

THE LIVING WORLD

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

- (1) To depict convergent evolution
- (2) To clarify relationships among organisms
- (3) To help us remember organisms and their traits
- (4) To clearly identify the species being studied

2. Select the incorrect statement about living processes.

- (1) All living phenomena are due to underlying interaction.
- (2) Properties of tissues are not present in the constituent cells.
- (3) Properties of cellular organelles are present in the molecular constituents of the organelles.
- (4) The interactions result in emergent properties at a higher level of organisation.

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, performed in a test tube is neither living nor non-living.
- (d) All organism, from the prokaryotes to the most complex eukaryotes can sense and respond to environmental cues.

- (1) b, c, d (2) a, b, c
- (3) a, d, c (4) a, b, c, d

4. Read the following statement and select the incorrect one.

- (1) Mountains, boulders and sand mounds do grow if we take increase in body mass as criterion for growth.
- (2) Many organisms like mules, sterile worker bees and infertile human couples do not reproduce at all.
- (3) Living organisms are self-replicating, evolving and self-regulating interactive systems capable of responding to external stimuli.
- (4) Isolated metabolic reaction in *vitro* are living things.

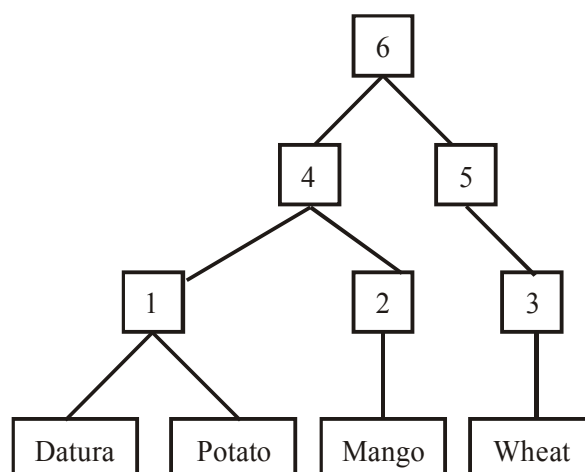
5. Read the following statements and select the incorrect one.

- (1) Isolated metabolic reactions in *vitro* are not living things but surely living reactions.
- (2) The sum total of all the chemical reactions occurring in our body is metabolism.
- (3) All organisms, from the prokaryotes to the most complex eukaryotes have self consciousness
- (4) Metabolic reaction can be demonstrated outside the body in cell-free system.

6. Ernst Mayr was a

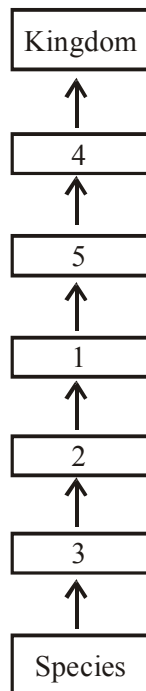
- (1) Geographer
- (2) Biochemist
- (3) Botanist
- (4) Evolutionary biologist

7. Recognise the following flow diagram and find the correct option according to taxonomic hierarchy.



- (1) 1-Polymoniales, 2-Sapindales, 3-Poales, 4-Dicotyledonae, 5-Monocotyledonae, 6-Angiospermae
- (2) 1-Solanaceae, 2-Anacardiaceae, 3-Poaceae, 4-Polymoniales, 5-Poales, 6-Angiospermae
- (3) 1-Solanum, 2-Mangifera, 3-Triticum, 4-Dicotyledonae, 5-Monocotyledonae, 6-Plantae
- (4) 1-Polymoniales, 2-Sapindales, 3-Poales, 4-Angiospermae, 5-Monocotyledonae, 6-Plantae

8. In the following flow diagram, identify the correct categories according to the taxonomic hierarchy.

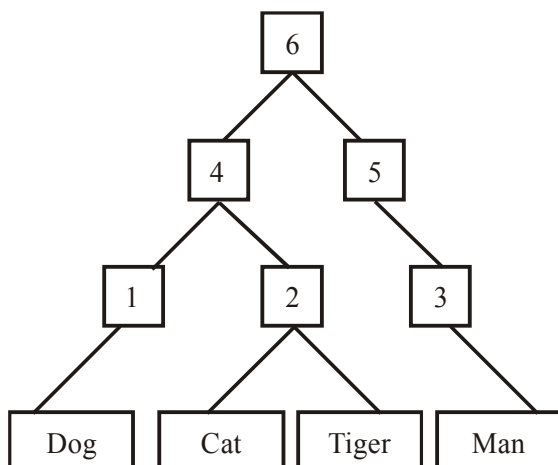


- (a) Primata, diptera and carnivora belong to category '1'.
 (b) *Petunia*, *Datura* and *Solanum* belong to same category '2'.
 (c) Angiospermae belongs to category '5'.
 (d) Man and dog show maximum similarity at category '5'.
 (e) Category '3' is same for lion, tiger and leopard.

Select the correct statements :

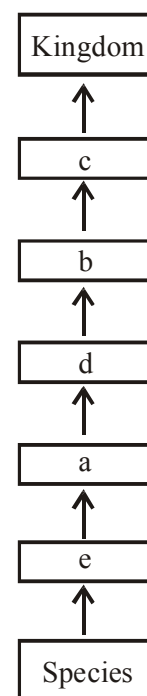
- (1) a, b, d, e (2) b, c, d, e
 (3) a, b, c (4) a, b, e

9. Recognise the following flow diagram and find the correct option according to taxonomic hierarchy.



- (1) 1-*Canis*, 2-*Felis*, 3-*Homo*, 4-Felidae, 5-Hominidae, 6-Primata
 (2) 1-Canidae, 2-Felidae, 3-Hominidae, 4-Carnivora, 5-Primata, 6-Mammalia
 (3) 1-Canidae, 2-Felidae, 3-Hominidae, 4-Carnivora, 5-Felidae, 6-Chordata
 (4) 1-*Canis*, 2-*Felis*, 3-*Homo*, 4-Carnivora, 5-Primata, 6-Mammalia

10. In the following flow diagram identify the correct categories.

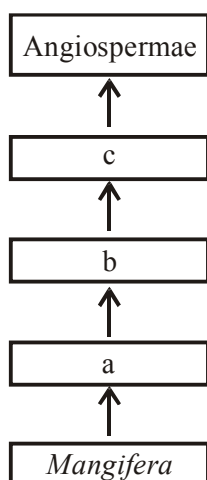


- (A) Wheat and mango belong to same category 'b'.
 (B) Potato, brinjal and makoi belong to same category 'e'.
 (C) Muscidae, anacardiaceae and angiospermae belong to category 'a'
 (D) Gorilla, gibbon and chimpanzee belong to same category 'd'.
 (E) Dicotyledonae and monocotyledonae belong to category 'c'.

Select the correct statements :

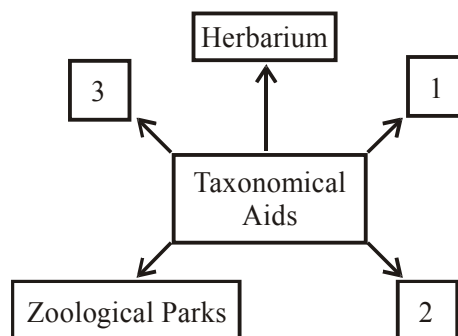
- (1) D, B, C (2) A, C, E
 (3) B, D (4) E, B, D

11. Recognise the following flow diagram and find the correct option according to taxonomic hierarchy.



- (1) 'a' is comparable to muscidae while 'b' is at the same level as that of primata.
 (2) 'c' includes all the angiosperms having two cotyledons in their seeds.
 (3) For wheat 'a' is poaceae, 'b' is poales and 'c' is monocotyledonae.
 (4) All of the above are correct statements.
12. Man, housefly, mango, wheat, dog, cat, lion, tiger, potato, brinjal, makoi and leopard these given species belong to how many different families?
- (1) 4 (2) 7
 (3) 5 (4) 6
13. The families, Convolvulaceae and Solanaceae are included in the order polymoniales mainly on the basis of
- (1) Vegetative characters
 (2) Morphological characters
 (3) Floral characters
 (4) Both 1 and 2

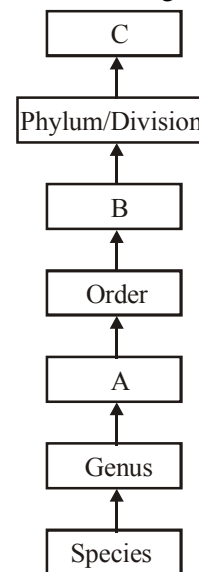
14. Fill in the blanks according to taxonomical aids.



- (1) 1-Flora, 2-Kingdom, 3-Botanical gardens
 (2) 1-Catalogues, 2-Keys, 3-Species
 (3) 1-Botanical garden, 2-Museum, 3-Keys
 (4) 1-Monographs, 2-Order, 3-Manuals
15. Read the following statements and select the correct ones.
- (i) Increase in mass and increase in number of individuals are twin characteristics of growth
 (ii) In unicellular organisms growth and reproduction are synonymous.
 (iii) 'Feel or response to stimuli' is a defining property of living organisms.
- (1) (i) and (ii) (2) (ii) and (iii)
 (3) (i) and (iii) (4) (i), (ii) and (iii)
16. The statement 'nothing lives forever, yet life continues' illustrates the role of :-
- (1) embryogenesis (2) morphogenesis
 (3) replication (4) reproduction
17. Linnaeus described many species of plants in his book _____ (1753) and of animals in his book _____ (1758):-
- (1) *Philosophia Botanica, Genera Plantarum*
 (2) *Historia Naturalis, Species Plantarum*
 (3) *Systema Naturae, Species Plantarum*
 (4) *Species Plantarum, Systema Naturae*

18. The main objective of plant taxonomy is :-
- (1) To study the world's flora
 - (2) To provide a method for identification and nomenclature
 - (3) To provide Latin 'scientific' names for every group of plants in the world
 - (4) All of these
19. The scientific name of banyan is written as *Ficus bengalensis* Linn. Which of the following statements is correct regarding this?
- (1) "Linn." word signifies Latin language
 - (2) The scientific name should be derived from english language
 - (3) "Linn." signifies the taxonomist Linnaeus.
 - (4) Bengalensis is a generic name.
20. Which of the following statements is **not correct**?
- (1) Biodiversity is the occurrence of variety of life forms differing in morphology, anatomy, habitats and habits.
 - (2) 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.
 - (3) Classification is the branch of biology that deals with principles and procedures of identification and nomenclature of organisms
 - (4) None of these

21. The given flowchart represents the hierarchy of various taxonomic categories.



Identify the missing categories (A, B and C) and select the **correct** statements regarding these.

- (i) A is the taxonomic category which contains a number of related genera.
 - (ii) Examples of category B are Monocotyledonae, Dicotyledonae, Mammalia, etc
 - (iii) C represents the basic unit of taxonomic hierarchy.
 - (iv) Examples of category C are Fungi, Monera, Protista, etc.
- (1) (i) and (ii)
 - (2) (iii) and (iv)
 - (3) (i), (ii) and (iv)
 - (4) (i), (ii), (iii) and (iv)
22. Select the **incorrect** statement with respect to 'genus'.
- (1) It is a group or assemblage of related species.
 - (2) A genus essentially possesses more than one number of species.
 - (3) 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*.
 - (4) *Solanum*, *Penicillium*, *Withania* and *Asparagus* are the examples of genera.

23. Which of the following options represents the correct classification for the given animal?



	Phylum	Class	Order	Family	Genus	Species
(1)	Chordata	Vertebrata	Chiroptera	Felidae	<i>Canis</i>	<i>C.tigris</i>
(2)	Chordata	Mammalia	Carnivora	Felidae	<i>Panthera</i>	<i>P.tigris</i>
(3)	Vertebrata	Mammalia	Carnivora	Felidae	<i>Panthera</i>	<i>P.tigris</i>
(4)	Mammalia	Felidae	Carnivora	Feliaceae	<i>Panthera</i>	<i>P.leo</i>

24. Read the following statements regarding biological museums:-

- (i) Biological museums are generally set up in educational institutes such as schools and colleges.
- (ii) Biological museums have collections of preserved plant and animal specimens for study and reference
- (iii) Specimens are preserved in the containers or jars in preservative solutions.
- (iv) Insects are preserved in insect boxes after collecting, killing and pinning.
- (v) Larger animals like birds and mammals are usually stuffed and preserved.
- (vi) Skeletons of mammals are not allowed to be kept in museums

Which of the above statements is/are not correct?

- (1) (ii) and (iii)
- (2) (i) and (vi)
- (3) (v) only
- (4) (vi) only

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

- (i) Herbaria also serve as quick referral system.
- (ii) Detail regarding the plant such as locality, ecological conditions, local or english names etc. should be noted.
- (iii) Plants are evenly pressed by unfolding all the plant parts between blotting papers (or newspapers) with the help of plant pressers.
- (iv) Blotting papers need not be changed until the plant gets dried.
- (v) After drying, the plant specimen is carefully mounted/pasted on the herbarium sheets.
- (vi) The herbarium sheet is labelled on the lower right hand corner representing the name of collector, date of collection etc.

Which of the above statements is/are not correct?

- (1) (i) only
- (2) (iv) only
- (3) (i) and (iv)
- (4) (iii) and (iv)

26. Read the following statements:-

(P) The taxonomic hierarchy for *Mangifera M. indica* can be written as:

Plantae → Angiospermae → Dicotyledonae
→ Sapindales → Anacardiaceae →
Mangifera → *M.indica*

(Q) Tautonym is the taxonomic designation used for certain plants having trinomial nomenclature

(R) Taxonomic keys are generally analytical in nature

(S) Families like convolvulaceae and Anacardiaceae are included in the order Polymoniales

Which of the following combinations of above statements is correct?

- (1) P and Q
- (2) P and R
- (3) R and S
- (4) P, R and S

27. Which of the following statements is incorrect?

- (1) Taxonomists also prepare and disseminate information through manuals and monographs for further taxonomic studies.
- (2) Live specimen of plants and animals are found in botanical gardens and zoological parks.
- (3) Metabolism and response to external stimuli are considered as the defining properties of living organisms
- (4) Growth and reproduction are synonymous events for members of plantae and animalia

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

	Column-I		Column-II
A	Artificial system of classification	(i)	Bentham and Hooker
B	Natural system of classification	(ii)	Linnaeus
C	Phylogenetic system of classification	(iii)	A.W. Eichler

- (1) A-(ii), B-(i), C-(iii) (2) A-(i), B-(ii), C-(iii)
 (3) A-(iii), B-(ii), C-(i) (4) A-(iii), B-(i), C-(ii)

29. The common character present in Yeast and *Hydra* is

- (1) Sexual organs
- (2) Fragmentation
- (3) Budding
- (4) Spore formation

30. All living organisms are linked to one another because

- (1) They have common genetic material of the same type
- (2) They share common genetic material, but to varying degrees
- (3) All have common cellular organisation
- (4) All of the above

ANSWER KEY

Que.	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
Ans.	1	2	4	4	3	4	1	1	2	3	4	2	3	3	
Que.	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30
Ans.	4	4	4	3	3	3	2	2	4	2	2	4	1	3	