

**CBSE Class 11 Biology**  
**Important Questions**  
**Chapter 1**  
**The Living World**

**1 Marks Questions**

**1.Name the three fields of systematics.**

**Ans.** Nomenclature, classification & taxonomy.

**2.Give the two name system of organisms?**

**Ans.** Binomial Nomenclature

**3.Write the correct order of sequence of taxonomical categories?**

**Ans.** Species → genus → family → order → class → Phylum → kingdom.

**4.Give the unit of classification?**

**Ans.** Rank / category

**5.Who gave binomial name of classification?**

**Ans.** Carolus Linnaeus

**6.What is meant by identification of a species?**

**Ans.**The identification is aimed at finding correct name & proper position of a species in established scheme of classification.

**7.Name the highest categories of classification?**

**Ans.** 1 Kingdom.



**8.What are the three codes of nomenclatures?**

**Ans.**International code of botanical, zoological & bacteriological nomenclature.

**9.What do you mean by “chemotaxonomy”?**

**Ans.**Understanding taxonomic relationships based on the distribution of certain characteristic chemical constituents is called chemotaxonomy.

**10. Define species**

**Ans.** Members that can interbreed to produce fertile offspring.

**11. What is systematic**

**Ans.** Systematic arrangement which also takes jute account evolutionary relationships between organisms.

**12. Give lbs names of two famous botanical gardens.**

**Ans.** Kew (England) and National Botanical Research Institute (Lucknow) Indian Botanical Garden (Howrah)



**CBSE Class 12 Biology**  
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**2 Marks Questions**

**1. What are the advantages of giving scientific names of the organisms?**

**Ans:** (i) Scientific names are universally accepted in the world because they are based on same principles that are universal.

(ii) The advantage of a technical term is the relationship & comparison too the others.

**2. Give the role of botanical gardens?**

**Ans:**

(i) Botanical gardens provide plant materials for taxonomic studies.

(ii) Plant species are grown for identification.

(iii) Plants are grown for research.

(iv) To maintain records of local flora.

**3. Differentiate between species & taxon?**

**Ans:**

<b>SPECIES</b>	<b>TAXON</b>
<b>i) It is the basic taxonomic category</b>	i) It is a level of taxonomic category
<b>ii) It is a rank</b>	ii) It is a group of concrete biological aspects



iii) It is monophyletic

iii) It may be mono or polyphyletic.

#### 4. Why are classification systems changing every now & then?

**Ans:** The organisms are classified on the basis of characteristics. Earliest classification were based on the uses of various organisms but now the humans are interested in knowing more about different kinds of organisms & their diversities & their relationship also.

#### 5. Differentiate between taxon & category?

**Ans:**

TAXON	CATEGORY
i) Taxon represents to a group of organisms.	i) Category refers to a rank of status of taxon.
ii) It is only of one eg. Dicots, Monocots,	ii) Category is of two types i.e. a) Major rank – kingdom, division, class. b) minor rank – Genus & species

#### 6. Describe the role of museum in studying systematic?

**Ans:** (i) Museums have collections of plants & animals

(ii) These are used to deposit type specimens.

(iii) Important centres for taxonomic studies.

(iv) Provide information about local flora & fauna as well as of other areas.

#### 7. “Botanical gardens are living herbaria”. Comment ?

**Ans:** Botanical gardens are repositories of information useful for taxonomic studies.

Herbaria are most permanent records of plant specimens. Living plants are maintained in botanical gardens. They play key roles in conservation, research, ecology, library & herbaria etc.

### 8. Why are living organisms classified?

**Ans:** There are various kinds of life that differ in shape, size & colour etc. The biological diversity is the range of life occurring in biological world. The diversity develops due to the evolution and development of adaptations to overcome competitions among life forms due to limited resources.

### 9. What is Taxonomic key? How is it helpful in the identification & classification of an organism?

**Ans:** Key is a taxonomic aid for identification of unknown organisms based on similarities & dissimilarities. It is a taxonomic literature based on couplet. These are analytical in nature & separate keys are needed for every taxonomic category eg. genus, order, family etc & species for identification of organisms.

### 10. Differentiate between taxonomy & systematic.

**Ans:**

TAXONOMY	SYSTEMATICS
<b>i) The science of identification, nomenclature &amp; classification is called taxonomy.</b>	i) It refers to the science of identification description, nomenclature & classification.
<b>ii) It deals with the rules &amp; the principles of classification.</b>	ii) It deals with unique characteristics at every level of classification.

### 11. What is a taxon? Illustrate the taxonomical hierarchy with a suitable example?

**Ans:** Taxon is “a unit of classification of organisms which can be recognized & assigned a definite category at any level of classification” eg. order primates & carnivores are included in mammalia. Various classes eg. Pisces, animals, reptilia aves & mammalia form phylum-chordata. All phyla are included in kingdom animalia.

**12. What is the basis of modern taxonomical studies ?**

**Ans:** External and internal structure, structure of cell, development process and ecological information

**13. Why growth and reproduction cannot be taken as defining property of all living**

**Ans:** • Non-living things can also increase in mass by accumulation of material on surface.

• Many organisms do not reproduce (e.g., mules sterile worker bees)

**14. How is a taxon defined**

**Ans:** Each category in a taxonomical hierarchy represents a rank and is called taxon.

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**3 Marks Questions**

**1.Name the guidelines for naming of organisms?**

**Ans:**Guidelines for naming of organisms include :-

**(i)**A scientific name generally has two words in Latin or derived from latin irrespective of their origin.

**(ii)**First word denotes the genus where as second word for species.

**(iii)**Names are printed in italics or are separately underlined to indicate the Latin origin.

**(iv)**Each taxonomic group has only one correct name.

**(v)**The name must be short, precise and easy to pronounce.

**(vi)**Generic name begins with a capital letter & the specific name with small letter eg. Homo sapiens.

The name of author is written in abbreviated form after species name & it is printed in Roman.

**2.What is Biological classification? What is the need of classification?**

**Ans:**Biological classification is the naming of organisms by two words. One is generic name & other is specific name for eg. Man is called Home sapiens classification becomes essential for the following reasons:-

**(i)**It is very essential for the systematic study of living beings. Without this study of different organisms would be in confusion.



**(ii)**It is impossible to study each & every organism.

**(iii)**All the types of organisms do not occur in a given locality.

**(iv)**Without a proper system so classification, it is impossible to recognize or identify different types of organism.

**(v)**Classification helps in knowing the relationships among different groups of animals & plants.

**(vi)**Classification makes the study of organisms easier & gives a comparative account of them.

### **3.State any five objectives of classification.**

**Ans:**Objectives of classification:-

**(i)**Development of a system for easily identifying a species if known or unknown

**(ii)**The description of various species.

**(iii)**Recognition of different species.

**(iv)**To bring circulated characteristics at various levels in hierarchy.

**(v)**The grouping of species in taxonomic classification.

**(vi)**To establish natural relationship board on phylogeny on the basis of resemblances of the organisms of the organisms.

### **4.Explain the utility of systematic & mention the characterstics of new.**

**Ans:**Systematics is defined as “the study of classification of organisms based on evolutionary relationships”.

**(i)**It provides useful information about organism, its evolution & adaptation name & classification etc.

**(ii)**Systematics helps us in the identification of useful & harmful animals or plants in applied



field of biology.

**(iii)**It plays economical role.

New systematics has the following features:-

**(a)**Species are regarded as dynamic unit & not as static unit of classical systematic.

**(b)**The importance of species as such is reduced since most of the work is done with sub-divisions of species.

**(c)**The morphological species definition has been replaced by a biological one which takes ecology, genetics, geography, cytology & behaviour into consideration.

### 5.What are the major divisions of classification, classify man.

**Ans:**

**(i)**Kingdom:- It is the highest category of classification. There are 2 kingdom – Animal & plant kingdom.

**(ii)**Phylum:- A group of closely related classes having certain common characters.

**(iii)**Class:- A group of closely related orders having certain common characters.

**(iv)**Order:- A group of closely related families having certain common characters.

**(v)** Family:- A group of closely related genera having certain common characters.

**(vi)** Genus:- A group of closely related species having certain common characters.

**(vii)** Species:- Individuals having certain common characters.

Classification of man:-

<b>Kingdom</b>	<b>Animalia</b>
<b>Phylum</b>	Chordate
<b>Class</b>	Mammalia
<b>Order</b>	Primates

<b>Family</b>	Hominidae
<b>Genus</b>	Homo
<b>Species</b>	Sapiens

## 6. What are taxonomic aids? Mention some of the taxonomic aids for identification

**Ans:** Taxonomic aids are devices used to study, Identification & classify organism, some of these are:-

- (i)** Herbarium :- collections of present /preserved or mounted plant specimens. arranged systematically to provide information on sheets
- (ii)** Botanical gardens :- specialized gardens for collection of living plants, it is maintained for references & identification purposes in which each plant is labelled showing its biological name.
- (iii)** Zoological parks:- places with live animals are called zoos or zoological parks. The animal live in their natural habitat there are separate places for birds, tigers, lions, reptiles etc.
- (iv)** Museums :- These are mostly set up in institutions where collection of preserved plants & animals for reference & taxonomic studies are placed in preservatives eg. Alcohol & formalin.

## 7. How would you set up a herbarium?

**Ans:** SETTING UP OF HERBARIUM involves the following steps:-

- (i)** Visit to a specific area to get intact part or plant, seeds or flowers.
- (ii)** Information about habitat, season & time of collection as well topography etc.
- (iii)** For collection, some tools are needed, notebook, digger, scissor, knife polyethene, newspaper etc.
- (iv)** Spreading of specimens & drying, change the paper sheets after 3-4 days, plant press may be used for it. The dried specimens are pasted on herbarium sheets & pesticides like CS<sub>2</sub>,



naphthalene Hgcl<sub>2</sub>etc.

(v)Put label on specimen & mention its place of collection, time of collection, common name scientific name etc.

### 8.Differentiate between classical taxonomy & Modern taxonomy.

Ans:

CLASSICAL TAXONOMY	MODERN TAXONOMY
(i) It is called old taxonomy or systematic	(i)It is called Neo- systematic or Bio-systematic.
(ii)The species was considered a basic, concrete & separate unit that was fixed or static entity & the work of creator.	(ii)The species is considered related to one another, mutable & the work of gradual modification as wall as dynamic & ever-changing.
(iii)In it, classification was based on the morphological features only	(iii)In it, classification was based on phylogenetic relationships of the organisms.
(iv) Few individuals were studied.	(iv) large number of individuals are studied
(v) The species was delimited on morphological characters.	(v) Emphasis in population instead of species. Morphological delimitation was replaced by biological delimitation.

### 9. What is the difference between Botanical Garden and Herbarium?

Ans:Botanical Garden Collection of living,; plants.

Herbarium: Collection of dried, pressed and preserved plant specimens on sheet

### 10. Keys arc analytical in nature and are helpful in identification and classification of organisms. How?

Ans:Refer page no. [ Text Rook of Biology for Class X1.

### 11.Define (a) Genus (b) Family (c) Order



**Ans:**Genus Group of related species; Family Group of related genera; Order Group of related families.

**12 .What is Binomial system of nomenclature? Who proposed this system? Why is binomial nomenclature the most acceptable mode of naming organism?**

**Ans.** Naming of plants & animals with two words one generic & other specific name is called binomial system of nomenclature. Carolus Linnaeus introduced this scientific system to name a species. He gave two names to a species eg. Mangifera is generic name and indica is the specific name.

Binomial nomenclature is universally accepted all over the world because it is written according to universal rules of nomenclature framed by ICBN, ICZN, & ICNPC etc. It has two parts generic name & specific name followed by name of scientist who discovered it at last in abbreviated form. It must be in Latin or derived from Latin. It must be binomial. The genus starts with capital letter while species by small letter. Handwritten name is underlined it indicates relationship with other species present in same genus.

The rules & regulations present of binomial nomenclature must be observed before a taxonomist names a new found organism. This maintains stability in taxa, avoids the use of names that may cause error ambiguity & confusion.