CSS COURSE SYLLABUS

Botany

100 marks · one paper · Group V - Society, Environment & Literature

Complete Botany syllabus. The full official FPSC syllabus this course covers, section by section.

1 Algae, Fungi and Bryophytes

- Phycology: Distribution, Classification, Structure, Life History and Economic importance of the main groups of Algae.
- Mycology and Plant Pathology: Structure, Reproduction, Classification and Economic importance of the main groups of Fungi. Diseases of economically important crops and general principles of their control
- Bryology: Structure and reproduction of bryophytes, Evolution of Gametophyte and Sporophyte.

2 Peteridophyta and Gymnosperms

- General account with special reference to structure, life history and affinities of both Pteridophytes and Gymnosperms. Ontogeny and structure of seed, classification and economic importance of Gymnosperms.

3 Anatomy and Embryology

- Primary and secondary tissues. Meristems. Secondary growth in dicot stem.
- Anatomy of leaf, stem and root.
- Micro and megasporogenesis, pollination mechanism, fertilization, development of Embryo and Endosperm, Seed dispersal.

4 Taxonomy of Angiosperms

- Systems of classification. Rules of botanical nomenclature. Concepts of speciation. Introduction to modern trends in plant taxonomy: bio-systematic, chemotaxonomy and numerical taxonomy. General characters and economic importance of common angiosperm families.

5 Plant Physiology

- Plant water relations, Osmotic Quantities, component potentials of water and their role in transport, water absorption by roots, transpiration. Role of essential mineral elements and their uptake. Plant hormones. Photoperiodism, Vernalization.
- Dormancy and Seed germination.Enzymes.
- Photosynthesis: Plant pigments, Light reaction, CO2 fixation, Mechanism of photophosphorylation.
- Respiration: Glycolysis, Kreb cycle, Mechanism of oxidative phosphorylation.

6 Ecology

- Influence of climatic, edaphic and biotic factors on plant growth. Vegetation sampling techniques. Concepts of ecosystems and their productivity, ecological energetics, Pyramids (of numbers, biomass and energy), trophic levels, food chains and food webs. Biogeochemical cycles (Hydrological and Nitrogen).
- Succession.

CSSPrep.AI cssprep.ai WhatsApp +92 323 7805323

- Causes and reclamation of soil salinity and water logging in Pakistan. Soil erosion, its control and soil conservation methods. Deforestation. Biodiversity conservation.Pollution.

7 Cytology

- Cell cycle, cellular morphology, chemistry of cell wall and cell membrane, cell to cell communication, plant tissue and cell culture, cell senescence and cell death.
- Ultra-structure of various cell organelles: Mitochondria, Golgi bodies, Endoplasmic reticulum, Plastids, Ribosomes, Glyoxysomes, Vaculoes, Nucleus.

8 Genetics

- Mendelian Genetics, Multiple Alleles, Polygenic inheritance, Gene interaction, Epistasis and pleiotropy, Sex-linked inheritance, Chromosomal aberrations, Mutations, DNA repair.

9 Evolution

- Introduction of Evolution, Evolutionary history, Evolution of life, Convergent Evolution, Divergent Evolution, Parallel Evolution and Natural selection

10 Molecular Biology

- Nucleic acids, DNA as hereditary material, DNA replication, Transcription, Genetic code, Protein synthesis, Genetic engineering and its application, Genetically Modified Organisms (GMO).

Source: Revised Syllabi for CSS Competitive Examination, CE-2016 (updated 7 July 2015), Federal Public Service Commission.

Practise answers on this syllabus and get them marked out of 20 at **cssprep.ai**. Questions? WhatsApp **+92 323 7805323**.

CSSPrep.AI
cssprep.ai
WhatsApp +92 323 7805323