Paleobotany and Taxonomy of Angiosperms:**

Theories of structural development: Apical cell theory, Histogen theory, Tunica Corpus theory, Structure and function of Complex tissue Xylem, Phloem

#### **Unit 5: Plant Physiology:**

Photosynthesis: Introduction. Photosynthetic Apparatus, Photosynthetic Pigments (Chl a, b, xanthophylls, carotene); Respiration: Structure of Mitochondrion

**Unit 6: Organic fertilizer:**

Introduction Types of Organic fertilizer FYM, Vermicompost- Procedure, Significance of vermicompost, Limitations of vermicompost, Today's need of organic fertilizer

**Unit 7: Plant Systematics and Genetics**

Inflorescence- Racemose types, Cymose types, Specialized Outline of APG III system of classification of Angiosperm Phylogeny Group, Merits and Demerits of APG III system of classification, Mendel's Laws of Inheritance: Law of dominance, Law of segregation, Law of independent Assortment, back cross, Test cross

**Unit 8: Cell biology and Plant Biotechnology:**

Ultra structure and function of Mitochondria, Chloroplast, Nucleus, ER, Golgi body Recombinant DNA Technology, Introduction and principles, Enzymes involved in recombinant DNA Technology, Vectors, Southern and northern blotting technique, DNA finger printing, PCR, DNA libraries. Methods of Gene Transfer Introduction, Marker and Reporter genes, Methods of gene delivery-Physical, Chemical and Biological

**Unit 9: Teaching Methodology and NAAC**