CHAPTER 1

The Living World

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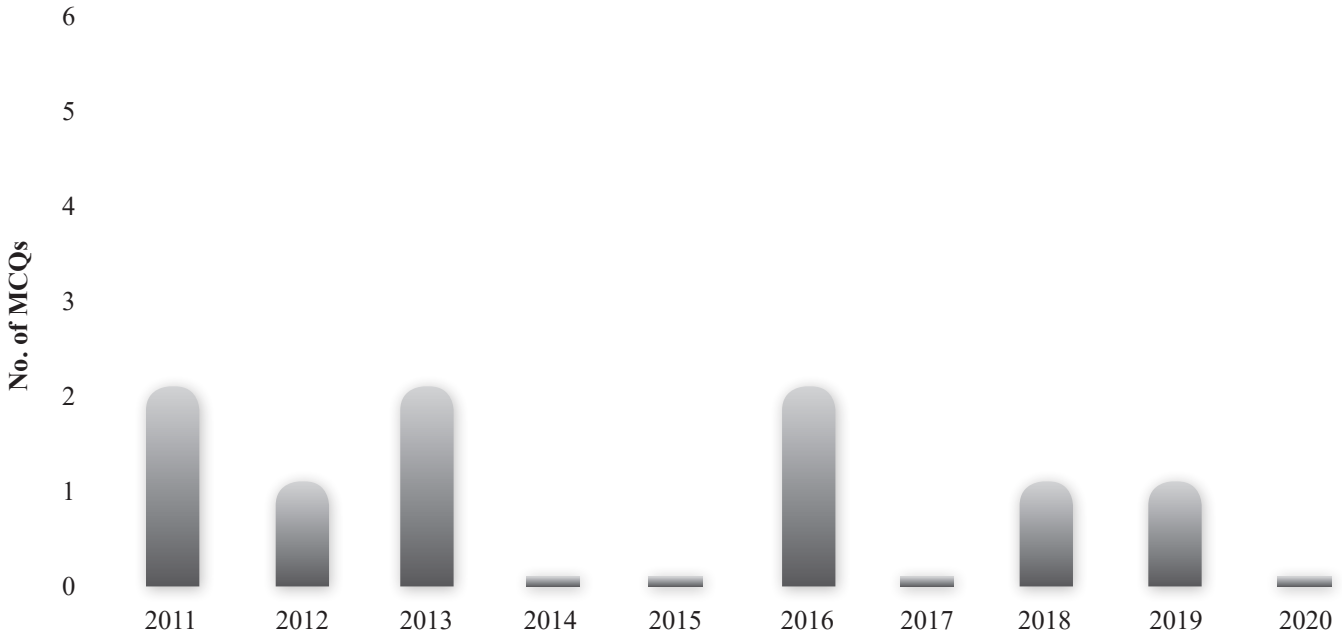
Past Year NEET Trend



Investigation Report

TARGET EXAM	PREDICTED NO. OF MCQs	CRITICAL CONCEPTS
NEET	0-1	• Binomial nomenclature • Taxonomic category • Taxonomical aids

Perfect Practice Plan

TOPIC-WISE MCQs	NCERT BASED MCQs	MULTI-CONCEPT MCQs	NEET PAST 10 YEAR QUESTIONS	TOTAL MCQs
104	36	29	11	180

Introduction

- The **complex organisation of molecules** that have the tendency to express themselves through various chemical reactions are designated as living beings.
- The **basic purpose** of these reactions is to produce and utilise energy which lead to growth, development, responsiveness, reproduction and other characteristics of life.
- The living beings live in different types of habitats like forests, mountains, deserts, oceans, freshwater bodies, hot springs, polar regions, etc.

What Is 'Living'?

There are certain distinctive characteristics exhibited by living organisms which distinguish them from non-living.

Unique Characteristics of Living Organisms

The most distinctive features exhibited by living organisms includes:

1. Growth

- All living organisms have the capacity to grow.
- In plants, growth occurs continuously throughout their life span. In animals, this growth is seen only up to a certain age. However, cell division occurs in certain tissues to replace lost cells
- Growth of an individual organism has **two** characteristics (**twin characters**):
  (i) Increase in body mass
  (ii) Increase in number
- In majority of higher animals and plants, growth and reproduction are **mutually exclusive events**. One must remember that increase in body mass is considered as growth.
- Non-living objects also grow by accumulation of material on the surface. E.g., mountains, boulders and sand mounds. Growth, therefore, **cannot** be taken as a defining property of living organisms.

— *KEY NOTE* —

In living organisms, the growth is internal but in non-living organisms, the growth is external.

2. Reproduction

- Reproduction is a characteristic of living organisms.
- No non-living object is capable of reproducing or replicating by itself.
- In multicellular organisms, reproduction refers to the **production of progeny** possessing features more or less similar to those of parents.
- Organisms reproduce by both sexual and asexual means. For example, fungi multiply and spread easily due to the millions of asexual spores they produce.
- The lower organisms like yeast and *Hydra*, reproduce by budding. In *Planaria* (flat worms), the mode of reproduction is **true regeneration**, i.e., a fragmented organism regenerates the lost part of its body and becomes a new organism.
- The fungi, the filamentous algae, the protonema of mosses, all easily multiply by fragmentation.
- Unicellular organisms such as bacteria, unicellular algae or *Amoeba*, reproduction is synonymous with growth, i.e., increase in number of cells.

— *KEY NOTE* —

Many organisms such as mules, sterile worker bees, infertile human couples, etc., do not reproduce. Hence, reproduction also **cannot** be an all-inclusive defining characteristic of living organisms.

3. Metabolism and Cellular Organisation

- All living organisms are made up of chemicals. These chemicals, small and big, belonging to various classes, sizes, functions, etc., are constantly being made and changed into some other biomolecules. These conversions are **chemical reactions** or **metabolic reactions**.
- The sum total of all the chemical reactions occurring in our body is called **metabolism**.
- No non-living object exhibits metabolism.
- An isolated metabolic reaction(s) outside the body of an organism, performed in a test tube is neither living nor non-living. Hence, while metabolism is a **defining feature** of all living organisms **without exception**.
- Isolated metabolic reactions *in vitro* are not living things but surely living reactions. Hence, cellular organisation of the body is the **defining feature of life forms**.

4. Conciousness

- The most obvious and technically complicated feature of all living organisms is the ability to sense their surroundings or environment and respond to these environmental stimuli which could be physical, chemical or biological.
- All organisms, from the prokaryotes to the most complex eukaryotes can sense and respond to environmental cues. Plants respond to external factors like light, water, temperature, other organisms, pollutants, etc.
- Photoperiod affects reproduction in seasonal breeders, both plants and animals. All organisms handle chemicals entering their bodies.
- All organisms therefore are 'aware' of their surroundings.

— *KEY NOTE* —

Human being is the only organism who is aware of himself, i.e., has self-consciousness. Consciousness therefore becomes the defining property of living organisms.

"Living organisms are self-replicating, evolving and self-regulating interactive systems capable of responding to external stimuli."

Diversity In The Living World

☺ **Biodiversity** refers to the number and types of organisms present on earth. The number of species that are known and described range between **1.7 - 1.8 million**.

Systematics

☺ It is the study of different kinds of organisms, their diversities and relationships among them.

☺ The word 'systematics' is derived from the Latin word '***Systema***' which means systematic arrangement of organisms.

☺ Linnaeus used ***Systema Naturae*** as the title of his publication.

☺ Systematics takes into account **evolutionary relationships** between organisms.

☺ The scope of systematics later included identification, nomenclature and classification.

Need To Know:

Neosystematics is a concept of systematics which bring out taxonomic affinity on the basis of evolutionary, genetic and morphological features. This concept was developed by **Julian Huxley** in 1940.

Taxonomy

☺ The term taxonomy was first introduced by **A.P. de Candolle**.

☺ Characterisation, identification, classification and nomenclature are the processes that are basic to taxonomy.

Taxonomy includes

1. **Characterization:** It is based on the understanding of characters of organisms like external and internal structure (morphology and anatomy), the structure of the cell (cytology), developmental process (embryology) and ecological information (ecology) of organism.
2. **Identification:** It is the **correct description of organism** to determine the exact place or position in taxonomic arrangement the taxonomy.
3. **Classification:** It is the **placing** of an organism or a group of organisms into convenient categories based on easily observable characteristics.
4. **Nomenclature:** The **naming of living organisms** such that a particular organism is known by the same name all over the world is called nomenclature.

   The names are of **two** types - **vernacular** names (common names) and **scientific names**.

   Scientific names: These are the names given to the organisms by biologists based on universally accepted principles and criteria.

   The scientific names ensure that each organism has only one name. Description of any organism should enable the people (in any part of the world) to arrive at the same name.

   To accomplish this, certain international codes have been established. These codes are

   - **ICBN**-International Code for Botanical Nomenclature
   - **ICZN**-International Code for Zoological Nomenclature

Binomial Nomenclature

☺ Binomial nomenclature was proposed by Carolus Linnaeus. He proposed scientific naming of plants in his book "***Species plantarum***"

☺ The system of providing a name with two components is called **Binomial nomenclature**.

☺ In binomial nomenclature, each scientific name has two components-

(i) Generic name (genus)

(ii) Specific epithet (species)

☺ Example, *Mangifera indica* Linn. Here *Mangifera* is the genus name and *indica* represents the species. Linn indicates that this species was first described by Linnaeus.

Universal Rules of Nomenclature

(i) Biological names are generally in Latin and written in italics. They are Latinised or derived from Latin irrespective of their origin.

(ii) The first word in a biological name represents the genus while the second component denotes the specific epithet.

(iii) Both the words in a biological name, when handwritten, are separately underlined, or printed in italics to indicate their Latin origin.

(iv) The first word denoting the genus starts with a capital letter while the specific epithet starts with a small letter. It can be illustrated with the example of Mangifera indica.

(v) The name of the author is written in an **abbreviated form** after the species epithet (at the end of the biological name) and it is printed in **Roman**.

Advantages of binomial nomenclature

(i) The biological name are same all over the world.

(ii) They are definite and accepted universally.

(iii) All newly discovered plants and animals can be named, classified and described easily.

Taxonomic Categories

☺ The system of organising organisms in a definite sequence of various taxonomic categories in a descending order is called **taxonomic hierarchy**. It was first proposed by Carolus Linnaeus.

☺ Each category, referred to as a unit of classification, represents a rank and is commonly termed as **taxon**. **(pl: Taxa)**

☺ Taxonomic categories and hierarchy can be illustrated by an example. Insects represent a group of organisms sharing common features like three pairs of jointed legs. It means insects are recognisable concrete objects which can be classified, and thus were given a rank or category.

☺ Each rank or taxon, in fact, represents a unit of classification. These taxonomic groups/categories are distinct biological entities and not merely morphological aggregates.

☺ The **basic requirement** is the knowledge of characters of an individual or group of organisms. This helps in identifying similarities and dissimilarities among the individuals of the same kind of organisms as well as of other kinds of organisms.

- There are **seven** main taxonomic categories. They are called **obligate categories**, i.e., they are strictly used at the time of any organism's classification.
- There are some extra categories, like sub-division, sub-order, sub-family etc. They are not regularly used. They are used only when they are needed.

The seven main taxonomic categories are:

1. Species

- The term 'species' was first time used by **John Ray.**
- Taxonomic studies consider a group of individual organisms with fundamental similarities as a species.
- Two species can be distinguished on the basis of distinct morphological differences.

— *KEY NOTE* —

It is the lowest taxon or category in the biological classification. So the basic unit of taxonomy is species.

- Each genus may have one or more than one specific epithets representing different organisms, but having morphological similarities, e.g., *Panthera* has another specific epithet called *tigris* and *Solanum* includes species like *nigrum* and *melongena*.

Need To Know:

- Types of Species:
  - **(i) Sympatric species:** The species inhabiting a same geographical area.
  - **(ii) Allopatric species:** The species inhabiting in different geographical areas.
  - **(iii) Sibling species:** Group of very similar and closely related species which cannot interbreed but it is difficult to separate them on the basis of morphological characters alone .

2. Genus

- Genus comprises a group of **related species** which has more characters in common in comparison to species of other genera.
- Genera are aggregates of closely related species.
- E.g., potato and brinjal are two different species but both belong to the genus *Solanum*.
- Lion (*Panthera leo*), leopard (*P. pardus*) and tiger (*P. tigris*) with several common features, are all species of the genus *Panthera*. This genus differs from another genus *Felis* which includes cats.

3. Family

- Family has a group of **related genera** with still less number of similarities as compared to genus and species.

— *KEY NOTE* —

Families are characterised on the basis of both vegetative and reproductive features of plant species.

- For example among plants, three different genera *Solanum*, *Petunia* and *Datura* are placed in the family Solanaceae.
- Among animals, genus *Panthera*, comprising lion, tiger, leopard is put along with genus, *Felis* (cats) in the family Felidae. Cat and dogs are places in the family canidae

4. Order

- Being a higher category, order is the **assemblage of families** which exhibit a few similar characters.
- Plant families like Convolvulaceae, Solanaceae are included in the order Polymoniales mainly based on the floral characters.
- The animal order, Carnivora, includes families like Felidae (cat family) and Canidae (dog family).

5. Class

- It includes related orders having common characters.
- E.g., Order Primata (comprising monkey, gorilla and gibbon) is placed in class Mammalia along with order Carnivora (includes tiger, cat and dog).

6. Phylum

- Classes having same features in common constitute the next higher category called phylum.
- Phylum Chordata includes classes like fishes, amphibians, reptiles, birds and mammals with the common features.
  - (i) Presence of notochord.
  - (ii) Presence of dorsal hollow neural system.

— *KEY NOTE* —

In case of plants, classes with few similar characters are assigned to a higher category called division.

7. Kingdom

- All organisms whether plants or animals belonging to various phyla are assigned to the highest category called Kingdom.
- Kingdom Plantae, is distinct and comprises all plants from various divisions.

— *KEY NOTE* —

- As we go higher from species to kingdom, the number of common characteristics goes on decreasing.
- Lower the taxa, more are the characteristics that the members within the taxon share.

- Taxonomic categories showing hierarchial arrangement in ascending order:

  Species → Genus → Family → Order → Class → Phylum or Division → Kingdom

Taxonomical Aids

- Taxonomical aids are used for **identification and classification of an organism**, and the information gathered is stored along with the specimens.
- Taxonomic studies of various species of plants, animals and other organisms are useful in agriculture, forestry, industry and in understanding our bio-resources and their diversity.

Table: Organisms with their Taxonomic Categories

Common Name	Biological Name	Genus	Family	Order	Class	Phylum/ Division
Man	*Homo sapiens*	*Homo*	Hominidae	Primata	Mammalia	Chordata
Housefly	*Musca domestica*	*Musca*	Muscidae	Diptera	Insecta	Arthropoda
Mango	*Mangifera indica*	*Mangifera*	Anacardiaceae	Sapindales	Dicotyledonae	Angiospermae
Wheat	*Triticum aestivum*	*Triticum*	Poaceae	Poales	Monocotyledonae	Angiospermae

- ☺ The collection of actual specimens of plant and animal species is essential and is the prime source of taxonomic studies. These are also fundamental to studies and essential for training in systematics.
- ☺ It is used for classification of an organism, and the information gathered is also stored along with the specimens. In some cases the specimen is preserved for future studies.
- ☺ Biologists have established certain procedures and techniques to store and preserve the information as well as the specimens.
- ☺ The important taxonomic aids are herbaria, botanical gardens, museums, zoological parks and keys.

Herbarium

- ☺ Herbarium is a **store house** of collected plant specimens that are dried, pressed and preserved on sheets.
- ☺ These sheets are arranged according to a universally accepted system of classification.
- ☺ These specimens, along with their descriptions on herbarium sheets, become a store house or repository for future use.

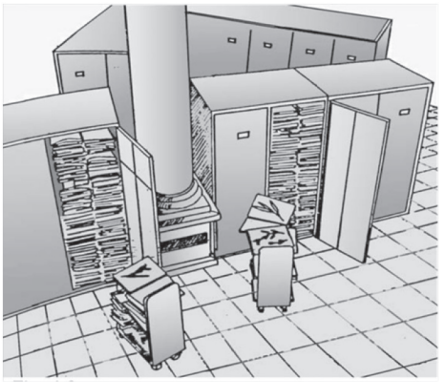


Fig.: Herbarium showing stored specimens

— *KEY NOTE* —

- The herbarium sheets carry a label providing information about date and place of collection, English, local and botanical names, family, collector's name, etc.
- Herbaria also serve as **quick referral systems** in taxonomical studies.
- The **standard size** of herbarium sheet is 29 × 42cm. A label of 6.5 ×10.5 cm or 8 ×12 cm is attached at corner of herbarium sheet for providing various information about specimen.

- ☺ The **sequential order of steps** takes place during herbarium technique is collection, drying, poisoning, mounting, stiching, labelling, identification, filing of specimens, storing and maintenance of index register

Need To Know:

For the preservation of herbarium sheet for a long period after the mounting of plant, it is treated with $CuSO_4$ or 0.1% mercuric chloride to avoid decoration

2. Botanical Gardens

- ☺ These specialised gardens have collections of living plants for reference. Plant species in these gardens are grown for identification purposes and each plant is labelled indicating its botanical/scientific name and its family.
- ☺ The **famous botanical gardens** are at Kew (England), Indian Botanical Garden, Howrah (India) and at National Botanical Research Institute (NBRI), Lucknow (India).

Objectives of botanical Gardens:

- ☺ Rare and endemic species of plants are conserved under ***ex situ* conservation**.
- ☺ These are helpful to supply living plant resources for **research, identification and classification.**
- ☺ These are the **sites of germplasm collection** of selected plants and their wild relatives.
- ☺ They provide materials and seeds for research.
- ☺ They act as research stations as well as acclimatisation centres for the introduction of **economically useful** plants. They provide aesthetically pleasing environment.

Need To Know:

Special Kinds of Gardens:

- **Arboretum :** Main collection of woody species.
- **Bambusetum (Bambuseta) :** Main collection of Bamboos.
- **Orchidarium (Orchidaria) :** A garden containing collection of orchids, E.g., National orchidaria in BSI, Shillong and Coimbatore.
- **Pinetum :** Main collection of conifers.

3. Museum

- ☺ Museums have collections of preserved plant and animal specimens for study and reference.
- ☺ Biological museums are generally set up in educational institutes such as schools and colleges.
- ☺ Specimens are preserved in the containers or jars in preservative solutions. Plant and animal specimens may also be preserved as dry specimens.
- ☺ Museums often have collections of skeletons of animals too.

— KEY NOTE —

Method of insect preservation – After collecting, killing and pinning, insects are preserved in insect boxes.

Method of preservation of larger animals – Birds and mammals are stuffed and preserved.

4. Zoological Parks

- These are the places where wild animals are kept in **protected environments** under human care and which enable us to learn about their food habits and behaviour.
- All animals in a zoo are provided, as far as possible, the conditions similar to their natural habitats. Children love visiting these parks, commonly called **zoos**.
- National Zoological park, Delhi was established in 1959. It is one of the finest **zoo of Asia**.

Other Taxonomical Aids:

1. Key

- Key is used for identification of plants and animals based on the similarities and dissimilarities. They are **based on the contrasting characters** generally in a pair called **couplet**.
- It represents the choice made between two opposite options. This results in acceptance of only one and rejection of the other.
- Each statement in the key is called a **lead**.
- Separate taxonomic keys are required for each taxonomic category such as family, genus and species for identification purposes.

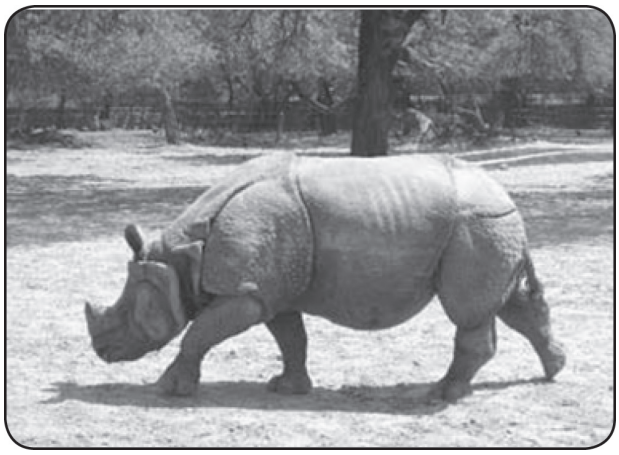


Fig.: Pictures showing animals in different zoological parks of India

Fig.: Pictures showing animals in different zoological parks of India

- Keys are generally analytical in nature.
- It is of two types:
  - **(i) Bracketed keys :** They are **most popular keys** in which the pairs of contrasting choices are given numbers in brackets and the user can pick up the correct choice.
  - **(ii) Indented or Yoked key :** It has sequence of choice between two or more statements of characters of species.

2. Flora

- It contains the actual account of habitat and distribution of plants of a given area.
- These provide the index to the plant species found in a particular area.

3. Manuals

- Manuals are useful in providing information for identification of names of species found in an area.

4. Monographs

- It is a book that provides all the available information about a taxon like genus, family or higher catergory at the time of publication.
- Monographs contain information on **any one taxon**.

Topic-wise Questions

Scan for Video Solution

What is Living?

1. Among the following which can be a common feature exhibited by both living and non-living?

a. Growth b. Reproduction

c. Metabolism d. Cellular organisation

2. Among the following, increase in body mass can be taken as criterion for growth

a. In living organisms b. In non-living objects

c. Both (a) and (b) d. None of the above

3. How many (in number) of the following properties are the defining characteristics of living organisms?

Growth, reproduction, metabolism, cellular organisation, consciousness

a. 2 b. 3

c. 4 d. 5

4. Self-consciousness (the awareness of himself) is the property of

a. All living organisms b. Prokaryotes only

c. Eukaryotes only d. Human being only

5. Twin characteristics of growth are

a. Increase in length

b. Increase in width

c. Increase in mass and number

d. Both (a) and (b)

6. Growth and reproduction are mutually exclusive events in

a. Lower plants b. Lower animals

c. Higher animals and plants d. Unicellular organisms

7. Non-living objects also grow if we take increase in body mass as a criterion for growth. In mountains, boulders and sand mounds growth is from

a. Outside b. Inside

c. Both d. None of the above

8. The most important feature of all living systems is to

a. Utilise oxygen to generate energy

b. Replicate the genetic information.

c. Produce gametes

d. Utilise solar energy for metabolic activities.

9. The sum total of chemical reactions occurring in our body is called

a. Metabolism b. Homeostasis

c. Irritability d. Catabolism

10. Which of the following biological processes does not operate within the life span of a given organism?

a. Birth and nutrition

b. Growth and maturation

c. Metabolism and excretion

d. Decomposition and mineralisation

11. Growth, development and functioning of living body is due to

a. Order b. Homeostasis

c. Metabolism d. Adaptation

12. Which is the most important criteria but generally not used for the identification of the species?

a. Interbreeding b. Morphology

c. Genetic material d. Anatomy

13. Match the column I and II, and choose the correct combination from the options given.

Column - I	Column - II
A. Fungi	i. Asexual spores
B. *Amoeba*	ii. Binary fission
C. *Hydra* and Yeast	iii. True regeneration
D. *Planaria*	iv. Budding

a. A–i, B–ii, C–iii, D–iv b. A–i, B–ii, C–iv, D–iii

c. A–ii, B–i, C–iv, D–iii d. A–iii, B–i, C–ii, D–iv

14. Which of the following organisms are multiplied by fragmentation?

A. Fungi B. All algae

C. Protonema of mosses

a. A and B b. A, B and C

c. B and C d. A and C

Diversity in Living World

15. ICBN stands for

a. International code for Botanical Nomenclature

b. International code for Binomial Nomenclature

c. International code for Botanical Naming

d. International code for Binomial Naming

16. In *Mangifera indica*, *indica* indicates

a. Name of the genus b. Name of the species

c. Specific epithet d. Both (b) and (c)

17. ICZN codes for:

a. International code of zoological Nomenclature

b. International code of zoological Naming

c. International coding of zoological Nomenclature

d. Inbreeding code of zoological Nomenclature

18. The science of giving names to living organisms is called
a. Nomenclature b. Identification
c. Classification d. Characterization

19. In binomial nomenclature, the name of an organism consists of
a. A scientific and a common name
b. Name of genus and species
c. A name given by two scientists
d. One name is Latin, other is common

20. In relation to the biological or scientific names, which is wrong?
a. Scientific names are generally in Latin and printed in Italics
b. Scientific names ensure that one organism has only one name
c. Scientific names are used all over the world
d. One scientific name can be used for two related species

21. Scientific names of animals are based on principles and criteria agreed by
a. IUCN b. ICZN
c. ICBN d. ICVN

22. Biological names, when hand written, should necessary be:
a. Underlined b. Bold (antics)
c. In capital letter d. Italics

23. The word systematics is derived from
a. Greek word systema b. Italic word systema
c. Latin word systema d. English word systema

24. An important criterion for modern day classification is
a. Resemblances in morphology
b. Anatomical and physiological traits
c. Breeding habits
d. Presence or absence of notochord

25. Phenetic classification is based on
a. Sexual characteristics
b. The ancestral lineage of existing organisms
c. Observable characteristics of existing organisms
d. Dendograms based on DNA characteristics

26. Huxley is the father of
a. New systematics b. Artificial systematics
d. Evolutionary systematics d. Natural systematic

27. Given below is the botanical name of mango. Mark the option is which the name is correctly written
a. Magnifera Indica b. Mangifera indica
c. *Mangifera Indica* d. *Mangifera indica*

28. An animal with same generic, specific and subspecific names is
a. Man b. Gorilla
c. Rabbit d. Elephant

29. Who was the first to describe that species is the unit of classification?
a. John Ray b. Huxley
c. Linnaeus d. Candolle

30. In taxonomy the first step is:
a. Identification b. Nomenclature
c. Classification d. Affinities

31. Human beings were since long, not only interested in knowing more about different kinds of organisms and their diversities, but also the relationship among them. This branch of study is referred to as
a. Classification b. Systematics
c. Taxonomy d. All of the above

32. Which of the following are the basic processes of taxonomy?
a. Characterisation and classification
b. Identification and nomenclature
c. Both (a) and (b)
d. None of the above

33. Nomenclature or naming is only possible when the organism is described correctly and we know to what organism the name is attached to. This is known as
a. Taxonomy b. Classification
c. Identification d. Binomial system

34. There is a need to standardise the naming of living organisms such that a particular organism is known by the same name all over the world. This process is called
a. Systematics b. Nomenclature
c. Cytotaxonomy d. Taxonomy

35. In a scientific name, the name of the author is printed in
a. Capital letters b. Bold (antics)
c. Italics d. Abbreviated form

36. Which is not the component of taxonomy?
a. Identification b. Responsiveness
c. Nomenclature d. Classification

37. Which ensure that each organism has only one name all over the world?
a. Scientific name b. Local name
c. Trivial name d. All of the above

38. Which naming system is practised by biologists all over the world?
a. Binomial system b. Trivial system
c. Artificial system d. All of the above

39. The word systematics is derived from the *Systema* which is a
a. Latin word b. Greek word
c. English word d. Italic letter

40. The word 'systematics' refer to
a. Diversity of kinds of organisms and relationships among them
b. Identification and classification of organisms
c. Identification and nomenclature of organisms
d. Nomenclature and classification of organisms

41. Carl Linnaeus is famous for
a. Coining the term 'systematics'
b. Introducing binomial nomenclature
c. Giving all natural system of classification
d. All of these

Taxonomic Categories

42. Taxonomic hierachy is given. Select the correct match:

	Taxonomic category	Examples
a.	Class	Sapindales, Insecta
b.	Order	Primata, Diptera
c.	Genus	*Musca*, Poales
d.	Family	Triticum, Muscidae

43. Which of the following taxa has least number of similar characters?
a. Order b. Family
c. Division d. Class

44. In which of the following taxa, other three are included itself?
a. Phylum b. Order
c. Class d. Family

45. Unit of classification is
a. Taxon b. Rank
c. Category d. All of the above

46. Connecting link between kingdom and class, in plant hierarchy, is
a. Division b. Order
c. Family d. Class

47. Which is essential and is the prime source of taxonomic studies of plants and animals?
a. Identification
b. Nomenclature
c. Classification
d. Collection of actual specimens

48. 'Taxa' differs from 'taxon' due to
a. This being a higher taxonomic category than taxon
b. This being lower taxonomic category than taxon
c. This being the plural of taxon
d. This being the singular of taxon

49. The 'Birds' taxonomically represent
a. Family b. Order
c. Class d. Phylum

50. Identify the correct sequence of taxonomic categories
a. Species-Order-Kingdom-Phylum
b. Species-Family-Genus-Class
c. Genus-Species-Order-Phylum
d. Species-Genus-Order-Phylum

51. Which of the following taxa are not used by botanists?
a. Kingdom and order b. Phylum and Family
c. Suborder and variety d. Phylum and sub-species

52. Mark the odd one in the following:
a. Family b. Class
c. Taxon d. Phylum

53. Which of the following is included in the seven basic categories of the hierarchy?
a. Tribe b. Variety
c. Family d. Series

54. Fishes, amphibians, reptiles, birds and mammals constitute in the same category, called
a. Division b. Phylum
c. Order d. Class

Species

55. Each different kind of plant, animal or organism that you see, represents a
a. Species b. Genus
c. Population d. Family

56. Two individuals belongs to the same species if they
a. Are reproductively isolated
b. Are morphologically similar
c. Are interbreeding and produces infertile offspring
d. Are interbreeding and produce fertile offspring

57. The smallest unit of classification is
a. Family b. Order
c. Genus d. Species

58. Reproduction can occur within members of a
a. Species b. Genus
c. Order d. Family

Genus

59. Linnaeus put similar species into a larger group called the
a. Species b. Family
c. Kingdom d. Genus

60. Genus *Solanum* includes
A. Potato B. Brinjal
C. Datura D. Tulip
a. A and C b. A and B
c. A and D d. All of these

61. In a taxonomic hierarchy, genus is interpolated between
a. Kingdom and class b. Phylum and order
c. Order and species d. Family and species

62. The taxonomic category below the level of family is
a. Class b. Order
c. Phylum d. Genus

Family

63. The species (man, housefly, mango, wheat, dog, cat, lion, tiger, potato, brinjal, makoi and leopard) given here belong to how many different families?

a. 4 b. 7
c. 5 d. 6

64. In taxonomical hierarchy, the category below the level of order is

a. Class b. Species
c. Phylum d. Family

65. Family and order of *Triticum aestivum* (wheat) are

a. Poaceae, Monocotyledonae
b. Poaceae, Poales
c. Poales, Monocotyledonae
d. None is correct

66. The closest category of family is

a. Phylum b. Class
c. Division d. Order

67. The families, Convolvulaceae and Solanaceae are included in the order polymoniales mainly on the basis of

a. Vegetative characters b. Morphological characters
c. Floral characters d. Both (a) and (b)

68. Family of man (*Homo sapiens*) is:

a. Hominidae b. Hominini
c. Primata d. Ceboideae

69. The word ending with - *aceae* indicates:

a. Genera b. Family
c. Order d. Class

Order

70. If two plants belong to the same division but in different orders, they may belong to the same

a. Genus b. Family
c. Class d. Species

71. Order polymoniales include

a. Convolvulaceae b. Solanaceae
c. Both (a) and (b) d. None of these

72. Poales is the order of

a. Mango b. Wheat
c. Housefly d. Humans

73. The order generally ends with

a. -ales b. -aceae
c. -eae d. None of these

Phylum

74. Which of the following categories possess least number of related characters?

a. Order b. Phylum
c. Class d. Species

75. In case of plants, classes with a few similar characters are assigned to a higher category called

a. Phylum b. Division
c. Order d. Kingdom

76. The taxomomic unit 'Phylum' in the classification of animals is equivalent to which hierarchical level in classification of plants

a. Order b. Division
c. Class d. Family

Herbarium

77. Largest Herbarium in the world situated in

a. Kew b. L.A.
c. Johannesburg d. Brazil

78. Which of the following is the correct sequence of the various steps of herbarium formation?

1. Drying 2. Poisoning
3. Collection 4. Labelling
5. Mounting 6. Deposition
7. Stitching

a. 3 → 1 → 2 → 5 → 7 → 4 → 6
b. 3 → 2 → 4 → 5 → 6 → 7 → 1
c. 3 → 1 → 2 → 5 → 7 → 6 → 4
d. 3 → 1 → 2 → 7 → 5 → 6 → 4

79. Which of the following taxonomical aid serve as a quick referral systems in taxonomical studies?

a. Key b. Botanical gardens
c. Herbaria d. Museum

80. The chemical that is used in preparation of herbarium is

a. NAA
b. Mercuric chloride
c. Carbon disulphide
d. 2, 4-D

81. Which of the following provide ecological, economical and ethanobotanical data of any plant species?

a. Botanical garden b. Herbarium
c. Zoological park d. Monographs

Botanical Garden and Museum

82. Insects are preserved in insect boxes after

a. Collecting - Killing - Pinning
b. Killing - Collecting - Pinning
c. Killing - Pinning - Collecting
d. None of these

83. National Botanical Research Institute is located in
a. Chennai b. Lucknow
c. Darjeeling d. Kolkata

84. Which taxonomical aid has collection of preserved plant and animals specimens for study and reference?
a. Herbarium b. Key
c. Museum d. Botanical Garden

85. Which organism are placed in museum after collecting, killing and pinning?
a. Plants b. Mammals
c. Birds d. Insects

86. In museums, larger animals like birds and mammals are:
a. Collected, killed and pinned
b. Stuffed and preserved
c. Preserved in natural habitat
d. Both (a) and (b)

87. The collection of preserved plants and animals for study and reference is called:
a. Museum b. Keys
c. Herbarium d. Flora

88. Larger animals like birds and mammals are usually stuffed and preserved in
a. Herbarium b. Zoo
c. Zoological Parks d. Museum

89. Museum have the collection of
a. Insects specimens
b. Larger animal specimens
c. Skeleton of animals
d. All of the above

90. Royal Botanical Garden is located at
a. New Delhi b. Kolkata
c. Kew, England d. Lucknow

91. Amongst the given taxonomic aids, how many are related to preservation of specimens? [Monograph, Flora, Key, Museums, Botanical Gardens, Catalogue, Herbarium, Manual]
a. One b. Three
c. Two d. Four

92. The taxonomical aid(s) used for the identification of both plants and animals is/are
a. Keys b. Museum
c. Herbarium d. Both (a) and (b)

93. Each plant is labelled indicating its Botanical/Scientific name and its family. The taxonomical aid used for this is
a. Museum b. Herbarium
c. Botanical Garden d. All of the above

Zoological Parks

94. Which of the following is not a mode of on-site conservation of biodiversity?
a. National parks b. Cultural landscape
c. Natural monuments d. Zoological park

95. Wild animals are kept in protected environment in
a. Garden b. Museum
c. Biological parks d. Zoological parks

Taxonomical Keys

96. Each statement in key is called
a. Couplet b. Lead
c. Principle d. None of these

97. Which of the following provide information of any one taxon?
a. Manuals b. Monograph
c. Flora d. Fauna

98. Providing information for identification of names of species found in an area
a. Fauna b. Flora
c. Monograph d. Manuals

99. Couplet represents the choice made between two opposite options which results in
a. Rejection of both option
b. Acceptance of both the option
c. Either acceptance or rejection of both the option
d. Acceptance of only one and rejection of the other.

100. Taxonomical keys are
a. Analytical in nature
b. Taxonomical aid used for identification of both plants and animals
c. Based on the contrasting characters
d. All of the above

101. Which is useful in providing information for identification of names of species found in an area?
a. Flora b. Manuals
c. Monographs d. Catalogues

102. Keys are generally _____ in nature.
a. Physical b. Chemical
c. Analytical d. Qualitative

103. Which taxonomical aid help in correct identification?
a. Monograph b. Manuals
c. Flora d. All of the above

104. Which one of the taxonomic aids can give comprehensive account of complete compiled information of any one genus of family at a particular time?
a. Taxonomic key b. Flora
c. Herbarium d. Monograph

NCERT Based Questions

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1. As we go from species to kingdom in a taxonomic hierarchy, the number of common characteristics:

a. Will decrease
b. Will increase
c. Remain same
d. May increase or decrease

2. The term 'systematics' refers to:

a. Identification and study of organ systems
b. Identification and preservation of plants and animals
c. Diversity of kinds of organisms and their relationship
d. Study of habitats of organisms and their classification

3. Among the following, select the correct statements.

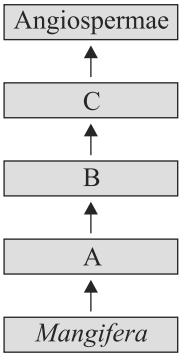
A. In majority of higher plants and animals, growth and reproduction are mutually exclusive events.
B. In non-living objects growth is by accumulation of material on the surface.
C. An isolated metabolic reaction outside the body of an organism, preformed in an test tube is neither living nor non-living.
D. All organisms, from the prokaryotes to the most complex eukaryotes can sense and respond to environmental cues.

a. B, C and D
b. A, B and C
c. A, D and C
d. All of these

4. The process by which anything grouped into convenient categories based on some easily observable characters is called

a. Systematics
b. New Systematics
c. Nomenclature
d. Classification

5. Recognise the following flow diagram and find the correct options according to taxonomic hierarchy.



a. 'A' is comparable to muscidae while 'B' is at the same level as that of primata.
b. 'C' includes all the angiosperms having two cotyledons in their seeds.
c. For wheat 'A' is poaceae, 'B' is poales and 'C' is monocotyledonae.
d. All of the above statements are correct.

6. Genus represents:

a. An individual plant or animal
b. A collection of plants or animals
c. Group of closely related species of plants or animals
d. A group of plants in a given area.

7. The taxonomic unit 'Phylum' in the classification of animals is equivalent to which hierarchical level in classification of plants:

a. Class
b. Order
c. Division
d. Family

8. Which of the following are true with reference to taxonomical aids?

A. Separate taxonomic keys are required for each taxonomic category.
B. Herbarium is a store house of collected plant and animal specimens.
C. Each statement in the key is called couplet.
D. Keys are used for identification purpose.

a. A and B
b. A and D
c. A and C
d. C and D

9. Select the wrong statements.

A. Lower the taxon, more are the characteristics that the members within the taxon share.
B. Order is the assemblage of genera which exhibit a few similar characters.
C. Cat and dog are included in the same family Felidae.
D. Binomial nomenclature was introduced by Carolus Linnaeus.

a. A, B and C
b. B, C and D
c. A and D
d. B and C

10. All living organisms are linked to one another because

a. They show common genetic material but to varying degree
b. They have common genetic material of the same type
c. All have common cellular organisation
d. All of the above

11. Botanical gardens and Zoological parks have:

a. Collection of endemic living species only
b. Collection of exotic living species only
c. Collection of endemic and exotic living species
d. Collection of only local plants and animals

12. Two animals belong to the same kingdom but different classes. They may belong to the same

a. Phylum
b. Order
c. Division
d. Family

13. Which of the following 'suffixes' used for units of classification in plants indicates a taxonomic category of 'family'?

a. —ales b. —onae

c. —aceae d. —ae

14. One of the most important functions of botanical garden is that

a. One can observe tropical plants there

b. They allow *ex situ* conservation

c. They provide the natural habitat for wildlife

d. They provide a beautyful area for recreation

15. Specific epithet is

a. First word in the scientific name of a species

b. Second name in the scientific name of a species

c. Both (a) and (b)

d. None of these

16. Which of the following has correct specific epithet?

a. *Indica mangifera* b. *Leo Panthera*

c. *Canis familiaris* d. *Ascaris*

17. Which of the following is a defining characteristic of living organisms?

a. Growth

b. Ability to make sound

c. Reproduction

d. Response to external stimuli

18. The practical purpose of classification of living organisms is to

a. Explain the origin of living organisms

b. Trace the evolution of living organisms

c. Name the living organisms

d. Facilitate identification of unknown organisms

19. The main purpose of classification of organisms is to

a. Locate plants and animals

b. Establish relationships amongst organisms

c. Study evolution

d. Both (b) & (c)

20. The scientific name of banyan is written as *Ficus bengalensis* L. which of the following is a correct statement regarding this?

a. Letter L signifies Latin language.

b. The name should be reverse with *bengalensis* preceding *Ficus*

c. Letter L signifies taxonomist Linnaeus

d. *Bengalensis* is generic name

21. Choose an appropriate option to complete the given statement. In plants, growth takes place by ____ throughout their life span.

a. Cell dedifferentiation b. Cell differentiation

c. Cell multiplication d. None of these

22. Taxonomic hierarchy refers to

a. Step-wise arrangment of all categories for classification of plants and animals

b. A group of senior taxonomists who decide the nomenclature of plants and animals

c. A list of botanists or zoologists who have worked on taxonomy of a species or group

d. Classification of a species based on fossil record

23. Artificial system of classification classifies plants on the basis of

a. One or two characters

b. Phylogenetic trends

c. Many naturally existing characters

d. None of the above

24. Few rules are written following regarding binomial nomenclature. Identity the wrong one:

a. Biological names are latinized and printed in italics

b. Generic and specific name starts with capital letter

c. Generic and specific name when hand written are underlined

d. All are correct

25. Family - order - class of *Musca domestica* (Housefly) are respectively:

a. Muscidae - Insecta - Hymenoptera

b. Muscidae - Diptera - Mandibulata

c. Hymenoptera - Insecta - Mandibuleta

d. Muscidae - Diptera - Insecta

26. Scientific name of Mango plant is *Mangifera indica* (Linn) Santapau. In the above name Santapau refers to

a. Variety of mango

b. A taxonomist who proposed the present nomenclature in honour of Linnaeus

c. A scientist who for the first time described mango plant

d. A scientist who changed the name proposed by Linnaeus and proposed present name

27. What characters are used for declaration of new species of higher plants?

a. Floral character of new species

b. Anatomical characters of new species

c. Physiological characters of new species

d. Character of endosperm

28. Match the following and choose the correct option.

A. Family	1. *Tuberosum*
B. Kingdom	2. Polymoniales
C. Order	3. *Solanum*
D. Species	4. Plantae
E. Genus	5. Solanaceae

a. A-4 B-3 C-5 D-2 E-1
b. A-5 B-4 C-2 D-1 E-3
c. A-4 B-5 C-2 D-1 E-3
d. A-5 B-3 C-2 D-1 E-4

29. The disadvantage of using common names for species is that
a. The name may change
b. One name does not apply universally
c. One species may have several common names and one common name may be applied to two species
d. All of the above

30. Which one of the following is a taxonomical aid for identification of plants and animals based on similarities and dissimilarities?
a. Flora
b. Keys
c. Monographs
d. Catalogues

31. Which of the following taxonomic categories is being described by the given statements (i-iii)?
(i) It is the basic unit of classification.
(ii) It is defined as the group of individuals which resemble in their morphological and reproductive characters and interbreed among themselves and produce fertile offsprings.
(iii) Human beings belong to the species *sapiens* which is grouped in the genus *Homo*.
a. Species
b. Genus
c. Order
d. Family

32. Plant species in botanical gardens are labeled to indicate
a. English and local name
b. Collectors name
c. Botanical name and family
d. Family and place of collection

33. The bracketed key in taxonomical identification provides
a. Sequence of choices between two or more characters
b. Polynomial system of nomenclature
c. Only one pair of contrasting statements
d. Same sequence of characters as in indented key

34. Which set of organisms reproduce by asexual mode of reproduction(fragmentation)?
a. *Amoeba*, fungi and earthworm
b. Earthworm, bacteria and fungi
c. *Hydra*, fungi, *Amoeba* and bacteria
d. Fungi, filamentous algae and protonema of mosses

35. Not applicable to zoological parks:
a. *In vivo* mode of conservation
b. Wild animals are kept under human care
c. Wild animals are kept in separate enclosures
d. All are true

36. Need for a proper system of classification arises because
a. The organisms of the past cannot be studied without it.
b. Classification help in knowing the relationship among the different group of organisms.
c. It is not possible to study every organism.
d. All of the above

Multi-Concept Questions

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1. Herbarium is:

a. A garden where medicinal plants are grown

b. Garden where herbaceous plants are grown

c. Dry garden

d. Chemical to kill plants

2. Incorrect statement are:

A. Animals, mammals, dogs, alsatians represent taxa at different levels.

B. Phenotypic plasticity is the ability of an organism to change its phenotype in response to environment.

C. Nomenclature is only possible when the organism is described correctly.

D. In animals, growth is seen only up to a certain age.

E. Non-living objects also grow if we take increase in body mass as a criteria of growth.

F. Human being is the only organism who is aware of himself.

a. C only b. B only

c. A only d. All are correct

3. Which one of the following branch is applicable to both plants and animals?

a. Herpetology b. Saurology

c. Taxonomy d. Ichthyology

4. Read the following and choose the correct combinations:

	Scientist		Coined the term
A.	A.P. de Candolle	1.	Biology
B.	Herbert Spencer	2.	Genetics
C.	Lamarck	3.	Taxonomy
D.	Ernst Haeckel	4.	Ecology
E.	Bateson	5.	Organic evolution

a. A-3 B-5 C-2 D-4 E-1

b. A-3 B-5 C-1 D-4 E-2

c. A-1 B-3 C-5 D-2 E-4

d. A-4 B-2 C-5 D-1 E-4

5. Read the following and choose the correct combinations:

A.	Species	1.	A group of similar individuals
B.	Family	2.	Includes related orders
C.	Division	3.	A group of related genera
D.	Class	4.	Occur below kingdom and above class

a. A-3 B-1 C-4 D-2

b. A-2 B-1 C-4 D-3

c. A-3 B-1 C-2 D-4

d. A-1 B-3 C-4 D-2

6. For higher plants, flowers are chiefly used as a basis of classification, because:

a. These show a great variety in colour

b. It can be preserved easily

c. Reproductive parts are more conservative than vegetative parts

d. They have strong fragrance

7. Which of the following species are restricted to a given area?

a. Sympatric species

b. Allopatric species

c. Sibling species

d. Endemic species

8. The most obvious & complicated feature of all living organisms is:

a. The ability to sense their surroundings or environment and respond to these environmental stimuli.

b. Reproduction - sexual or asexual - for production of progeny of own kind.

c. The ability to growth in size due to cell division.

d. Presence of complex organs systems such as digestive and nervous system.

9. Match the columns and find out the correct combination:

	Common name		Biological name
A.	Tobacco	1.	*Mangifera indica*
B.	Potato	2.	*Triticum vulgare*
C.	Brinjal	3.	*Nicotiana tabacum*
D.	Wheat	4.	*Solanum tuberosum*
		5.	*Solanum melongena*

a. A-4 B-3 C-1 D-2

b. A-3 B-4 C-5 D-2

c. A-1 B-2 C-3 D-4

d. A-2 B-1 C-4 D-3

10. The most convenient way for easy identification of plants and animals by applying diagnostic feature is use of

a. Herbarium b. Botanical gardens

c. Museum d. Taxonomic keys

11. Classification systems have many advantages. Which of the following is not a goal of biological classification?

a. To depict convergent evolution

b. To clarify relationships among organisms

c. To help us remember organisms and their traits

d. To identify and name organisms

12. Match the columns and find out the correct combination:

A.	Family	1.	*nigrum*
B.	Kingdom	2.	Polemoniales
C.	Order	3.	*Solanum*
D.	Species	4.	Plantae
		5.	Solanaceae

a. A-5 B-4 C-2 D-1

b. A-4 B-5 C-3 D-2

c. A-1 B-2 C-3 D-4

d. A-3 B-2 C-4 D-5

13. Match the columns and find out the correct combination:

A.	Couplet	1.	Information of any one taxon
B.	Lead	2.	Preserved specimen
C.	Monograph	3.	Specially designed for ready reference
D.	Manuals	4.	Each statement in the key
		5.	A pair of contrasting characters

a. A-5 B-4 C-1 D-3

b. A-4 B-2 C-3 D-1

c. A-1 B-3 C-2 D-4

d. A-3 B-1 C-4 D-2

14. Incorrect statement is:

a. Naming is only possible when the organism is described correctly.

b. Scientific names are based on the principles and criteria provided in ICBN.

c. Description of any organism should enable the people (in any part of the world) to arrive at the same name.

d. Category denotes rank, and these categories or ranks are merely morphological aggregates.

15. Choose the correct statements from following:

A. Taxonomic hierarchy includes seven obligate categories.

B. Haeckel introduced the taxon phylum.

C. Three - domain classification was introduced by Carl Woese.

a. A & B b. B & C

c. A & C d. All are correct

16. Read the following statements and identify the correct statements:

A. Biodiversity refers to the number and types of organisms present on earth.

B. The local names would vary from place to place, even within a country.

C. The number of species that are known and described range between 1.7-1.8 million.

D. International Code for Botanical Nomenclature (ICBN) provides scientific names for plants

E. Nomenclature or naming is only possible when the organism is described correctly.

a. A and B only b. A, B and C only

c. A, D and C only d. All of these

17. Read the following statements.

A. Isolated-metabolic reactions *in-vitro* are living things.

B. Reproduction is synonymous with growth in *Chlamydomonas*.

C. Reproduction is an all inclusive defining characteristic of living organisms.

D. Extrinsic growth cannot be taken as defining property of living organisms.

How many of the above statement (s) is/are not true?

a. One b. Two

c. Three d. Four

18. Consider the following statements and select correct set of option.

A. The most obvious and technically complicated features are metabolism and consciousness.

B. Growth and reproduction are mutually inclusive events for euglenoids and chrysophytes.

C. Generally, families and orders are identified on the basis of aggregates of vegetative characters only.

D. Herbarium serves as quick referral system in taxonomical studies.

a. B, C & D b. A, C & D

c. B & D d. A, B, C & D

19. Read the following statements and select the correct ones.

A. Increase in mass and increase in number of individuals are twin characteristics of growth

B. Metabolic reactions can be demonstrated outside the body in cell-free system

C. 'Feel or response to stimuli' is a defining property of living organisms

a. A and B b. B and C

c. A and C d. All of these

20. Which one of the following organisms is scientifically correctly named, correctly printed according to the International Rules of Nomenclature and correctly described?

a. *Musca domestica* - The common house lizard, a reptile.

b. *Plasmodium Falciparum* – A protozoan pathogen causing the most serious type of malaria.

c. *Felis tigris* - The Indian tiger, well protected in Gir forests.

d. *E.coli* - Full name Escherichia coli, a commonly occurring bacterium in human intestine.

21. Which of the following statements is not correct?

a. Biodiversity is occurrrence of variety of life forms differing in morphology, anatomy, habitats and habits.

b. Systematics is the branch of biology that deals with cataloguing plants, animals and other organisms into categories that can be named, remembered, compared and studied.

c. Taxonomy is the branch of biology that deals with principles and procedures of identification and nomenclature of organisms

d. Biodiversity is the study of aquatic life forms on the basis of morphological features only.

22. Select the incorrect statement with respect to the taxon, 'genus'.

a. It is a group or assemblage of related species

b. A genus essentially possesses more than one number of species.

c. Lion, Tiger, Leopard are closely related species which have been placed in the genus *Panthera* and are respectively named as *Panthera leo*, *P. tigris* and *P. pardus*.

d. *Solanum*, *Penicillium*, *Withania* and *Asparagus* are the examples of genera.

23. Read the following statements regarding biological museums:

A. Biological museums are generally set up in educational institutes such as schools and colleges

B. Museums have collections of preserved plant and animal specimens for study and reference

C. Specimens are preserved in the containers or jars in preservative solutions.

D. Insects are preserved in insect boxes after collecting, killing and pinning.

E. Larger animals like birds and mammals are usually stuffed and preserved

F. Skeletons of mammals are not allowed to be kept in museums

Which of the above statements is/are not correct?

a. B and C b. A and F

c. E only d. F only

24. Glucose is taken in test tube and acted upon by hexokinase enzyme. Resulting substrate is glucose - 6 - phosphate. This isolated metabolic reaction is:

a. Occurring in test tube which can be considered as living

b. Considered to be *in vivo*

c. Considered to be *in vitro* and living reaction.

d. Considered as non-living reaction

25. Which of the following combinations is correct for wheat ?

a. Genus : *Triticum*, Family : Anacardiaceae, Order : Poales, Class : Monocotyledonae

b. Genus : *Triticum*, Family : Poaceae, Order : Poales, Class : Dicotyledonae

c. Genus : *Triticum*, Family : Poaceae, Order : Sapindales, Class : Monocotyledonae

d. Genus : *Triticum*, Family : Poaceae, Order : Poales, Class : Monocotyledonae

26. Study the following statements regarding the preparation of herbarium sheets.

A. Herbaria serve as quick referral system.

B. Every details regarding the plant such as locality, ecological conditions, vegetative and floral characters, etc., should be noted.

C. Plants are evenly pressed by unfoloding all the plant parts between blotting papers (or newspapers) with the help of plant pressers.

D. Blotting papers need not be changed until the plant gets dried

E. After drying, the plant specimen is carefully mounted/ pasted on the herbarium sheets

F. The herbarium sheet is labelled on the lower right hand corner representing the local and botanical name, date of collection etc.

Which of the above statements is/are not correct

a. A only b. D only

c. A and D d. C and D

27. Read the following statements:

A. The taxonomic hierarchy for *Mangifera indica* can written as Plantae → Angiospermae → Dicotyledonae →Sapindales → Anacardiaceae → *Mangifera indica*

B. Tautonym is the taxonomic designation used for certain plants having trinomial nomenclature

C. Taxonomic keys are generally analytical in nature

D. Family Fabaceae is divided into three sub-families, i.e., Leguminosae, Mimosaceae and Caesalpiniaceae

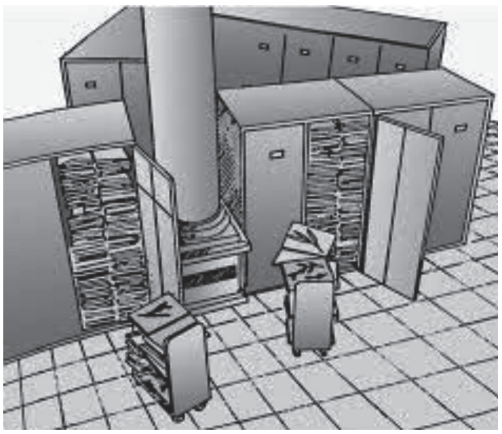
Which of the following combinations of above statements are correct?

a. A and B
b. A and C
c. C and D
d. A, C and D

28. Which of the following shows the correct example of taxonomic category - Genus?

a. Potato, tomato and brinjal belong to *Solanum*.
b. Monkey, gorilla and gibbon are placed in Mammalia.
c. *Solanum*, *Petunia*, and Datura are placed in Solanaceae.
d. *Mangifera* and *Panthera* belong to same genus *tuberosum*.

29. Which of the statement is correct regarding the figure given below?



a. Plant and animal species are dried, pressed and preserved on sheets.
b. It serves as quick referral systems in taxonomical studies.
c. These have collections of living plants for reference.
d. Children love visiting these places.

NEET Past 10 Year Questions

Scan for Video Solution

1. Select the correctly written scientific name of Mango which was first described by Carolus Linnaeus (2019)

a. *Mangifera indica* Car. Linn.

b. *Mangifera indica* Linn.

c. *Mangifera indica*

d. Mangifera Indica

2. Match the items given in Column I with those in Column II and select the correct option given below (2018)

	Column-I		Column-II
A.	Herbarium	i.	It is a place having a collection of preserved plants and animals.
B.	Key	ii.	A list that enumerates methodically all the species found in an area with brief description aiding identification
C.	Museum	iii.	Is a place where dried and pressed plant specimens mounted on sheets are kept.
D.	Catalogue	iv.	A booklet containing a list of characters and their alternates which are helpful in identification of various taxa.

a. A-i B-iv C-iii D-ii

b. A-iii B-ii C-i D-iv

c. A-ii B-iv C-iii D-i

d. A-iii B-iv C-i D-ii

3. Given below are the various taxonomic aids used in taxonomy which facilitate identification and classification of organisms. Which one of the following is wrong? (2017-Gujarat)

a. Keys, floras, manuals, monographs and catalogues are useful aids for identification of plants and animals

b. Herbarium is created to house live specimens of plant material

c. Museums are established to keep preserved specimens of animals and plants

d. Botanical gardens and Zoological parks are established to conserve and preserve live plants and animals respectively

4. Study the four statements (A–D) given below and select the two correct ones out of them: (2016 -II)

A. Definition of biological species was given by Ernst Mayr.

B. Photoperiod does not affect reproduction in plants.

C. Binomial nomenclature system was given by R.H. Whittaker.

D. In unicellular organisms, reproduction is synonymous with growth.

The two correct statements are

a. A and D b. A and B

c. B and C d. C and D

5. The label of a herbarium sheet does not carry information on: (2016 - II)

a. Local names

b. Height of the plant

c. Date of collection

d. Name of collector

6. Match Column–I with Column–II for housefly classification and select the correct option using the codes given below: (2016 - II)

	Column - I		Column - II
A.	Family	(i)	Diptera
B.	Order	(ii)	Arthropoda
C.	Class	(iii)	Muscidae
D.	Phylum	(iv)	Insecta

Codes:

a. A-iv B-iii C-ii D-i

b. A-iv B-ii C-i D-iii

c. A-iii B-i C-iv D-ii

d. A-iii B-ii C-iv D-i

7. Which one of the following is not a correct statement? (2013)

a. Key is a taxonomic aid for identification of specimens.

b. Herbarium houses dried, pressed and preserved plant specimens.

c. Botanical gardens have collection of living plants for reference.

d. A museum has collection of photographs of plants and animals.

8. Which of the following organisms is scientifically correctly named, correctly printed according to International Rules of Nomenclature and correctly described? (2012 Mains)

a. *Musca domestica*-The common house lizard, a reptile

b. *Plasmodium falciparum*-A protozoan pathogen causing the most serious type of malaria

c. *Felis tigris*-The Indian tiger, well protected in Gir Forests.

d. E.coli-Full name *Entamoeba coli*, a commonly occurring bacterium in human intestine.

9. Which one of the following aspects is an exclusive characteristic of living things? (2011 Mains)

a. Perception of events happening in the environment and their memory

b. Increase in mass by accumulation of material both on surface as well as internally

c. Isolated metabolic reactions occur *in vitro*

d. Increase in mass from inside only

10. Biodiversity of a geographical region represents: (2011 Mains)

a. Genetic diversity present in the dominant species of the region

b. Species endemic to the region

c. Endangered species found in the region

d. The diversity in the organisms living in the region

11. Which one of the following animals is correctly matched with its particular named taxonomic category? (2011 Pre)

a. Housefly - *Musca*, an order

b. Tiger - *Tigris*, the species

c. Cuttlefish - Mollusca, a class

d. Humans - Primata, the family

Answer Key

Topic-wise Questions

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18
a	c	a	d	c	c	a	b	a	d	c	a	b	d	a	d	a	a
19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36
b	d	b	a	c	b	c	a	d	b	a	a	b	c	c	b	d	b
37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54
a	a	a	a	b	b	c	a	d	a	d	c	c	d	d	c	c	b
55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72
a	d	d	a	d	b	d	d	b	d	b	d	c	a	b	c	c	b
73	74	75	76	77	78	79	80	81	82	83	84	85	86	87	88	89	90
a	b	b	b	a	a	c	b	b	a	b	c	d	b	a	d	d	c
91	92	93	94	95	96	97	98	99	100	101	102	103	104				
c	d	d	d	d	b	b	d	d	d	b	c	d	d				

NCERT Based Questions

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18
a	c	d	d	d	c	c	b	d	a	c	a	c	b	b	c	d	d
		21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36
d	c	c	a	a	b	d	d	a	b	d	b	a	c	c	d	a	d

Multi-Concept Questions

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18
c	d	c	b	d	c	d	a	b	d	a	a	a	d	d	d	b	c
19	20	21	22	23	24	25	26	27	28	29							
d	b	d	b	d	c	d	b	d	a	b							

NEET Past 10 Year Questions

1	2	3	4	5	6	7	8	9	10	11
b	d	b	a	b	c	d	b	a	d	b