

Kattar NEET 2026

Botany By Rupesh Chaudhary Sir

The Living World

- Q1** At which of the following taxonomic levels would it be most challenging to determine the relationship to other taxa at the same level?
 (A) Order (B) Kingdom
 (C) Genus (D) Species
- Q2** Which of the following pair of organisms shows least similarity?
 (A) Potato and *Datura*
 (B) Cat and Dog
 (C) Wheat and Mango
 (D) Gorilla and Human
- Q3** How many of the organisms belongs to same order which include humans?
 Cat, Dog, Gorilla, Gibbon, Monkey, Lion, Leopard, Tiger
 (A) Four (B) Eight
 (C) Two (D) Three
- Q4** Organisms belonging to same order will always have same:
 (A) genus (B) class
 (C) family (D) species
- Q5** How many of the following organisms/groups possess features such as a notochord and a dorsal hollow neural system?
 Birds, Amphibians, Fishes, Housefly, Leopard
 (A) Three (B) Four
 (C) One (D) Five
- Q6** Out of the following taxa which one represents the highest rank in taxonomic hierarchy?
 (A) Polymoniales
 (B) Monocotyledonae
 (C) Anacardiaceae
 (D) Poales
- Q7** Given below are two statements: one is labelled as Assertion A and the other is labelled as Reason R:
Assertion A: Plant families like Solanaceae, Colvolvulaceae are included in the order Poales based on the floral characters.
Reason R: In a particular order, similar characters are less in number as compared to different genera included in a family.
 In the light of the above statements, choose the **correct** answer from the options given below:
 (A) A is true but R is false.
 (B) A is false but R is true.
 (C) Both A and R are true and R is the correct explanation of A.
 (D) Both A and R are true but R is Not the correct explanation of A.
- Q8** The common characteristics between dog and cat will be maximum at the level of their:
 (A) order (B) genus
 (C) family (D) class
- Q9** Given below are two statements:
Statement I: Each genus may have one or more than one specific epithet representing different organisms with different morphological characters.
Statement II: Genus is aggregates of closely related species and has less characters in common in comparison to species of other genera.
 In the light of the above statements, choose the *most appropriate* answer from the options given below:
 (A) Statement I is correct but Statement II is incorrect.
 (B)



Statement I is incorrect but Statement II is correct.

- (C) Both Statement I and Statement II are correct.
(D) Both Statement I and Statement II are incorrect.

Q10 Brinjal, potato, *Datura* and *Petunia* belong to:

- (A) different families
(B) same family
(C) same genus
(D) different classes

Q11 Match **List-I** with **List-II**:

List-I		List-II	
(A)	Housefly	(I)	Poales
(B)	Wheat	(II)	Primata
(C)	Man	(III)	Diptera
(D)	Mango	(IV)	Sapindales

Choose the **correct** answer from the options given below:

- (A) A-I, B-III, C-II, D-IV
(B) A-III, B-II, C-IV, D-I
(C) A-IV, B-III, C-II, D-I
(D) A-III, B-I, C-II, D-IV

Q12 The common characteristics between brinjal and potato will be maximum at the level of their:

- (A) family. (B) order.
(C) division. (D) genus.

Q13 Which of the following species belongs to same genus?

- A. *melongena*
B. *nigrum*
C. *tuberosum*
D. *aestivum*
E. *indica*

Choose the **correct** answer from the options given below:

- (A) A and B only

(B) C and D only

(C) A, B and C only

(D) B and E only

Q14 Identify the correct sequence of the following taxa from lower rank to higher rank:

- A. Sapindales
B. Convolvulaceae
C. Insecta
D. Arthropoda
E. *Triticum*

Choose the **correct** answer from the options given below:

- (A) E → D → A → C → B
(B) E → B → A → C → D
(C) E → A → B → D → C
(D) D → B → A → C → E

Q15 Which of the following suffixes in plant classification is used to indicate the taxonomic category 'family' in plants?

- (A) -ae (B) -ales
(C) -aceae (D) -onae

Q16 The term 'systematics' refers to:

- (A) Study of habitats and classification of organisms
(B) Identification and preservation of organisms
(C) Study of diversity of organisms and their evolutionary relationships
(D) Identification and analysis of organ systems in plants and animals

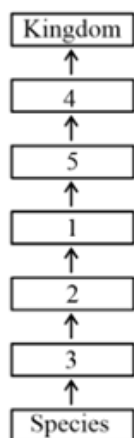
Q17 Identify the **incorrect** statements about binomial nomenclature.

- A. Biological names are written in italics or separately underlined when handwritten.
B. The first word is species, the second is genus.
C. Author's name comes before the species name as abbreviation.
D. Genus starts with a small letter; species with a capital letter.
E. *Mangifera indica* Linn. is a correct representation for biological name of mango.
(A) A and B only



- (B) B and E only
 (C) C and E only
 (D) B, C, and D only

Q18 Refer to the given diagram and identify the correct statements.



- A. Primata, Diptera and Carnivora belong to category 5.
 B. Lion, gorilla and housefly belong to same category 4.
 C. Angiospermae belong to category 4.
 D. Man and dog show maximum similarity at category 5.
 E. Rank 3 is same for potato and brinjal.
 Choose the **correct** answer from the options given below:

- (A) A, B, D, E only
 (B) B and E only
 (C) A, B and C only
 (D) C, D and E only

Q19 Which of the following regarding metabolism is correct?

- (A) Metabolic reactions can occur only inside living organisms.
 (B) Isolated metabolic reactions in vitro are not living things but surely living reactions.
 (C) Metabolism is not a defining feature of living organisms, as it can be simulated outside the body.
 (D) Metabolic reactions are exclusive to plants and animals only.

Q20

The unique characteristics of a tissue arise due to:

- (A) The chemical composition of its individual cells
 (B) The environment of the organism
 (C) Interactions among its constituent cells
 (D) Presence of a dominant cell type

Q21 Which of the following are the basic processes involved in taxonomy?

- A. Nomenclature
 B. Identification
 C. Characterisation
 D. Classification

Choose the **correct** answer from the options given below:

- (A) A and D only
 (B) B and D only
 (C) A, B and D only
 (D) A, B, C and D

Q22 Which of the following is **incorrect** regarding systematics?

- (A) The word systematics is derived from the Latin word
 (B) 'Systema' means systematic arrangement of organisms.
 (C) It takes into account evolutionary relationships between organisms.
 (D) It does not include identification, nomenclature and classification.

Q23 All living organisms-present, past and future are linked to one another because:

- (A) They show similar response to any external stimuli
 (B) They share common genetic material but to varying degrees
 (C) All show common cellular organization
 (D) All share similar environmental condition

Q24 Which of the following is a feature of living organisms but is not all inclusive defining character?

- (A) Cellular organisation



- (B) Metabolic activity
- (C) Reproduction
- (D) Consciousness

- Q25** Identify the **incorrect** statement about growth.
- (A) All living organisms grow.
 - (B) Increase in mass and increase in number of individuals are twin characteristics of growth.
 - (C) In unicellular organisms, growth and reproduction are mutually exclusive events.
 - (D) Some non-living objects also show growth.
- Q26** Which of the following characteristics is found only in human beings?
- (A) Self-replicating
 - (B) Evolving
 - (C) Self-regulating
 - (D) Self-consciousness
- Q27** Identify the **correct** statements regarding characteristic of living organisms.
- (A) Growth and reproduction are defining characteristics of living organisms.
 - (B) Growth is equivalent to increase in cell size but not to the number or mass.
 - (C) Photoperiod affects reproduction in seasonal breeders, both plants and animals.
 - (D) Properties of cellular organelles are not present in the molecular constituents of the organelle.
- Q28** Which of the following is **incorrect** regarding Carolus Linnaeus?
- (A) Binomial nomenclature was proposed by him.
 - (B) In the scientific name of mango, his name is abbreviated as Linn.
 - (C) He used *Systema Naturae* as the title of his publication.
 - (D) He gave the currently accepted definition of a biological species.
- Q29** Diptera is to Housefly as Polymoniales is to:
- | | |
|------------|--------------------|
| (A) Wheat | (B) Mango |
| (C) Gibbon | (D) <i>Petunia</i> |

Q30

Given below are two statements: one is labelled as Assertion A and the other is labelled as Reason R:

Assertion A: The earliest classifications were based on the 'uses' of various organisms.

Reason R: In early days, human beings needed to find sources for their basic needs of food, clothing and shelter.

In the light of the above statements, choose the **correct** answer from the options given below:

- (A) A is true but R is false.
- (B) A is false but R is true.
- (C) Both A and R are true and R is the correct explanation of A.
- (D) Both A and R are true but R is Not the correct explanation of A.

- Q31** Which of the following statements best explains why growth cannot be considered a defining property of living organisms?

- (A) Only unicellular organisms grow, not multicellular ones
- (B) Cell division does not occur in non-living things
- (C) Not all living organisms can grow
- (D) Growth is seen in non-living things also

- Q32** Which of the following pairs is incorrectly matched?

- (A) *Solanum* – Genus
- (B) *tigris* – Species
- (C) Dicotyledonae – Order
- (D) Angiospermae – Division

- Q33** What makes binomial nomenclature universally acceptable and effective for scientific communication?

- (A) It allows multiple names for the same species.
- (B) It includes local names for reference.
- (C) It ensures one name for one species worldwide.
- (D) It allows naming in native languages.

- Q34** Which of the following can reproduce?
A. Tiger



- B. Mango
C. Mule
D. Sterile worker bees
E. Normal human couple

Select the **correct** option.

- (A) A, B and E (B) C and D
(C) A, C and E (D) B, D and E

Q35 Identify the **correct** statement.

- (A) Metabolic reactions can occur only within cells.
(B) Only non-living systems can carry out chemical reactions.
(C) Metabolism cannot be demonstrated outside the body of an organism.
(D) No non-living object exhibits metabolism.

Q36 In unicellular organisms like *Amoeba*, reproduction and growth are:

- (A) Mutually exclusive events
(B) Independent of each other
(C) Different processes occurring simultaneously
(D) Synonymous processes

Q37 Which one of the following is not a universally accepted rule of binomial nomenclature?

- (A) Both words are printed in italics
(B) Specific epithet starts with a small letter
(C) Generic name starts with a capital letter
(D) The name is derived from Greek language

Q38 Match **List I** with **List II**.

List-I		List-II	
(A)	Housefly	(I)	Solanaceae
(B)	<i>Homo sapiens</i>	(II)	Insecta
(C)	<i>Triticum</i>	(III)	Mammalia
(D)	Brinjal	(IV)	Monocotyledonae

Choose the **correct** answer from the options given below:

- (A) A-IV, B-I, C-II, D-III
(B) A-II, B-III, C-IV, D-I
(C) A-III, B-IV, C-I, D-II
(D) A-I, B-III, C-II, D-IV

Q39 Given below are two statements:

Statement I: The taxonomic groups/ categories are distinct biological entities and not merely morphological aggregates.

Statement II: All organisms have Kingdom as the highest taxonomical category.

In the light of the above statements, choose the **most appropriate** answer from the options given below:

- (A) Statement I is correct but Statement II is incorrect.
(B) Statement I is incorrect but Statement II is correct.
(C) Both Statement I and Statement II are correct.
(D) Both Statement I and Statement II are incorrect.

Q40 Species is considered the basic unit of classification because;

- (A) it includes many different genera.
(B) members of a species can reproduce only within the same genus.
(C) members of a species have fundamental similarities.
(D) all species belong to same phylum.

Q41 Which of the following sequences correctly represents the ascending order of taxonomic categories?

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

Q42 Read the following statements.

- A. Carolus Linnaeus is named “The Darwin of the 20th century”.
B. In a scientific name, author name is never mentioned.
C. For plants, the scientific names are given by ICBN.
D. Ernst Mayr gave a two-name format for naming of organisms.
E. For animals, the scientific names are given by ICZN.



In the light of the above statements, choose the **correct** answer from the options given below:

- (A) A, C and E are correct
- (B) B, C and E are incorrect
- (C) B, C and D are correct
- (D) A, B and D are incorrect

Q43 Given below are two statements: One is labelled as Assertion A and the other is labelled as Reason R:

Assertion A: Consciousness is considered the defining feature of living organisms.

Reason R: All living organisms can sense and respond to environmental stimuli.

In the light of the above statements, choose the **correct** answer from the options given below:

- (A) A is true but R is false.
- (B) A is false but R is true.
- (C) Both A and R are true and R is the correct explanation of A.
- (D) Both A and R are true but R is NOT the correct explanation of A.

Q44 Given below are two statements:

Statement I: A dead organism does not grow.

Statement II: A brain-dead patient has self-consciousness.

In the light of the above statements, choose the **most appropriate** answer from the options given below:

- (A) Statement I is correct but Statement II is incorrect.
- (B) Statement I is incorrect but Statement II is correct.
- (C) Both Statement I and Statement II are correct.
- (D) Both Statement I and Statement II are incorrect.

Q45 Match **List I** with **List II**.

List-I		List-II	
(A)	Family	(I)	Hominidae
(B)	Genus	(II)	Arthropoda
(C)	Phylum	(III)	<i>Petunia</i>
(D)	Order	(IV)	Poales

Choose the **correct** answer from the options given below:

- (A) A-IV, B-I, C-II, D-III
- (B) A-II, B-III, C-IV, D-I
- (C) A-III, B-IV, C-I, D-II
- (D) A-I, B-III, C-II, D-IV

Q46 The maximum number of organisms that share the lowest number of common features will be present in the taxonomical category called;

- (A) Genus
- (B) Kingdom
- (C) Species
- (D) Class

Q47 Which of the following organisms belong to order Carnivora?

- A. *Felis*
- B. Dog
- C. Monkey
- D. *Musca*
- E. Gorilla

Choose the **correct** answer.

- (A) C and E
- (B) A and B
- (C) B and D
- (D) C and B

Q48 Given below are two statements: One is labelled as Assertion A and the other is labelled as Reason R:

Assertion A: In plants, cell division stops after a certain age.

Reason R: Growth in multicellular organisms is by cell division.

In the light of the above statements, choose the **correct** answer from the options given below:

- (A) A is true but R is false.
- (B) A is false but R is true.
- (C) Both A and R are true and R is the correct explanation of A.
- (D) Both A and R are true but R is NOT the correct explanation of A.

Q49 How many of the following exemplify sexual reproduction?

- A. Budding in *Hydra*
- B. Spore formation in Fungi
- C. Binary fission in *Amoeba*



D. Regeneration in *Planaria*

E. Protonema in mosses

Choose the **correct** answer.

(A) Five

(B) Two

(C) Zero

(D) Three

Q50 Which of the following doesn't belong to genus *Solanum*?

(A) *nigrum*

(B) *melongena*

(C) *indica*

(D) *tuberosum*

Q51 Which of the following correctly represents the binomial name of tiger in accordance with rules of binomial nomenclature?

(A) *Panthera tigris*

(B) *Panthera tigris*

(C) *panthera tigris*

(D) *panthera Tigris*

Q52 Which of the following sets of taxa have the same rank in the taxonomical hierarchy?

(A) Division and Class

(B) Phylum and Order

(C) Genus and Order

(D) Phylum and Division

Q53 Given below are two statements:

Statement I: All present day living organisms are related to each other.

Statement II: All present day living organisms are related to all organisms that ever lived on this earth.

In the light of the above statements, choose the **most appropriate** answer from the options given below:

(A) Statement I is correct but Statement II is incorrect.

(B) Statement I is incorrect but Statement II is correct.

(C) Both Statement I and Statement II are correct.

(D) Both Statement I and Statement II are incorrect.

Q54 In which of the following taxonomic categories would you place two species with maximum similarities?

(A) Order

(B) Family

(C) Genus

(D) Class

Q55 Given below are two statements: One is labelled as Assertion A and the other is labelled as Reason R:

Assertion A: Systematics takes into account evolutionary relationships between organisms.

Reason R: The scope of systematics was later enlarged to include identification, nomenclature and classification.

In the light of the above statements, choose the **correct** answer from the options given below:

(A) A is true but R is false.

(B) A is false but R is true.

(C) Both A and R are true and R is the correct explanation of A.

(D) Both A and R are true but R is NOT the correct explanation of A.

Q56 More than one specific epithets of a genus represent;

(A) similar organisms having morphological dissimilarities.

(B) different organisms, but having morphological similarities.

(C) different organisms, but having anatomical similarities.

(D) similar organisms having anatomical similarities.

Q57 Match List I with List II.

List-I		List-II	
(A)	Taxon	(I)	Standardising the naming of living organisms
(B)	Identification	(II)	Grouping anything into convenient categories based on some easily observable characters
(C)	Nomenclature	(III)	Unit of classification
(D)	Classification	(IV)	Organism must be described correctly



Choose the **correct** answer from the options given below:

- (A) A-IV, B-I, C-II, D-III
- (B) A-II, B-III, C-IV, D-I
- (C) A-III, B-IV, C-I, D-II
- (D) A-I, B-III, C-II, D-IV

Q58 Identify the incorrect statement about humans.

- (A) They show internal growth.
- (B) They show self-consciousness.
- (C) They belong to kingdom Animalia.
- (D) Their cells don't show metabolic activities.

Q59 Mango and wheat belong to same;
(A) genus. (B) division.
(C) class. (D) species.

Q60 Identify the true statement.

- (A) Classification is a single step process.
- (B) All organisms have been classified into nine broad taxonomical categories.
- (C) Insects have four pairs of jointed legs.
- (D) Linnaeus used *Systema Naturae* as the title of his publication.



Answer Key

Q1 (B)
Q2 (C)
Q3 (D)
Q4 (B)
Q5 (B)
Q6 (B)
Q7 (B)
Q8 (A)
Q9 (D)
Q10 (B)
Q11 (D)
Q12 (D)
Q13 (C)
Q14 (B)
Q15 (C)
Q16 (C)
Q17 (D)
Q18 (D)
Q19 (B)
Q20 (C)
Q21 (D)
Q22 (D)
Q23 (B)
Q24 (C)
Q25 (C)
Q26 (D)
Q27 (C)
Q28 (D)
Q29 (D)
Q30 (C)

Q31 (D)
Q32 (C)
Q33 (C)
Q34 (A)
Q35 (D)
Q36 (D)
Q37 (D)
Q38 (B)
Q39 (C)
Q40 (C)
Q41 (B)
Q42 (D)
Q43 (C)
Q44 (A)
Q45 (D)
Q46 (B)
Q47 (B)
Q48 (B)
Q49 (C)
Q50 (C)
Q51 (A)
Q52 (D)
Q53 (C)
Q54 (C)
Q55 (D)
Q56 (B)
Q57 (C)
Q58 (D)
Q59 (B)
Q60 (D)



Hints & Solutions

Q1 Text Solution:

Higher the category, greater is the difficulty of determining the relationship to other taxa at the same level.

Q2 Text Solution:

The lowest similarities between two organisms are observed in higher taxonomic categories. Wheat and mango belong to the same kingdom (Plantae) and division (Angiospermae). However, other groups share same level at lower taxonomic levels also.

Q3 Text Solution:

The order Primata, comprising humans, monkeys, gorillas, and gibbons, is placed in the class Mammalia along with the order Carnivora, which includes animals like tigers, cats, and dogs.

Q4 Text Solution:

Organisms belonging to same order will always have same class, phylum/division and kingdom.

Q5 Text Solution:

Classes comprising animals like fishes, amphibians, reptiles, birds along with mammals constitute the next higher category called Phylum. All these, based on the common features like presence of notochord and dorsal hollow neural system, are included in phylum Chordata. The housefly belongs to the phylum Arthropoda, whereas the leopard is a mammal and therefore belongs to the phylum Chordata.

Q6 Text Solution:

Poales - order
Anacardiaceae - family
Monocotyledonae - class
Polymoniales - order
Class - Monocotyledonae represents the highest rank in the taxonomic hierarchy

Q7 Text Solution:

Plant families like Convolvulaceae, Solanaceae are included in the order Polymoniales mainly

based on the floral characters.

Q8 Text Solution:

The common characteristics between dog and cat will be maximum at the level of their order.

Q9 Text Solution:

Each genus may have one or more than one specific epithet representing different organisms, but having morphological similarities. Genus comprises a group of related species which has more characters in common in comparison to species of other genera.

Q10 Text Solution:

Brinjal, potato, *Datura* and *Petunia* belong to same family i.e. solanaceae.

Q11 Text Solution:

Housefly	Diptera
Wheat	Poales
Man	Primata
Mango	Sapindales

Q12 Text Solution:

As we move lower from the kingdom to the species level, the number of common characteristics increases. Brinjal (*Solanum melongena*) and potato (*Solanum tuberosum*) share the same genus, *Solanum*. Therefore, they exhibit maximum similarities at the genus level.

Q13 Text Solution:

Species *melongena*, *nigrum* and *tuberosum* belong to same genus *Solanum*.

Q14 Text Solution:

Triticum (genus) → Convolvulaceae (family) → Sapindales (order) → Insecta (class) → Arthropoda (phylum)

Q15 Text Solution:

Generally, the suffix -aceae is used for plant families, such as Convolvulaceae, Poaceae, Solanaceae, etc.

Q16 Text Solution:


The 'term systematics' refers to study of different kinds of organisms and their diversities and also the relationships among them.

Q17 Text Solution:

In binomial nomenclature, the first word is genus, the second is species (specific epithet). Author's name comes after the species name and is abbreviated. Genus starts with a capital letter; species with a small letter.

Q18 Text Solution:

The ranks in between correspond to:

4 → Division/ phylum, 5 → Class, 1 → Order, 2 → Family, 3 → Genus

A. False – *Primata, Diptera, Carnivora* are Orders → Category 1, not 5.

B. False – Lion, gorilla, housefly only share Kingdom, not Phylum (Category 4).

C. True – *Angiospermae* is a Division in plants → Category 4.

D. True – Man and dog share Class Mammalia → Category 5.

E. True – Potato and brinjal share Genus *Solanum* → Category 3.

Q19 Text Solution:

Metabolic reactions can be demonstrated outside the body in cell-free systems. 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. Metabolism is a defining characteristic of all living organisms and is found in every living organism, from microorganisms to plants and animals.

Q20 Text Solution:

Properties of tissues are not present in the constituent cells but arise as a result of interactions among the constituent cells.

Q21 Text Solution:

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

Q22 Text Solution:

Systematics includes identification, nomenclature and classification.

Q23 Text Solution:

All living organisms – present, past and future, are linked to one another by the sharing of the common genetic material, but to varying degrees.

Q24 Text Solution:

Reproduction cannot be an all-inclusive defining characteristic of living organisms. There are many organisms which do not reproduce (mules, sterile worker bees, infertile human couples, etc).

Q25 Text Solution:

In unicellular organisms, growth is synonymous with reproduction. In majority of higher animals and plants, growth and reproduction are mutually exclusive events.

Q26 Text Solution:

Human being is the only organism who is aware of himself, i.e., has self-consciousness.

Q27 Text Solution:

Growth and reproduction are not defining characteristics of living organisms. Growth is also seen in some non living things and reproduction is not found in some organisms like mule, sterile human. Growth is equivalent to increase in cell number or mass. Properties of cellular organelles are not present in the molecular constituents of the organelle but arise as a result of interactions among the molecular components comprising the organelle.

Q28 Text Solution:

Ernst Mayr gave the currently accepted definition of a biological species.

Q29 Text Solution:

Diptera is the order of the Housefly.



Polymoniales is the order to which *Petunia*, potato, brinjal and *Datura* belong.

Q30 Text Solution:

In early days, human beings needed to find sources for their basic needs of food, clothing and shelter. Hence, the earliest classifications were based on the 'uses' of various organisms.

Q31 Text Solution:

Cell division occurs in certain tissues to replace lost cells. Unicellular organisms grow by cell division. Non-living objects also grow if we take increase in body mass as a criterion for growth. Mountains, boulders and sand mounds do grow. However, this kind of growth exhibited by non-living objects is by accumulation of material on the surface. In living organisms, growth is from inside. Growth, therefore, cannot be taken as a defining property of living organisms.

Q32 Text Solution:

Dicotyledonae is a class.

Q33 Text Solution:

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. They also ensure that such a name has not been used for any other known organism.

Q34 Text Solution:

There are many organisms which do not reproduce (mules, sterile worker bees, infertile human couples, etc).

Q35 Text Solution:

No non-living object exhibits metabolism. Metabolic reactions can be demonstrated outside the body in cell-free systems. 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.

Q36 Text Solution:

When it comes to unicellular organisms like bacteria, unicellular algae or *Amoeba*, reproduction is synonymous with growth, i.e., increase in number of cells.

Q37 Text Solution:

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

Q38 Text Solution:

Housefly belongs to class insecta. *Homo sapiens* (human) belongs to class mammalia. *Triticum* belongs to class monocotyledonae. Brinjal belongs to class Solanaceae.

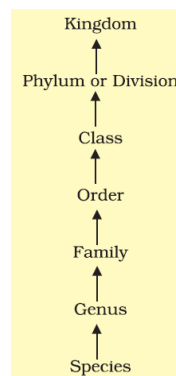
Q39 Text Solution:

The taxonomic groups/ categories are distinct biological entities and not merely morphological aggregates. All animals belonging to various phyla are assigned to the highest category called Kingdom Animalia in the classification system of animals. The Kingdom Plantae, on the other hand, is distinct, and comprises all plants from various divisions. Hence, Kingdom is the highest taxonomical category.

Q40 Text Solution:

Taxonomic studies consider a group of individual organisms with fundamental similarities as a species. One should be able to distinguish one species from the other closely related species based on the distinct morphological differences.

Q41 Text Solution:



Taxonomic categories showing hierarchical arrangement in ascending order.

Q42 Text Solution:



ERNST MAYR, the Harvard University evolutionary biologist who has been called 'The Darwin of the 20th century', was one of the 100 greatest scientists of all time. Biologists follow universally accepted principles to provide scientific names to known organisms. Each name has two components – the Generic name and the specific epithet. This system of providing a name with two components is called Binomial nomenclature. This naming system given by Carolus Linnaeus is being practised by biologists all over the world. For plants, scientific names are based on agreed principles and criteria, which are provided in International Code for Botanical Nomenclature (ICBN). Animal taxonomists have evolved International Code of Zoological Nomenclature (ICZN). Name of the author appears after the specific epithet, i.e., at the end of the biological name and is written in an abbreviated form, e.g., *Mangifera indica* Linn.

Q43 Text Solution:

All organisms, from the prokaryotes to the most complex eukaryotes can sense and respond to environmental cues. Consciousness therefore, becomes the defining property of living organisms.

Q44 Text Solution:

A dead organism does not grow. The patients lying in coma in hospitals are virtually supported by machines which replace heart and lungs. The patient is otherwise brain-dead. The patient has no self-consciousness.

Q45 Text Solution:

Hominidae is a family. *Petunia* is a genus. Arthropoda is a phylum. Poales is an order.

Q46 Text Solution:

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.

Q47 Text Solution:

Order Primata comprising monkey, gorilla and gibbon is placed in class Mammalia along with order Carnivora that includes animals like tiger, cat and dog. *Musca* belongs to order Diptera.

Q48 Text Solution:

A multicellular organism grows by cell division. In plants, this growth by cell division occurs continuously throughout their life span. In animals, this growth is seen only up to a certain age.

Q49 Text Solution:

In multicellular organisms, reproduction refers to the production of progeny possessing features more or less similar to those of parents. Invariably and implicitly we refer to sexual reproduction. Organisms reproduce by asexual means also. Fungi multiply and spread easily due to the millions of asexual spores they produce. In lower organisms like yeast and hydra, we observe budding. In *Planaria* (flat worms), we observe 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. When it comes to unicellular organisms *Amoeba* (binary fission), reproduction is synonymous with growth, i.e., increase in number of cells.

Q50 Text Solution:

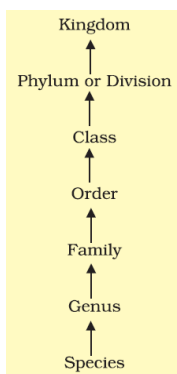
The species *indica* belongs to genus *Mangifera*.

Q51 Text Solution:

Panthera tigris is the correctly written scientific name of tiger.

Q52 Text Solution:





Taxonomic categories showing hierarchial arrangement in ascending order.

Q53 Text Solution:

That all present day living organisms are related to each other and also to all organisms that ever lived on this earth, was a revelation which humbled man and led to cultural movements for conservation of biodiversity.

Q54 Text Solution:

Genus comprises a group of related species which has more characters in common in comparison to species of other genera.

Q55 Text Solution:

The scope of systematics was later enlarged to include identification, nomenclature and classification. Systematics takes into account evolutionary relationships between organisms.

Q56 Text Solution:

Each genus may have one or more than one specific epithets representing different organisms, but having morphological similarities.

Q57 Text Solution:

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 nomenclature. Obviously, 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 identification. Classification is the process by which anything is grouped into convenient categories based on some easily observable characters. Classification is not a single step process but involves hierarchy of steps in which each step represents a rank or category. Since the category is a part of overall taxonomic arrangement, it is called the taxonomic category and all categories together constitute the taxonomic hierarchy. Each category, referred to as a unit of classification, in fact, represents a rank and is commonly termed as taxon.

Q58 Text Solution:

All plants, animals, fungi and microbes exhibit metabolism. Metabolism is a defining feature of all living organisms without exception.

Q59 Text Solution:

Mango and wheat belong to same division i.e angiospermae.

Q60 Text Solution:

Classification is not a single step process but involves hierarchy of steps in which each step represents a rank or category. Linnaeus used *Systema Naturae* as the title of his publication. Insects represent a group of organisms sharing common features like three pairs of jointed legs. The taxonomic categories from species to kingdom are seven broad categories.



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