1. Which of the following is not a defining characteristic of living organisms?
A. Reproduction
B. Metabolism
C. Cellular organization
D. Consciousness

✅Answer: A. Reproduction

Explanation:
Reproduction is not a defining feature of living organisms as some organisms like mules, worker bees, and sterile human couples do not reproduce, yet are considered living. Metabolism, cellular organization, and consciousness (in humans) are defining features.

2. Which of the following is considered the twin characteristics of growth?
A. Increase in mass and reproduction
B. Increase in number of cells and metabolism
C. Increase in mass and increase in number of individuals
D. Reproduction and metabolism

✅Answer: C. Increase in mass and increase in number of individuals

Explanation:
In living organisms, growth is manifested both by increase in body mass and increase in the number of individuals (in multicellular organisms by cell division, in unicellular organisms by reproduction).

3. Which feature distinguishes living organisms from non-living matter most reliably?
A. Ability to grow
B. Ability to metabolize
C. Reproduction
D. Cellular organization

✅Answer: B. Ability to metabolize

Explanation:
Metabolism is a definitive property of living beings. Even when isolated, metabolic reactions can occur in a test tube—this is called in vitro metabolism, but such reactions are still considered living property.

4. Which taxonomic aid is best suited for the identification of plants and animals in their natural habitats?

A. Herbarium
B. Botanical garden
C. Key
D. Manual

✅Answer: C. Key

Explanation:
Keys are based on contrasting characters generally in pairs called couplets. They are analytical and help identify organisms in the field based on specific features.

5. Binomial nomenclature consists of which of the following components?
A. Family and species
B. Genus and species
C. Order and genus
D. Class and species

✅Answer: B. Genus and species

Explanation:
In binomial nomenclature, the scientific name of a species consists of two parts: the genus name (capitalized) and the species name (lowercase), both italicized or underlined when handwritten.

6. Which of the following is not true about scientific names?
A. They are universally accepted
B. They are in English
C. They are Latinized
D. They follow binomial system

✅Answer: B. They are in English

Explanation:
Scientific names are in Latin or Latinized form, not English, to maintain uniformity across different languages and regions.

7. What is the correct sequence of taxonomic categories in hierarchy?
A. Species → Genus → Order → Family → Class → Phylum → Kingdom
B. Species → Genus → Family → Order → Class → Phylum → Kingdom

C. Genus → Species → Family → Order → Phylum → Class → Kingdom
D. Species → Family → Genus → Order → Class → Kingdom → Phylum

✅Answer: B. Species → Genus → Family → Order → Class → Phylum → Kingdom

Explanation:
This is the correct taxonomic hierarchy from the lowest rank (species) to the highest (kingdom).

8. Which of the following taxonomic aids stores dried plant specimens on sheets?
A. Monograph
B. Manual
C. Herbarium
D. Flora

✅Answer: C. Herbarium

Explanation:
Herbarium is a collection of dried, pressed plant specimens mounted on sheets, labeled with scientific names, locality, collector's name, etc.

9. ICZN governs the scientific naming of which group?
A. Plants
B. Microorganisms
C. Animals
D. All living organisms

✅Answer: C. Animals

Explanation:
International Code of Zoological Nomenclature (ICZN) governs naming of animals. ICBN (International Code for Botanical Nomenclature) is for plants.

10. Which of the following statements about taxonomic keys is incorrect?
A. Keys are used for identification based on similarities
B. They are based on couplets
C. Each statement in the key is called a lead
D. Separate keys are needed for different taxonomic categories

✅Answer: A. Keys are used for identification based on similarities

Explanation:
Taxonomic keys identify organisms based on differences, not similarities, by using contrasting characters.

11. Which of the following statements is correct about species?
A. Members of a species can interbreed to produce sterile offspring
B. A species includes individuals of different genera
C. Species is the largest unit of classification
D. Members of a species share similar morphological features and can interbreed

✅Answer: D. Members of a species share similar morphological features and can interbreed

Explanation:
A species is the basic unit of classification where individuals have similar traits and are capable of interbreeding to produce fertile offspring.

12. Which one of the following statements about a biological museum is correct?
A. It contains live specimens only
B. It is used only for storing plant specimens
C. It contains preserved specimens of animals and plants for study
D. It includes only dried herbarium sheets

✅Answer: C. It contains preserved specimens of animals and plants for study

Explanation:
Biological museums preserve both plant and animal specimens—dry specimens, wet-preserved, skeletons, etc., for educational and research purposes.

13. Which one of the following is not a taxonomic category?
A. Phylum
B. Class
C. Taxon
D. Family

✅Answer: C. Taxon

Explanation:

"Taxon" is a general term for a taxonomic group at any level (species, genus, etc.), but it itself is not a category. Categories include species, genus, family, etc.

14. The correct sequence of taxonomic hierarchy is:
A. Genus < Species < Order < Family < Kingdom < Class < Phylum
B. Species < Genus < Family < Order < Class < Phylum < Kingdom
C. Kingdom < Phylum < Class < Order < Family < Genus < Species
D. Kingdom < Class < Phylum < Order < Family < Genus < Species

✅Answer: B. Species < Genus < Family < Order < Class < Phylum < Kingdom

Explanation:
This hierarchy flows from the smallest taxonomic unit (species) to the broadest (kingdom).

15. Identify the odd one out:
A. Flora
B. Manual
C. Monograph
D. Taxon

✅Answer: D. Taxon

Explanation:
Flora, manual, and monograph are all taxonomic aids, but taxon is a taxonomic unit, not a tool or aid.

16. Which of the following taxonomic aids provides information on the occurrence and distribution of plants in a region?
A. Flora
B. Manual
C. Monograph
D. Herbarium

✅Answer: A. Flora

Explanation:
Flora contains information about the naturally occurring plant species in a region, including habitat and seasonal data.

17. Reproduction as a defining characteristic is not applicable in which of the following cases?
A. Amoeba
B. Mule
C. Hydra
D. Yeast

✅Answer: B. Mule

Explanation:
Mules are sterile and cannot reproduce. Despite this, they show other life characteristics and are considered living.

18. Which of the following statements about metabolism is true?
A. It can occur only within a living body
B. It includes only catabolic reactions
C. It is the sum total of all chemical reactions in a living system
D. It occurs only during growth phase

✅Answer: C. It is the sum total of all chemical reactions in a living system

Explanation:
Metabolism includes both anabolic (building up) and catabolic (breaking down) reactions.

19. Which of the following is correct about growth in living organisms?
A. Non-living things also grow internally
B. Growth stops after a certain age in all living beings
C. Growth in multicellular organisms occurs by cell division
D. Growth is not measurable in unicellular organisms

✅Answer: C. Growth in multicellular organisms occurs by cell division

Explanation:
Multicellular organisms grow through mitotic cell divisions, increasing both mass and number of cells.

20. Which of the following best distinguishes living beings from non-living?
A. Ability to respond to stimuli
B. Ability to reproduce

C. Ability to respire
D. Ability to move

✅Answer: A. Ability to respond to stimuli

Explanation:
All living organisms, from bacteria to humans, can sense and respond to environmental stimuli—a fundamental feature distinguishing life.

21. In binomial nomenclature, which rule is followed for writing the scientific name?
A. Both genus and species start with a capital letter
B. Species name can be written alone
C. Genus name is capitalized, species name is lowercase
D. Both names are written in uppercase only when underlined

✅Answer: C. Genus name is capitalized, species name is lowercase

Explanation:
According to ICBN/ICZN rules, genus names start with a capital letter, while species names are written in lowercase. Both are italicized or underlined.

22. Which of the following is an example of a taxonomic category that includes organisms with common features but belongs to different genera?
A. Family
B. Species
C. Genus
D. Order

✅Answer: A. Family

Explanation:
A family may include multiple genera that share common morphological features. For example, the family Felidae includes Panthera (lion, tiger) and Felis (cat).

23. Match the following correctly:

1. Herbarium – (i) Key to identify species

2. Flora – (ii) Collection of preserved plant specimens

3. Manual – (iii) Information for identification

4. Key – (iv) Detailed account of region's plant species

A. 1-ii, 2-iv, 3-iii, 4-i
B. 1-i, 2-ii, 3-iv, 4-iii
C. 1-iii, 2-iv, 3-i, 4-ii
D. 1-iv, 2-i, 3-ii, 4-iii

✅Answer: A. 1-ii, 2-iv, 3-iii, 4-i

Explanation:

Herbarium → preserved specimens

Flora → complete plant listing

Manual → brief descriptions for ID

Key → tool for identifying organisms

24. Which of the following organisms shows growth through cell division throughout its life?
A. Human
B. Cow
C. Fungi
D. Bacteria

✅Answer: D. Bacteria

Explanation:
Unicellular organisms like bacteria grow by cell division throughout life; this division results in reproduction as well.

25. Which taxonomic category will have the maximum number of organisms having least number of similarities?
A. Kingdom
B. Genus
C. Species
D. Family

✅Answer: A. Kingdom

Explanation:
Kingdom is the highest taxonomic rank and contains a vast number of organisms with general, not specific, similarities.

26. The term “systematics” was first used by:
A. Carolus Linnaeus
B. Aristotle
C. Whittaker
D. Julian Huxley

✅Answer: D. Julian Huxley

Explanation:
Julian Huxley introduced the modern concept of systematics which includes taxonomy along with evolutionary relationships.

27. In a taxonomic key, each contrasting option in a couplet is called a:
A. Taxon
B. Character
C. Lead
D. Node

✅Answer: C. Lead

Explanation:
Each statement in a couplet (which helps choose between two options) is known as a lead in taxonomic keys.

28. Which among the following pairs belong to the same genus?

A. Panthera leo and Felis catus
B. Homo sapiens and Homo erectus
C. Felis leo and Felis domesticus
D. Canis lupus and Panthera tigris

✅Answer: B. Homo sapiens and Homo erectus

Explanation:
Both belong to the genus Homo. This genus includes human and closely related extinct species.

29. The category immediately higher than genus is:
A. Family
B. Species
C. Order
D. Class

✅Answer: A. Family

Explanation:
The correct taxonomic hierarchy places Family above Genus.

30. Carolus Linnaeus is known as the father of taxonomy because he:
A. Gave five-kingdom classification
B. Introduced the concept of evolution
C. Developed the binomial nomenclature system
D. Discovered microorganisms

✅Answer: C. Developed the binomial nomenclature system

Explanation:
Linnaeus formulated the binomial system of naming organisms that is universally accepted in taxonomy today.

31. Which of the following statements is/are correct about binomial nomenclature?

1. It was proposed by Linnaeus.

2. Both names are written in Latin or Latinized form.

3. Genus name is written in lowercase.

4. It provides a unique and universal name for every species.

A. Only 1 and 3
B. Only 1, 2, and 4
C. All are correct
D. Only 2 and 3

✅Answer: B. Only 1, 2, and 4

Explanation:
The genus name is written with a capital letter, not lowercase. The rest of the statements are correct.

32. Match the following taxonomic categories with their examples:

Column I (Category)	Column II (Example)
A. Class	1. Musca
B. Genus	2. Mammalia
C. Family	3. Felidae
D. Species	4. sapiens

A. A–2, B–1, C–3, D–4
B. A–3, B–2, C–1, D–4
C. A–2, B–3, C–1, D–4
D. A–1, B–3, C–2, D–4

✅Answer: A. A–2, B–1, C–3, D–4

Explanation:
Mammalia is a class, Musca is a genus, Felidae is a family, and sapiens is a species epithet.

33. Which of the following is/are not correct about taxonomic hierarchy?

A. Genus comes below family
B. Order includes more organisms than class
C. Kingdom includes maximum diversity
D. Species is the lowest category

✅Answer: B. Order includes more organisms than class

Explanation:
This is incorrect. Class is broader and includes more organisms than order.

34. Choose the correct statement(s):

1. Manuals contain taxonomic descriptions of only new species.

2. Monographs contain information on a single taxon.

3. Flora provides information about plant species in a region.

4. Keys help in identifying unknown organisms.

A. 2, 3, and 4 only
B. 1, 2, and 3 only
C. 3 and 4 only
D. All are correct

✅Answer: A. 2, 3, and 4 only

Explanation:
Manuals contain information about known species, not just new ones.

35. Assertion (A): Taxonomic keys help in identification of organisms.
Reason (R): They are based on similarities in characteristics.

A. Both A and R are true, and R is the correct explanation
B. Both A and R are true, but R is not the correct explanation

C. A is true but R is false
D. A is false but R is true

✅Answer: C. A is true but R is false

Explanation:
Keys are based on contrasting (dissimilar) characteristics, not similarities.

36. Which of the following taxonomic aids contains region-specific plant data including flowering seasons?
A. Herbarium
B. Flora
C. Monograph
D. Manual

✅Answer: B. Flora

Explanation:
Flora provides detailed information about plants found in a particular region including blooming season and habitat.

37. Select the incorrect pair:
A. Homo – Genus
B. Panthera leo – Species
C. ICBN – Animals
D. Felis – Cat genus

✅Answer: C. ICBN – Animals

Explanation:
ICBN is for plants. ICZN governs animal nomenclature.

38. Match the following taxonomic aids with their features:

Column I (Aid)	Column II (Description)
A. Herbarium	1. Pressed and dried plant specimens
B. Manual	2. Identification guide with short details
C. Monograph	3. Comprehensive study of a single taxon

D. Key 4. Tool based on couplets for identification

A. A–1, B–2, C–3, D–4
B. A–2, B–1, C–4, D–3
C. A–4, B–3, C–1, D–2
D. A–1, B–3, C–2, D–4

✅Answer: A. A–1, B–2, C–3, D–4

Explanation:
Each taxonomic aid is matched with its characteristic feature.

39. Which among the following organisms exhibit all characteristics of life including growth, metabolism, and response to stimuli?
A. Fire
B. Virus
C. Dog
D. Crystal

✅Answer: C. Dog

Explanation:
Only living organisms like a dog show all living features including metabolism, responsiveness, and growth.

40. Which of the following statements is correct regarding living organisms?
A. All living organisms grow in the same manner
B. Metabolism can occur in non-living systems
C. Consciousness is found in all living organisms
D. Growth and reproduction are not necessarily linked

✅Answer: D. Growth and reproduction are not necessarily linked

Explanation:
Some living organisms grow but do not reproduce (like mules), proving that growth and reproduction are not always linked.

41. Choose the correct hierarchical sequence for Homo sapiens:

A. Kingdom → Phylum → Order → Class → Family → Genus → Species
B. Kingdom → Class → Order → Phylum → Family → Genus → Species
C. Kingdom → Phylum → Class → Order → Family → Genus → Species
D. Kingdom → Phylum → Order → Class → Family → Genus → Species

✅Answer: C. Kingdom → Phylum → Class → Order → Family → Genus → Species

Explanation:
This is the correct hierarchical sequence from higher to lower ranks.

42. Which category is used as a basic unit for taxonomic studies?
A. Genus
B. Order
C. Species
D. Family

✅Answer: C. Species

Explanation:
Species is the fundamental unit in taxonomy because it refers to a group of similar individuals capable of interbreeding.

43. Viruses are considered non-living because:
A. They do not reproduce at all
B. They have no genetic material
C. They can metabolize outside the host
D. They do not show metabolism on their own

✅Answer: D. They do not show metabolism on their own

Explanation:
Viruses are metabolically inert outside a host, so they are considered non-living in free form.

44. Which of the following is a pair of taxonomic categories that belong to the same rank?
A. Plantae and Fungi
B. Genus and Phylum
C. Order and Class
D. Monera and Animalia

✅Answer: D. Monera and Animalia

Explanation:
Both Monera and Animalia are biological kingdoms—thus same taxonomic rank.

45. Identify the correct statements:

1. Taxonomy and systematics are unrelated.

2. Binomial nomenclature uses two names: family and genus.

3. Botanical gardens maintain live specimens.

4. Species is a group of interbreeding individuals.

A. Only 3 and 4
B. Only 1, 2, and 3
C. All are correct
D. Only 2 and 4

✅Answer: A. Only 3 and 4

Explanation:

Statement 1 is false: taxonomy is a part of systematics.

Statement 2 is false: binomial uses genus and species.

Statements 3 and 4 are correct.