SYLLABUS - FORENSIC BIOLOGY

SECTION-C

UNIT-I


Unit-2

Basic Plant biology- plant cell structure and function, basic plant tissues, modes of plant reproduction, plant classification schemes, subspecialties of forensic botany such as plant morphology, plant anatomy, plant ecology, limnology etc. Essential parts of plants. Plant as evidence. Common poisonous plant and types of plant toxins.

Unit-3

Botanical evidences:- Forensic importance, Introduction, types, location, collection, preservation and evaluation of –


Forensic Diatomology: Diatoms: Nature, classification, location, structure, life cycle, extraction from various body tissues including bone marrow, preparation of slides, methods of identification and comparison, forensic significance.
Unit-4
Basic Molecular biology- the structure of DNA, source of dna sample, extraction, profiling, restriction fragment length polymorphism, polymerase chain reaction, short tandem repeat markers, single nucleotide polymorphism markers, determination of ethnicity, determination of physical appearance, determination of personality traits, mitochondrial dna, RNA, and DNA database.

UNIT-5
Forensic examination of Hair:- Importance, nature, location, structure, growth phases of hair, collection, evaluation and tests for their identification, variation in different major population groups, somatic origin.Fiber Examination: Introduction, Classification, Fiber transfer and persistence. Fiber Recovery: at the scene, in the laboratory, contamination and its prevention.Importance nature, location, collection, evaluation and tests for their identification fiber Identification and comparison: Microscopic Examination, Optical properties (Refractive Index, Birefringence) Instrumental analysis, dye analysis by TLC, factors affecting the strength of fiber evidence.

UNIT-6
Forensic odontology: Development and scope role in mass disaster and anthropology, structural variation in teeth (human and non-human) types of teeth and their functions, determination of age from teeth: eruption sequence, Gustafson's method, dental anomalies, their significance in personal identification. Bites marks: Forensic significance, collection and preservation of bite marks, photography and evaluation of bite marks, Legal aspects of bite marks.Lip Prints in forensic investigations

Unit-7
Wildlife forensics: Importance of Wildlife (Protection) Act-1972, its Schedules in the protection of endangered species of flora and fauna. Identification of wild life materials such as skin, fur, bones, nails, horn, teeth, plants, plant parts and products by conventional and modern methods, Identification of Pug marks of various animals, DNA techniques in wildlife investigations.
UNIT-8
Forensic Entomology: General entomology and arthropod biology, insects of forensic importance, collection of entomological evidence during death investigations. the role of aquatic insects in forensic investigations, insect succession on carrion and its relationship to determine time since death, factors influencing insect succession on carrion, its application to forensic entomology. Forensic Microbiology: Types and identification of microbial organisms of forensic significance.

UNIT-9

Unit-10

----xxx----