Biodiversity:
Biodiversity refers to organisms found within the living world. It is also define as total varieties of organisms found in any particular area at particular time. It is treated in terms of genes, species and ecosystems in correspondence with the three fundamental hierarchical levels of biological organization.
It is the abbreviation of Biological Diverstiy.

Taxonomy:
It is a branch of biology which deals with identification, nomenclature, classification and description of living organisms.
The word 'taxonomy' is derived from two Greek words taxis and nomos where taxis means arrangement and nomos means on name.

Classification:
It is the system or arrangement of organisms into different levels of categories in a sequential manner on the basis of their origin, relationship and structural similarities.
On the basis of kingdom, the living organisms are broadly categorize under two headings. They are

1. **Two kingdom classification:** It is the classification system, where all the organisms are grouped under two headings. They are plantae and animalia. This classification system was first proposed by Carolus Linnaeus. It is simple and easiest type of classification. It is commonly used in field survey and study.
2. **Five kingdom classification:** It is the classification system, where all the organisms are grouped under five headings. They are monera, protista, mycota, plantae and animalia. This classification system was first proposed by RH Whittekar to solve the problem arise in two kingdom classification. It is commonly used in theory rather than practical.

On the basis of characteristics studied, there are different types of classification. They are

1. **Artificial classification system:** It is a classification system where organisms are grouped by choosing only one or simple superficial characteristics. The characters are selected randomly for the classification.
2. **Natural classification system:** It is the classification system where organisms are grouped on all available similar and dissimilar characteristics. Here the characteristics are well studied and select for the classification.
3. **Phylogenetic classification system:** It is the natural classification system where ascendant and descendant are also discussed.

4. **Modern classification system:** It is the classification where Linnaeus classification terms are replaced by new terms.

Nomenclature:

It is defined as the system of giving the proper name to the organism. There are two major system of nomenclature.

1. **Common naming system:** The system of nomenclature where organisms are known by different common words in different part of the world. The common names differ in different parts and quite confusing. It is not based on any scientific methodology.
2. **Scientific naming system (Binomial nomenclature):** It is the system of giving name of any organism by scientific methods. In this system, two Latin words are given for any particular organism.
   The credit of giving binomial nomenclature goes to Swedish naturalist, Carolus Linnaeus. Hence, he is known as 'Father of Binomial Nomenclature'.

Rules of Binomial Nomenclature:

1. Each living organism has a single scientific name in two words i.e. generic name and specific name (epithet).
2. The names are always taken from either Latin or Greek languages.
3. Generic name begins with capital letter followed by small letters and specific name in small letters.
4. Generic name is single word but species name may be single or compound word.
5. Scientific name of the organism should not repeat.
6. Scientific name of organism is underlined in hand written form and italics in printed form.

Advantages of Binomial Nomenclature:

1. There is no confusion on recognizing the organism as there is only one name for a species.
2. It is universally accepted.
3. There is no possibility of changing the scientific name of organism without any scientific evidences.
4. Scientific name provides the detailed characteristics of organisms.
5. The name of organism can be easily revised with scientific evidences.
6. Unknown organism can be easily identified.
7. It helps to develop the phylogenetic and evolutionary trend in organisms.

8. A newly discovered organism can be easily provided with a new scientific name.

Taxonomic hierarchy:

The arrangement of taxonomic groups in definite order, from higher to lower categories, depending upon their relative dimensions.

Species: It is the smallest rank of classification. The first letter of the species is denoted with small letter. It is written by underlined and printed in italics.

Genus: A group of species having some common character is known as genus. The first letter of genus is denoted with capital letter. It is written by underlined and printed in italics.

Family: A group of genus is known as family. Its suffix is …….ceae.

Order: A group of family is known as order. Its suffix is ……ales.

Class: A group of order is known as class. Its suffix is ……..ae.

Division: A group of class is known as division. Its suffix is ……phyta.

Kingdom: A group of division is known as kingdom. It is the highest categories of classification.