Introduction to plant systematic

- **What is Taxonomy?** The science which dealing with identification, nomenclature and classification of living objects is called taxonomy.

  When the taxonomy is concerned with plants, it is often referred to as **systematic botany/ plant systematic/ plant taxonomy**.

- **Identification: I**dentification is the method of determining of an organism by reference to an already existent classification.

- **Nomenclature**: The term nomenclature means the scientific naming of organisms with long time system. The naming of plants on a scientific basis is named botanical or plant nomenclature. In earlier days common names were in use which generally changes with different languages. After observing the problem with different common names one common internationally accepted name was used for a species. Scientific names are introduced in short of binomial, trinomial and l polynomial system of nomenclature.

- **Classification:** The arrangement of a plant or group of plants in a series of groups or categories according to a particular system and in accordance with the rules of nomenclature is called classification. In other words, "classification is a grouping together of those plants whose similarities are greater than their differences."

- **Taxon:** Taxonomic group of any rank e.g., species, genus, family, order etc. is referred to as taxon. (plural: taxa).

Aims and objectives of Plant systematic or plant taxonomy:

I. To classify all kind of plants under plant kingdom.

II. To identify, name and arrange plants in a recognized system of classification showing phylogeny and relationship among groups of plants on the basis of morphological, cytological, embryological characters.

III. Study the distribution and habitat characters of different kinds of plants and their information to the scientific knowledge of the inventory of world's plant resources.

IV. Organized reconstruction of the plant kingdom including changes in nomenclature.

Remember the following terms:

- **Palynology:** The study of plant pollen, spores and certain microscopic planktonic organisms, in both living and fossil form, is called palynology.
- **Cytology:** Cytotaxonomy is a branch of taxonomy that uses the characteristics of cellular structures to classify organisms. In cytotaxonomy, the chromosomal configuration of an organism is the most widely used parameter to infer the relationship between two organisms.
- **Phytochemistry:** Chemotaxonomy is a system of taxonomy that classifies organisms based on their chemical constituents. Phytochemical markers of taxonomic importance include the directly visible particles (including crystals, raphides, and starch granules), primary metabolites, and the secondary metabolites.
- **Molecular biology:** it is a branch of taxonomy that dealing with the study of DNA, RNA and Proteins of organisms.
- **Flora:** The whole plant life of any given area is called flora.
- **Floristics**: The study of floras is called floristics.