Taxonomy of angiosperms

BOT201

UNIT-I

origin and envolution of angiosperms,general principles of angiosperm phylogeny,evolutionary trends in angiosperms,ecads and ecotypes,concept of taxonomic characters

UNIT-II

international code of botanical nomenclature(icbn),some important rules of nomenclature ,principles of taxonomic characters,merits and demerits of major systems of classification .

UNIT-III

Systems of classification,modern trends in plant taxonomy,taxonomic evidence: morphology,anatomy,palynology,embryology,cytology,

UNIT-IV

herbarium and botanical garden,purpose of modern herbarium,techniques of herbarium,description of flowering plant,major Indian herbariaumand botanical gardens,relevance of taxonomy to conserve conservation,sustainable utilization of bio-resourec and ecosystem research.

UNIT-V

origin and evolution of monocotyledon and dicotyledon flower,salient features,floral diversity of family and phylogeny of the orders; ranales,tubiflorae,glumiflorae,amentiferae,centrospermae.

Suggested Readings:

1. EJW Barrington-General & comparative Endoctrinology-Oxford, Claredon Press

2. R.H. Williams-Text Book of Endocrinology-W.B. Saunders

3. C.R. Martin- Endocrine Physiology-Oxford University Press.

4. Molecular CellBiology-J. Darnell, H. Lodish and D. Baltimore-Scientific American Book USA

Plant physiology

BOT202

UNIT-I

water ; structure and properties of water ,waterabsorption and conduction,loss of water from plants,stomatal physiology. Nutrients and their functions,active and passive absorption of waterand nutrients .

UNIT-II

signal transduction: overview,receptors and G – Proteins, phospholipid signaling,role of cyclic nucleotides . diversity in protein kinases and phosphatases, specific signaling mechanism,eg- two component sensor system in bacteria and plants,sensory photo receptors.

UNIT-III

Photosynthesis: photosynthetic apparatus, pigments and light harvesting complexes, photooxidation of water,calvin cycle, photorespiration,CAM,C3 AND C4 Cycle and its significance.

UNIT-IV

Plant growth regulators: physiological effects and general mechanism of action of plant harmones. Brief account on brassinosteroids,jasmonic acid,NO,And Salicylic acid. Photoperiodism and its significance,endogenous clock and its regulataion,vernalization.

UNIT-V

Stress physiology: Plant responses to biotic and abiotic stress, general mechanism of abiotic stress tolerance,drought and salinity stress and antioxidants systems in plants.

Suggested Readings:

Plant pathology

BOT203

UNIT-I

Fundamentals of plant pathology- history of plant pathology; varios levels of parasites ,classification of plant diseases.

Pathogenesis- penetration and entry of plant pathogens,development inside host tissue.

UNIT-II

AGENTS OF PLANT DISEASES,GENERAL Characteristics and symptoms caused by- Agents of infectious diseases (fungi,bacteria ,mycoplasma,virus and nematodes) and agents of non infectious diseases (air ,pollution, chemicals,minerals,temperature)

UNIT-III

Plant diseases: causal organisms,symptoms and management of -–

1 , Downy mildew of grapes

2, karnel bunt of wheat

3 smut of bajra

4. late & early blight of potato

UNIT-IV

: Plant diseases: causal organisms,symptoms and management of -

1, yellow vein mosaic of bhindi

2, black rust of wheat

3, Blight of paddy

4,Tikka disease

5, Sandal spike

UNIT-V

Defence mechanism in plants : Structural induced and biochemical defense mechanism, hypersensitivity reaction .Detoxification of pathogen toxin- Application of molecular biology in diseases ,control stratigies,plant quarantines.

Plant cell and molecular biology

BOT204

UNIT-I

Cell and cell wall- Ultrastructure of prokaryotic and eukaryotic cells; structure ,organization and function of plant cell wall,membrane structure and function of model membrane ,lipid bilayer membrane protein diffusion,osmosis,ion chanels, electrical properties of membranes.

UNIT-II

Structural organization and function of intracellular organelles(mitochondria,plastid,endoplasmic reticulum,golgi bodies,ER,) Cell division and cell cycle, mechanism of programmed cell death.

UNIT-III

RNA synthesis& processing; transcription,dna replication,operon model,extra chromosomal replicons.conformation of nucleic acids(A,B,Z)RNA processing,RNA EDITING,Trna.

UNIT-IV

Prokaryotic transcription- Transcription units; RNA polymerase,structure and assembly,promoters,initiation,elongation and termination.

Eukaryotic transcription- RNA POLYMERASE , Structure and asse,bly,promoters,DNA damage and repair.

UNIT-V

Translation; Translational mechanism.genetic code,Wobble hypothesis,mechanism of protein synthesis.

Translational factors; Initiation ,elongation and termination.