**Plant taxonomy or systematic botany**

A study of the grouping of plant together and study their diversity and identification, description, classification and naming. (IDCN)

-**The classification** : is arrangement of the plants into hierarchy having common characteristics .

-**Nomenclature (naming)**

Is the study of the naming of taxa, its first formed by Linnaeus in his book (Species Plantarum) in 1753, it requires that scientific names are in Latin form a and they are subject to the rules of as grammar and written in Latin. For example the scientific name of species consisted of at least two words **.** The first word is name of the genus. The second word is name of the species in addition to the author name *Eruca sativa* L.

**Hierarchy**

Each level of hierarchy is called a rank or category e.g. family, genus, species. And a taxonomic element or classificatory unit of any level or rank may be species, genus , family.

The basic rank of the hierarchy is the species, which is define as group of plant which can interbreed together and form fertile offspring.

Species are grouped into genera singular genus. Genus are grouped into families such as cruciferae and Asteraceae. Family are grouped into orders. Ordar are grouped into classes. Classes are grouped into division. There are other categories below each rank , these can be a group using the prefix sub , as in sub division , sub class, sub family ,sub genus , and also between the family and the genus is the tribe , and between the genus and the

species is the section , below the species is the subspecies , variety and form.

**Endings of the names of taxa above the rank of genus should be in the manner noted below:**

|  |  |  |
| --- | --- | --- |
| Rank | Ending | Example |
| Kingdome | -ae | Plantae |
| Division | -Phyta or -a | PterophytaEudicota |
| Subdivision | -Phytina | Pterophytina |
| Class | -opsida or sida | Pteropsida Rosids |
| Order | -ales | Rosales |
| Suborder | -ineae | Rosineae |
| Family | -aceae | Rosaceae |
| Subfamily | -oideae | Rosoideae |
| Tribe | -eae | Rosaeae |
| Genus | -us ؛a ؛ um ؛es ؛on؛ect. | *Rosa, poterium,**Plantanus* |

The important ranks of the taxonomic hierarchy: Division

 Class

 Order

 Family

 Tribe

 Genus

 Section

 Species Subspecies

 Variety

Genus

Family

species

Division

Kingdom

**Biosystematics**

Is the broad field concerned with morphological, anatomical, ecology, cytological, molecular biology, phylogentical, embryological and genetic investigation, etc. and experimental science studies of living population in the field experimental

garden, laboratory and green house , so that this science to gave the taxonomic more evidence for the classification by using these characters to study phylogenic relationship .

**Numerical taxonomy**

Is the treatment of various of taxonomic data by computerized methods.