

SAMPLE CONTENT

Absolute



NEET-UG

BIOLOGY Vol - I

For all Medical Entrance Examinations held across India.

3239 MCQs with Hints

As per
latest syllabus
issued by
NMC

Classification:

Kingdom : Animalia
Phylum : Chordata
Class : Mammalia
Genus : *Panthera*
Species : *pardus*



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Absolute

NEET (UG)

Biology Vol. I

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Salient Features

- ☞ Comprehensive theory for every topic
- ☞ Subtopic-wise segregation of MCQs for efficient practice
- ☞ Exhaustive coverage of questions including questions from previous years' NEET (UG) and other competitive examinations upto year **2024**:
 - **3356** MCQs
 - Solutions to the questions are provided for better understanding
- ☞ Includes **Smart Keys**: Multiple study techniques to enhance understanding and problem solving:
 - ***Smart Code*** - ***Smart tip*** - ***Caution***
 - ***Think out of the box***
- ☞ Quick Review provided at the end of every chapter to facilitate quick revision
- ☞ Neat and labelled authentic diagrams
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 - NEET (UG) 2024
- ☞ Topic Test provided in each chapter for self-assessment
- ☞ Q.R. codes provide:
 - Video/PDF links for boosting conceptual retention
 - Answers & Solutions to Topic Tests
 - Solutions of NEET (UG) 2024 question paper

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PREFACE

‘Absolute Biology Vol - I’ is a complete guidebook, extremely handy for the preparation of various competitive examinations like NEET (UG). This edition provides an unmatched comprehensive amalgamation of theory with MCQs. The chapters are compiled according to the latest syllabus for **NEET (UG) 2024** examination. Although the alignment runs parallel to NCERT curriculum, the structure of the chapters prioritizes knowledge building of the students. The book provides the students with scientifically accurate context, several study techniques and skills required to excel in these examinations.

In this book, the Theoretical Concepts are presented elaborately along with diagrams that enable better preparation of the basics of topics for any competitive examination.

The MCQs are framed considering the importance given to every topic as per the NEET (UG) exam to form a strong foundation. They are a healthy mix of questions based on higher order thinking, theory and diagram based concepts.

The level of difficulty of these questions is at par with that of various competitive examinations held across India. Questions from various examinations such as NEET (UG), MHT CET, AIIMS, CPMT, AFMC, JIPMER, TS EAMCET, BCECE, AP EAMCET, AP EAPCET are covered.

Features in each chapter:

- Coverage of ‘**Theoretical Concepts**’ that form a vital part of any competitive examination.
- ‘**Multiple Choice Questions**’ are segregated topic-wise to enable easy assimilation of questions based on the specific concept.
- ‘**Quick Review**’ covers all tables/ flow charts to summarize the key points in chapter, making it useful for students to glance at while revising at the last minute.
- ‘**Topic Test**’ has been provided at the end of each chapter to assess the level of preparation of the student on a competitive level.

All the features of this book pave the path of a student to excel in their examinations. The features are designed keeping the following elements in mind: Time management, easy memorization or revision and non-conventional yet simple methods for MCQ solving.

To keep students updated, the book covers selective solved questions of **NEET (UG) 2024** to offer students a glimpse of the complexity of questions asked in entrance examination.

We hope the book benefits the learner as we have envisioned.

A book affects eternity; one can never tell where its influence stops.

Publisher

Edition: Eighth

The journey to create a complete book is strewn with triumphs, failures and near misses. If you think we’ve nearly missed something or want to applaud us for our triumphs, we’d love to hear from you.

Please write to us on: mail@targetpublications.org

Disclaimer

This reference book is based on the NEET (UG) syllabus prescribed by National Testing Agency (NTA). We the publishers are making this reference book which constitutes as fair use of textual contents which are transformed by adding and elaborating, with a view to simplify the same to enable the students to understand, memorize and reproduce the same in examinations.

This work is purely inspired upon the course work as prescribed by the National Council of Educational Research and Training (NCERT). Every care has been taken in the publication of this reference book by the Authors while creating the contents. The Authors and the Publishers shall not be responsible for any loss or damages caused to any person on account of errors or omissions which might have crept in or disagreement of any third party on the point of view expressed in the reference book.

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KEY FEATURES

Glossary



Glossary

'Glossary' provides the simplified explanations of certain difficult words encountered in the chapter.



Scientists and their contributions

'Scientists and their contributions' provide a list of renowned scientists studied throughout the chapter and their discoveries/ inventions.

Scientists and their contributions

Smart Keys

Smart Keys

'Smart Keys' comprise a set of remarkable study techniques contrived to benefit students.



Caution

'Caution' apprises students about mistakes which are made while solving an MCQs.

Caution

Smart Tips



Smart tip

'Smart Tips' comprise important short tricks considering their usage in solving MCQ.
This is our attempt to highlight content that would come handy while solving questions.



Smart code

'Smart code' provides simplified mnemonics for important or difficult concepts.

Smart code

Think out of the box

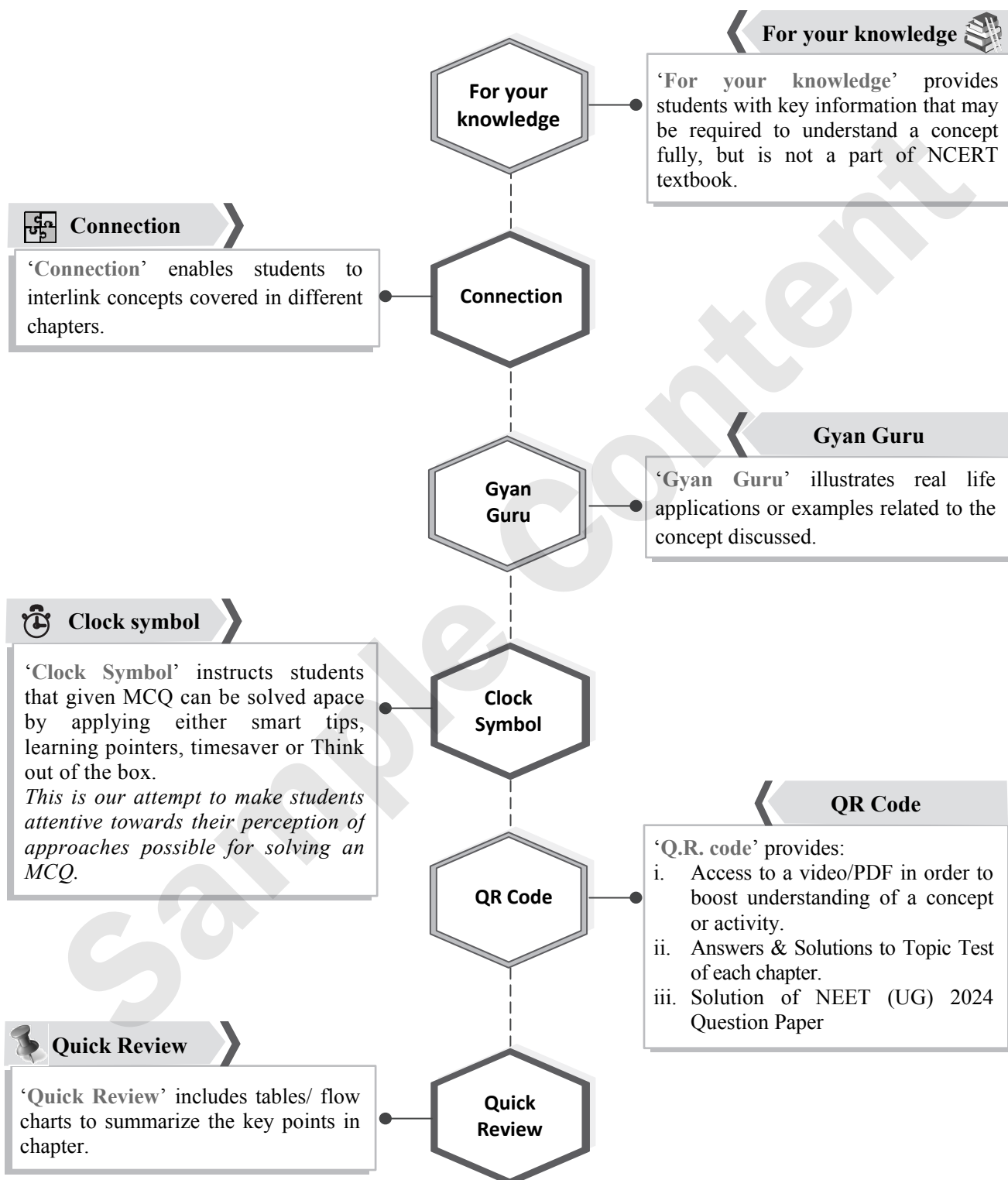


Think out of the box

'Think out of the box' reveals quick witted approach to crack the specific question.
This is our attempt to develop skill of lateral thinking in students.

To be continued...

KEY FEATURES



Frequently Asked Questions

➤ Why Absolute Series?

Gradually, every year the nature of competitive entrance exams is inching towards conceptual understanding of topics. Moreover, it is time to bid adieu to the stereotypical approach of solving a problem using a single conventional method.

To be able to successfully crack the NEET (UG) examinations, it is imperative to develop skills such as data interpretation, appropriate time management, knowing various methods to solve a problem, etc. With Absolute Series, we are sure, you'd develop all the aforementioned skills and take a more holistic approach towards problem solving. The way you'd tackle advanced level MCQs with the help of Hints, Smart tips, Smart codes and Think out of the box would give you the necessary practice that would be a game changer in your preparation for the competitive entrance examinations.

➤ What is the intention behind the launch of Absolute Series?

The sole objective behind the introduction of Absolute Series is to cater to needs of students across a varied background and effectively assist them to successfully crack the NEET (UG) examinations. With a healthy mix of MCQs, we intend to develop a student's MCQ solving skills within a stipulated time period.

➤ What do I gain out of Absolute Series?

After using Absolute Series, students would be able to:

- assimilate the given data and apply relevant concepts with utmost ease.
- tackle MCQs of different pattern such as match the columns, diagram based questions, multiple concepts and assertion-reason efficiently.
- garner the much needed confidence to appear for competitive exams.
- apply easy and time saving methods to tackle tricky questions which will help ensure that time consuming questions do not occupy more time than you can allot per question.

➤ How to derive the best advantage of the book?

To get the maximum benefit of the book, we recommend :

- Go through the detailed theory at the beginning of a chapter for concept clarity. Commit Smart Tips and Smart Codes into memory and pay attention to Caution.
- Using subtopic wise segregation as a leverage, complete MCQs in each subtopic at your own pace. Questions from exams such as NEET (UG) are tagged and placed along the flow of subtopic. Mark these questions specially to gauge the trends of questions in various exams.
- Be extra receptive to Think out of the box and application of Smart Tips and Smart Codes. Assimilate them into your thinking.

Best of luck to all the aspirants!

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Solving previous year papers is the best way to work on your strength, weaknesses, and time management.

Scan the adjacent QR Code to know more about our **"37 Years NEET Biology PSP (Previous Solved Papers)"** book for the NEET UG Entrance examination.



Get an overall idea of the type of questions that are asked in the NEET UG Examination. Scan the adjacent QR Code to know more about our **"Previous 12 Years NEET solved papers with Solutions"** book for the NEET UG Entrance examination.



Practice test Papers are the only way to assess your preparedness for the Exams.

Scan the Adjacent QR code to know more about our **"NEET (UG) Biology Test Series with Answer Keys & Solutions"** book for the NEET UG Entrance examination.



Do you want to improve your score of NEET-UG Examination?

Scan the Adjacent QR code to know more about our **"NEET UG 10 Full Syllabus Mock Tests"** book.



1

The Living World

- What is Living?
- Diversity in the Living World

- Taxonomic Categories

WHAT IS 'LIVING'?

Living organisms have features like growth, reproduction, ability to sense environment and mount a suitable response, metabolism, ability to self-replicate, self-organize, interact and emergence[©].

Characteristics of Living Organisms:

➤ **Growth:**

i. Living Organisms:

- All living organisms grow.
- Growth is from inside.
- Two characteristics of growth are increase in mass and number of individuals.
- A multicellular organism grows by cell division. Growth by cell division occurs continuously throughout their life span in plants and in animals it occurs up to certain age.
- Cell division also occurs in unicellular organisms.
- Increase in body mass is considered as growth.

ii. Non-living objects:

- If increase in body mass is considered as growth, non-living objects do grow.
- It is exhibited by accumulation of material on the surface.
- Mountains, boulders and sand mounds also grow.

➤ **Reproduction:**

- A process by which multicellular organisms produce a progeny that possess features similar to parents is called reproduction (Sexual Reproduction).
- Fungi reproduce asexually by spreading their asexual spores.
- Yeast and *Hydra* reproduce by budding.
- True regeneration is observed in *Planaria*. Their fragmented organism regenerates the lost part of the body and becomes a new organism.
- Fungi, filamentous algae, the protonema of mosses multiply by fragmentation.
- Reproduction is synonymous with growth i.e. increase in number of cells in unicellular organisms like bacteria, algae, *Amoeba*.
- Mules, sterile worker bees, infertile human couples, etc. cannot reproduce.
- A non-living object is incapable of reproducing or replicating by itself.

➤ **Metabolism:**

- All living organisms are made up of chemicals.
- Chemicals belong to various classes and sizes etc. are constantly being made and changed into some other biomolecule. These conversions are called chemical or metabolic reactions.
- All plants, animals, fungi and microbes exhibit metabolism.
- A non-living object does not exhibit metabolism.
- Metabolic reactions carried out *in vitro* are living reactions.

➤ **Cellular Organization:**

Metabolism occurs inside the cells. All living organisms have some or the other cell organelles like nucleus, protoplasm, mesosome, capsule, etc., that make up the cell.

➤ **Consciousness:**

- It is the most complicated feature of all living organisms.
- With the help of sense organs humans sense the environment. Human being is the only organism who has self-consciousness.



- iii. Plant responds to external factors like light, water, temperature, other organisms and pollutants, etc.
- iv. From prokaryotes to eukaryotes all respond to environmental stimuli.
- v. Photoperiod affects reproduction in seasonal breeders - plants as well as in animals.



CAUTION

Consciousness is the state of being aware and responsive to one's own surroundings. All living organisms exhibit consciousness.

Self-consciousness is the state of being aware of not only the surroundings, but also of themselves, their activities, their bodies and mental lives. Only human beings exhibit self-consciousness.



Smart tip - 1

Characteristics of life can be categorized into two:

- i. **Defining properties:** Metabolism, cellular organization, consciousness
- ii. **Non-defining properties:** Reproduction, growth

DIVERSITY IN THE LIVING WORLD

➤ Biodiversity:

- i. Biodiversity encompasses all forms of life with variety and variability amongst them.
- ii. The number of species that are known and described range between 1.7 – 1.8 million.

➤ Identification:

Identification is finding the correct name and place of an organism in a system of classification with the help of identification key.

It also includes comparing an organism with similarities and dissimilarities of already known organisms.

➤ Nomenclature:

- i. The need to standardise the naming of living organisms is to make it unique.
- ii. Nomenclature provides a distinct and proper name to an organism. Thus, it becomes easy to recognize and differentiate a particular organism from others.
- iii. Scientific names are based on certain principles evolved by taxonomists[®]:
 - a. For plants, provided by International Code for Botanical Nomenclature (ICBN).
 - b. For animals, provided by International Code for Zoological Nomenclature (ICZN).
- iv. Scientific names ensure that each organism has only one name and that name is not used for any other organism.

Binomial Nomenclature:

- a. It is the system of providing a name with two components, viz. the **generic name** and the **specific epithet**[®]. For e.g. Man: *Homo sapiens*

This naming system was given by Carolus Linnaeus.

b. Universal rules of binomial nomenclature are as follows:

- 1. Biological names are generally in Latin and written in italics (when printed) or underlined (when handwritten).
- 2. The first word is the genus name and the second word is the specific epithet.
- 3. The genus name starts with a capital letter and the specific epithet is written in small letters.
- 4. Also, the author's name appears after the specific epithet.
For e.g. *Mangifera indica* Linn. (Linn indicates that this species was first described by Linnaeus)

➤ Classification:

It is the process by which organism is grouped into convenient categories based on some characters.

Two branches of classification: **Taxonomy and Systematics**.

i. Taxonomy:

- a. It is the process of classification of all living organisms into different taxa based on their characteristics.
- b. Organisms are grouped into convenient categories based on some easily observable characteristics. The scientific term for these categories is **taxa**.



- c. External and internal structure, along with the structure of cell, development process and ecological information of organisms are essential and form the basis of modern taxonomic studies.
 - d. Characterisation, identification, classification and nomenclature are the processes that are basic to taxonomy.
- ii. **Systematics:**
- a. It is the study of relationships among different kinds of organisms and their diversities.
 - b. Linnaeus used *Systema Naturae* as the title of his publication. The word *Systema* is derived from Latin which means systematic arrangement of organism.
 - c. Systematics includes identification, nomenclature and classification. It also accounts evolutionary relationships between organisms.

TAXONOMIC CATEGORIES

- i. Classification involves hierarchy of steps where each step represents a rank or a category.
- ii. **Taxonomic Category:** Overall taxonomic arrangement.
- iii. **Taxonomic Hierarchy:** All categories together constitute taxonomic hierarchy.
- iv. **Taxon (also known as rank):** Unit of classification.
- v. An organism is placed into various categories by their characteristics.



Smart tip - 2

Taxonomic categories showing hierarchical arrangement in descending order / Similarities between organisms increase in this order:

KINGDOM → PHYLUM → CLASS → ORDER → FAMILY → GENUS → SPECIES

- **Species:** It is a group of individuals with morphological similarities and is capable of interbreeding and producing fertile offsprings.
e.g. *Mangifera indica* (Mango), *Solanum tuberosum* (Potato) and *Panthera leo* (Lion). Here, *indica*, *tuberosum* and *leo* represent the specific epithets which denotes the species.
A genus may have more than one species as in *Panthera leo* (lion), *Panthera pardus* (leopard), *Panthera tigris* (tiger). Usually individuals of one species do not interbreed with individuals of other species.
Humans belong to species *sapiens* which is grouped in the genus *Homo*. The scientific name for human being is *Homo sapiens*.
- **Genus:** It is a group of related species, which shows several common characters in comparison to species of other genera.
e.g. Potato (*Solanum tuberosum*) and brinjal (*Solanum melongena*) belongs to same genus *Solanum* but are different species.
Lion (*Panthera leo*), leopard (*Panthera pardus*) and tiger (*Panthera tigris*) show many common features because they belong to the same genus *Panthera*, but this genus differs from genus *Felis* which includes cats.
- **Family:** It is a group of related genera with lesser number of common characters in comparison to genus and species. It is characterized on the basis of vegetative and reproductive features.
Genera *Solanum*, *Petunia* and *Datura* are placed in the family Solanaceae.
Panthera (lion, tiger, leopard, etc) and *Felis* (cats) are placed in the family Felidae.
Dogs and cats have some similarities and some differences. They are separated onto two different families – Felidae and Canidae respectively.



Smart tip - 3

Name of the family usually ends with “idae” in animals and “aceae” in plants.

- **Order:** It is an assemblage of families which exhibit a few similar characters.
The similar characters are less in number as compared to different genera included in a family.
Plant families like Convolvulaceae, Solanaceae are included in order Polymoniales on the basis of the floral characters.
Order Carnivora includes families like Felidae and Canidae.

[Note: The Solanales are an order of flowering plants including plant families like Convolvulaceae and Solanaceae. Some older sources used the name Polemoniales for this order.]



- **Class:** It includes related orders.
Order Primata includes monkey, gorilla and gibbon and order Carnivora includes animals like tiger, cat and dog. Both the orders are placed under class Mammalia.
- **Phylum:** Phylum includes organisms belonging to different classes having very few characteristics in common.
Classes of animals like fishes, amphibians, reptiles, birds along with mammals constitute a higher category called Phylum.
Based on features like presence of notochord, dorsal hollow neural system they are included in phylum Chordata.



CAUTION

In case of plants, classes with similar characters are assigned to higher category called **Division**. It is equivalent to **Phylum**.

- **Kingdom:**
It is the highest category.
In the classification system of animals, all animals belonging to various phyla are assigned to highest category called Kingdom Animalia.
Similarly all plants from various divisions are placed under Kingdom Plantae.



Smart code - 1

Taxonomic Categories

Kids Prefer Candy Over Fried Green Spinach

K – Kingdom, **P** – Phylum, **C** – Class, **O** – Order, **F** – Family, **G** – Genus, **S** – Species

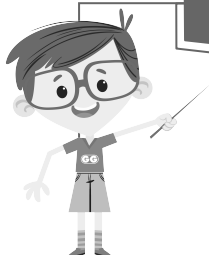
- **Organisms with their Taxonomic Categories**

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

GG - Gyan Guru

Tautonym

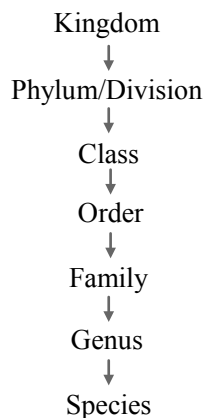
It is a specific name in which the same word is used for genus as well as species.
Examples of tautonyms are as follows: *Bison bison* – American bison, *Gorilla gorilla* – Western gorilla, *Mola mola* – Ocean sunfish, *Bubo bubo* – Eurasian eagle owl, *Natrix natrix* – European grass snake.





Quick Review

Taxonomic Categories



Hierarchical category	Scientific classification	Examples of Organisms included (Common name)
Kingdom	Animalia	Squirrel, Snail, Beetle, Jellyfish, Lizard, <i>Planaria</i> , Lion, Human, Whale, Leopard, Dog, Cheetah
Phylum/ Division	Chordata	Squirrel, Lizard, Lion, Human, Whale, Leopard, Dog, Cheetah
Class	Mammalia	Squirrel, Lion, Human, Whale, Leopard, Dog, Cheetah
Order	Carnivora	Lion, Leopard, Dog, Cheetah
Family	Felidae	Lion, Leopard, Cheetah
Genus	<i>Panthera</i>	Lion, Leopard
Species	<i>Panthera leo</i>	Lion

Number of common characteristics between organisms increases



Glossary

Word	Meaning
Couplet	Pair of sentences in a taxonomic key that are mutually exclusive and contrasting to each other.
Emergence	Emergence occurs when an entity is observed to have properties its parts do not have on their own. These properties or behaviors emerge only when the parts interact in a wider whole. e.g. Emergent structures are a common strategy found in many animal groups: colonies of ants, mounds built by termites, swarms of bees.
Taxonomist	Biologist that groups organisms into categories.
Specific epithet	Species name



Multiple Choice Questions

WHAT IS LIVING?

- All living organisms are linked to one another because [NCERT Exemplar]
 - they have common genetic material of the same type
 - they share common genetic material but to varying degrees
 - all have common cellular organisation
 - all of the above
- How many of the following properties are the defining characteristics of living organisms? Growth, reproduction, metabolism, cellular organisation, consciousness.

- (A) 5 (B) 3
(C) 2 (D) 4



3. Match the Column-I with Column-II and select the correct option:

	Column I		Column II
i.	Increase in number of cells	a.	Consciousness
ii.	Chemical reactions	b.	Reproduction
iii.	Response to stimuli	c.	Metabolism
iv.	Budding	d.	Growth

- (A) i – a, ii – b, iii – d, iv – c
(B) i – d, ii – c, iii – a, iv – b
(C) i – b, ii – c, iii – a, iv – d
(D) i – d, ii – b, iii – c, iv – a



4. Which of the following is a defining characteristic of living organisms?
[NCERT Exemplar]
- (A) Growth
(B) Ability to make sound
(C) Reproduction
(D) Response to external stimuli
5. Self-consciousness is the property of
- (A) human beings only
(B) prokaryotes only
(C) all living organisms
(D) eukaryotes only
6. Which of the following cannot reproduce?
- (A) *Amoeba* (B) Mule
(C) Fungi (D) *Planaria*
7. Which amongst the following multiply by fragmentation?
- (A) *Planaria* (B) *Amoeba*
(C) Bacteria (D) Virus
8. **Assertion:** True regeneration can be observed in *Planaria*.
Reason: A fragmented *Planaria*, regenerates the lost part of its body and develops into a new organism.
- (A) Both assertion and reason are true and reason is the correct explanation of assertion.
(B) Both assertion and reason are true but reason is not the correct explanation of assertion.
(C) Assertion is true but reason is false.
(D) Both assertion and reason are false.
9. Regeneration as a method of asexual reproduction is observed in _____.
[MHT CET 2018]
- (A) *Ascaris* (B) *Planaria*
(C) Prawn (D) *Salmonella*
10. Select the MISMATCHED pair from the following.
- (A) Fungi – Asexual spores
(B) Yeast – Budding
(C) *Amoeba* – Binary fission
(D) Protonema – True regeneration

DIVERSITY IN THE LIVING WORLD

1. Who gave the nomenclature according to which humans are called *Homo sapiens*?
[BCECE 2015]
- (A) Darwin (B) Mendel
(C) Aristotle (D) Linnaeus

2. Which one of the following is true for the given sentence?
For the plants, scientific names are provided by
- (A) International Code for Botanical Nomenclature
(B) International Code for Biological Nomenclature
(C) International Class for Botanical Nomenclature
(D) International Class for Biological Nomenclature
3. Animal taxonomists have named the animals according to
- (A) Indian Code for Zoology Nomenclature
(B) International Class for Zoology Nomenclature
(C) International Classification for Zoological Nomenclature
(D) International Code for Zoological Nomenclature
4. Which of the following is against the rules of ICBN? [NEET (UG) Odisha 2019]
- (A) Generic and specific names should be written starting with small letters.
(B) Hand written scientific names should be underlined.
(C) Every species should have a generic name and a specific epithet.
(D) Scientific names are in Latin and should be italicized.
5. Nomenclature is governed by certain universal rules. Which one of the following is contrary to the rules of nomenclature? [NEET (UG) P-I 2016]
- (A) The names are written in Latin and are italicised.
(B) When written by hand, the names are to be underlined.
(C) Biological names can be written in any language.
(D) The first word in a biological name represents the genus name, and the second is a specific epithet.
6. Opt for the appropriate way of writing biological name from below
- (A) *Mangifera Indica*
(B) *Panthera leo*
(C) *Solanum tuberosum*
(D) *solanum nigrum*
7. Select the correctly written scientific name of Mango which was first described by Carlous Linnaeus: [NEET (UG) 2019]
- (A) *Mangifera indica*
(B) *Mangifera Indica*
(C) *Mangifera indica* Car. Linn.
(D) *Mangifera indica* Linn.



8. 'X' and 'Y' are the components of Binomial nomenclature. This naming system was proposed by 'Z': [NEET (UG) Manipur 2023]
(A) X – Specific epithet, Y – Generic name, Z – Carolus Linnaeus
(B) X – Generic name, Y – Specific epithet, Z – R.H. Whittaker
(C) X – Generic name, Y – Specific epithet, Z – Carolus Linnaeus
(D) X – Specific epithet, Y – Generic name, Z – R.H. Whittaker
9. Which of the following ensures that each organism has only one name all over the world?
(A) Local name
(B) Scientific name
(C) Vernacular name
(D) All of the above
10. **Assertion:** As we explore different areas, new organisms are being identified.
Reason: Vernacular names are chosen for nomenclature of newly found organisms.
(A) Both assertion and reason are true and reason is the correct explanation of assertion.
(B) Both assertion and reason are true but reason is not the correct explanation of assertion.
(C) Assertion is true but reason is false.
(D) Both assertion and reason are false.
11. Need for a proper system of classification arises because
(A) the organisms of the past cannot be studied without it.
(B) it helps in knowing the relationships among the different groups of organisms.
(C) it is not possible to study every organism.
(D) all of these
12. Branch of science dealing with classification is
(A) taxonomy (B) anatomy
(C) morphology (D) biology
13. **Assertion:** The study of classification of organisms is called taxonomy.
Reason: Taxonomy and systematics have the same meaning.
(A) Both assertion and reason are true and reason is the correct explanation of assertion.
(B) Both assertion and reason are true but reason is not the correct explanation of assertion.
(C) Assertion is true but reason is false.
(D) Both assertion and reason are false.

14. The term 'systematics' refers to [NCERT Exemplar]
(A) identification and study of organ systems.
(B) identification and preservation of plants and animals.
(C) diversity of different kinds of organisms and their relationship.
(D) study of habitats of organisms and their classification.

TAXONOMIC CATEGORIES

1. The serial arrangement of taxon is known as
(A) Category
(B) Classification
(C) Hierarchy
(D) Taxonomy
2. Lowest category in the hierarchical system of classification is _____. [MHT CET 2019]
(A) species
(B) order
(C) kingdom
(D) genus
3. Which is the highest in the hierarchy of taxonomic category? [BCECE 2015]
(A) Genus (B) Family
(C) Order (D) Class
4. As we go from species to kingdom in a taxonomic hierarchy, the number of common characteristics [NCERT Exemplar]
(A) will decrease
(B) will increase
(C) remain same
(D) may increase or decrease
5. In a taxonomic hierarchy, the number of characters will increase as we go from [KCET 2016]
(A) Class to Order
(B) Species to Kingdom
(C) Genus to Species
(D) Kingdom to Species
6. Which of the following taxonomical ranks contain organisms, least similar to one another?
(A) Class (B) Genus
(C) Family (D) Species
7. A group of plants with similar traits of any rank is
(A) species (B) genus
(C) order (D) taxon
8. Which of the following is NOT a taxon but category?
(A) Division
(B) Dicotyledons
(C) Angiosperms
(D) Monocotyledonae



9. In the system of classification, which one of the following is NOT a category?

[MHT CET 2018]

- (A) Kingdom (B) Series
(C) Angiospermae (D) Genus

10. In the taxonomic categories which hierarchical arrangement in ascending order is correct in case of animals?

[NEET (UG) 2022]

- (A) Kingdom, Order, Class, Phylum, Family, Genus, Species
(B) Kingdom, Order, Phylum, Class, Family, Genus, Species
(C) Kingdom, Phylum, Class, Order, Family, Genus, Species
(D) Kingdom, Class, Phylum, Family, Order, Genus, Species

11. The correct sequence of taxonomic hierarchy is

[KCET 2018]

- (A) Genus → Family → Class → Order → Phylum → Kingdom → Species
(B) Species → Genus → Family → Order → Class → Phylum → Kingdom
(C) Species → Family → Genus → Kingdom → Order → Class → Phylum
(D) Species → Genus → Family → Class → Order → Phylum → Kingdom

12. Genus represents

[NCERT Exemplar]

- (A) an individual plant or animal
(B) a collection of plants or animals
(C) group of closely related species of plants or animals
(D) none of these.

13.



Choose the correct classification of the given picture of the animal.

	Phylum	Class	Order	Family	Genus	Species
(A)	Chordata	Vertebrata	Primata	Felidae	<i>Panthera</i>	<i>leo</i>
(B)	Chordata	Mammalia	Carnivora	Felidae	<i>Panthera</i>	<i>leo</i>
(C)	Vertebrata	Mammalia	Carnivora	Canidae	<i>Canis</i>	<i>leo</i>
(D)	Vertebrata	Mammalia	Primata	Canidae	<i>Canis</i>	<i>leo</i>

14. Select the correct option to complete the given table.

Common name	Biological name	Phylum/ Division	Class	Order	Family	Genus
Man	<i>Homo sapiens</i>	Chordata	Mammalia	Primata	(i)	<i>Homo</i>
Housefly	<i>Musca domestica</i>	Arthropoda	Insecta	(ii)	Muscidae	<i>Musca</i>
Mango	<i>Mangifera indica</i>	Angiospermae	(iii)	Sapindales	Anacardiaceae	<i>Mangifera</i>
Wheat	<i>Triticum aestivum</i>	(iv)	Monocotyledonae	Poales	Poaceae	<i>Triticum</i>

	i.	ii.	iii.	iv.
(A)	Hominidae	Diptera	Dicotyledonae	Angiospermae
(B)	Hominidae	Dicotyledonae	Diptera	Angiospermae
(C)	Hominidae	Diptera	Angiospermae	Dicotyledonae
(D)	Hominidae	Dicotyledonae	Angiospermae	Diptera



15. Two organisms are from the same phylum, but different family. They may belong to the same
(A) Species (B) Order
(C) Genus (D) None of the above

16. Identify the correct sequence of taxonomic hierarchical arrangement in ascending order of the following.

- (A) Angiospermae, Monocotyledonae, Poales, Poaceae, *Triticum*
(B) *Triticum*, Poales, Poaceae, Monocotyledonae, Angiospermae
(C) *Triticum*, Poaceae, Poales, Monocotyledonae, Angiospermae
(D) Monocotyledonae, Poaceae, Poales, Angiospermae, *Triticum*

17. Match the following and choose the correct option. [NCERT Exemplar]

	Column I		Column II
i.	Family	a.	<i>tuberosum</i>
ii.	Kingdom	b.	polymoniales
iii.	Order	c.	<i>Solanum</i>
iv.	Species	d.	plantae
v.	Genus	e.	<i>Solanaceae</i>

- (A) i – d, ii – c, iii – e, iv – b, v – a
(B) i – e, ii – d, iii – b, iv – a, v – c
(C) i – d, ii – e, iii – b, iv – a, v – c
(D) i – e, ii – c, iii – b, iv – a, v – d

18. **Assertion:** Dogs and cats have some similarities.

Reason: They belong to the same family Felidae.

- (A) Both assertion and reason are true and reason is the correct explanation of assertion.
(B) Both assertion and reason are true but reason is not the correct explanation of assertion.
(C) Assertion is true but reason is false.
(D) Both assertion and reason are false.

19. Select the INCORRECT set from the following:

- (A) Anacardiaceae – *Solanum*, *Petunia*
(B) Primata – Gorilla, Gibbon
(C) Carnivora – Felidae, Canidae
(D) *Panthera* – Leopard, Tiger

20. Which one is the MISMATCHED pair?

- (A) Potato – *Solanum tuberosum*
(B) Wheat – *Triticum aestivum*
(C) Mango – *Musca domestica*
(D) Lion – *Panthera leo*

21. Match Column-I with Column-II for housefly classification and select the correct option using the codes given below:

	Column-I		Column-II
i.	Family	a.	Diptera
ii.	Order	b.	Arthropoda
iii.	Class	c.	Muscidae
iv.	Phylum	d.	Insecta

[NEET (UG) P-II 2016]

- (A) i – d, ii – b, iii – a, iv – c
(B) i – c, ii – a, iii – d, iv – b
(C) i – b, ii – c, iii – d, iv – a
(D) i – d, ii – c, iii – b, iv – a

22. Match the following.

	List - I		List - II
i.	Order	a.	<i>nigrum</i>
ii.	Species	b.	Polemoniales
iii.	Family	c.	<i>Solanum</i>
iv.	Class	d.	Solanaceae
		e.	Dicotyledonae

[TS EAMCET 2018]

The correct answer is

- (A) i – b, ii – a, iii – c, iv – e
(B) i – c, ii – e, iii – d, iv – b
(C) i – b, ii – a, iii – d, iv – e
(D) i – a, ii – c, iii – e, iv – b

23. Which one of the following belongs to the family Muscidae? [NEET (UG) 2021]

- (A) House fly (B) Fire fly
(C) Grasshopper (D) Cockroach

24. House fly belongs to _____ family.

[NEET (UG) Manipur 2023]

- (A) Calliphoridae (B) Muscidae
(C) Cyprinidae (D) Hominidae

25. Select the INCORRECT statement from the following.

- (A) *Mangifera*, *Solanum* and *Panthera* represent generic epithets.
(B) *Panthera* and *Felis* belong to family Felidae.
(C) *leo*, *aestivum* and *musca* represent specific epithets.
(D) Mango belongs to order Sapindales.

26. **Assertion:** An order may have many classes.

Reason: All the classes of an order have common features.

- (A) Both assertion and reason are true and reason is the correct explanation of assertion.
(B) Both assertion and reason are true but reason is not the correct explanation of assertion.
(C) Assertion is true but reason is false.
(D) Both assertion and reason are false.



27. Which of the following 'suffixes' used for units of classification in plants indicates a taxonomic category of 'Family'? [NCERT Exemplar]
 (A) - ales (B) - onae
 (C) - aceae (D) - ae
28. The taxonomic unit 'Phylum' in the classification of animals is equivalent to which hierarchical level in classification of plants? [NCERT Exemplar]
 (A) Class (B) Order
 (C) Division (D) Family

29. **Assertion:** The system of providing a scientific name to any organism is called binomial nomenclature.
Reason: Each taxonomic group should have two names.
 (A) Both assertion and reason are true and reason is the correct explanation of assertion.
 (B) Both assertion and reason are true but reason is not the correct explanation of assertion.
 (C) Assertion is true but reason is false.
 (D) Both assertion and reason are false.

Topic Test

1. The first step in taxonomy amongst the following is
 (A) identification
 (B) nomenclature
 (C) classification
 (D) description
2. Which of the following statement/s is / are TRUE?
 i. Growth cannot be taken as a defining property of living organisms.
 ii. *Panthera pardus* is a scientific name of Leopard in which *Panthera* represents specific epithet.
 iii. In binomial nomenclature, biological names are derived from Latin irrespective of their origin.
 iv. In plants, Orders with few similar characters are assigned to Division.
 (A) All are true
 (B) Only i and iii are true
 (C) Only i and iv are true
 (D) Only ii and iii are true
3. Match the columns and select the correct option:

	Column I		Column II
i.	Carolus Linnaeus	a.	Kingdom Plantae
ii.	<i>Solanum tuberosum</i>	b.	Identification
iii.	Manuals	c.	<i>Planaria</i>
iv.	Regeneration	d.	<i>Amoeba</i>
		e.	Systema Naturae

- (A) i - b, ii - e, iii - a, iv - d
 (B) i - e, ii - d, iii - b, iv - c
 (C) i - b, ii - c, iii - a, iv - d
 (D) i - e, ii - a, iii - b, iv - c
4. Which of the following statements represents the defining property of living organisms?
 (A) Worker bees are sterile.
 (B) Plants respond to external factors such as light, temperature, water etc.
 (C) Sand mounds grow due to accumulation of matter from outside.
 (D) All the above.
5. In binomial nomenclature, name of an animal consists of _____.
 (A) three epithets
 (B) two epithets
 (C) one epithet
 (D) four epithets
6. While writing the biological name of tiger, both the words should
 (A) be separately underlined
 (B) be italicised
 (C) be written without any space between them
 (D) start with capital letters

7. Which of the following number represents INCORRECT classification of organism?

No.	Common name	Phylum / Division	Class	Genus	Species
i.	Mango	Angiospermae	Dicotyledonae	<i>Mangifera</i>	<i>indicus</i>
ii.	Man	Chordata	Mammalia	<i>Homo</i>	<i>sapiens</i>
iii.	Wheat	Angiospermae	Poales	<i>Triticum</i>	<i>aestivum</i>
iv.	Housefly	Arthropoda	Insecta	<i>Musca</i>	<i>pardus</i>

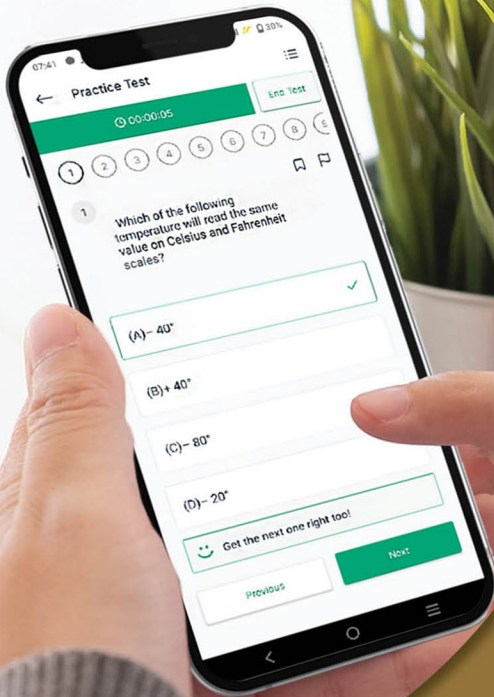
- (A) i, ii and iii (B) i and iv (C) i, iii and iv (D) only ii



8. Reproduction is NOT considered as an all – inclusive defining characteristic of living organisms because
- (A) non – living things can reproduce.
 - (B) many organisms cannot reproduce.
 - (C) reproduction occurs only at cellular level.
 - (D) reproduction occurs only in multicellular organisms.
9. Which of the following is a feature of both living and non-living things?
- (A) Metabolism
 - (B) Growth
 - (C) Consciousness
 - (D) Cellular organization
10. Identify the CORRECT representation of the scientific name of lion.
- (A) *Panthera leo* (B) panthera leo
 - (C) *Panthera Leo* (D) Panthera leo
11. Which of the following statements is TRUE?
- (A) Animals classified in the same Order belong to the same Class.
 - (B) Animals classified in the same Class belong to the same Family.
 - (C) Animals classified in the same Family belong to the same Species.
 - (D) Animals belonging to the same Phylum belong to the same Order.
12. Which is the CORRECT ‘Order’ of Mango?
- (A) Angiospermae (B) Sapindales
 - (C) Dicotyledonae (D) Anacardiceae
13. Which of the following taxonomic category is at a higher hierarchy than Order?
- (A) Genus (B) Family
 - (C) Class (D) Species

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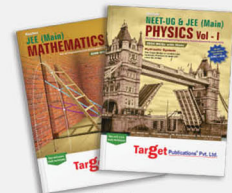
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