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Questions:

1. What is the importance of taxonomical aids? Describe various taxonomical aids.
2. During biology class, the teacher was explaining the characteristics of living things. Abhay became confused after knowing, that all the characteristics of human beings are similar to other animals. He asked his teacher about any characteristic that is exclusively found only in human beings. The teacher smiled appreciated Abhay for his attentiveness and explained him about it.
   (i) What is the characteristic exclusively found in humans?
   (ii) What are the characteristics of living things?
   (iii) Why viruses are not considered as living?
   (iv) What values are shown by Abhay?
3. During a visit to a botanical garden, the teacher showed students an old tree which was on the verge of extinction. As soon as the teacher left, some notorious students climbed up the tree and started cutting the branches, collecting its leaves as previous collection. Saumya instead took photographs from various angles. The boys mocked at Saumya, while the teacher appreciated her.
   (i) Why should we conserve biodiversity?
   (ii) What role is played by botanical garden in the conservation of biodiversity?
   (iii) Who besides botanists look after plants in botanical gardens?
   (iv) What values did Saumya possess?
4. Write any three advantages of scientific names.
5. In which fields taxonomical aids are helpful? Why taxonomic aids are used in these studies? Which different taxonomical aids are used by the biologists?
6. Metabolic reactions can be shown outside the body in cell-free systems experimentally.Why are cells required in living organisms?
7. Metabolism is a defining feature of all living organisms without exception. Isolated metabolic reactions in vitro are not living things, but surely living reactions.Comment.
8. Why reproduction is necessary? is it essential for survival? If a living organism does not reproduce, in which category it will belong, living or non-living? How is sexual reproduction different from asexual reproduction?
9. How do you prepare your own herbarium sheets? What are different tools you carry with you while, collecting plants for the preparation of a herbarium? What information should a preserved plant material on the herbarium sheet provide for taxonomic studies?
10. Write short notes on following: Phylum, Order, Genus and Species.
11. How is a zoological park helpful to scientists?
12. Describe binomial nomenclature with an example.
13. List the information that should be shown on & the label of a herbarium sheet.
14. What is the advantage of consciousness in living organisms?
15. All living organisms are linked with a common genetic material. What is this material ?
16. How will you differentiate between growth of plants and animals?
17. A ball of snow when rolled over snow increases in mass, volume and size. Is this comparable to growth as seen in living organisms?why?
18. Which organisms can sense and respond to their environment? How do humans sense their environment?
19. Properties of cell organelles are not always found in the molecular constituents of cell organelles. Justify.
20. In a given habitat we have 20 plant species and 20 animal species. Should we call it as 'diversity' or 'biodiversity'? Justify your answer.
21. What do we learn from identification of individuals and populations?
22. A plants may have different names in different regions of the country or world. How do botanists solve this problem?
23. How is a key helpful in the identification and classification of an organism?
24. Write the two codes of nomenclature of living organisms.
25. The term systematics refers to_____.
    (a) identification and classification of plants and animals. (b) nomenclature and identification of plants and animals. (c) diversity of kinds of organisms and their relationship. (d) different kinds of organisms and their classification
26. Genus represents _____.
    (a) an individual plant or animal (b) a collection of plants or animals (c) a group of closely related species of plants or animals. (d) None of the above
27. How may gram of water form when 180 gm of glucose completed converted into maltose?
    (a) 18 gm (b) 1.8 gm (c) 0.18 gm (d) 180 gm
28. What is the full form of ICBN?
    (a) International Council for Botanical Nomenclature (b) International Code for Botanical Nomenclature (c) International Code for Biological Nomenclature (d) Indian Code for Biological Nomenclature
29. Which is the topmost taxa in zoology?
    (a) Kingdom (b) Phylum (c) Division (d) Order
30. Which the topmost taxa in Botany?
    (a) Kingdom (b) Phylum (c) Division (d) Order
31. Why are biological names written in Italics?
    (a) To show Italian Origin (b) To show French Origin (c) To show Latin Origin (d) To show British Origin
32. Which of the following can also be made in your home?
    (a) Botanical Garden (b) Zoological Park (c) Keys (d) Herbarium
33. Which of the following characteristic of living beings, can also be observed in some non-livings?
    (a) Respiration (b) Reproduction (c) Growth (d) Stimulation

34. Polemoniales is the order which includes plant families Solanaceae and _____.
(a) Brassicaceae (b) Fabaceae (c) Convolvulaceae (d) Liliaceae

35. Which among the following is not a genus?
(a) Solanum (b) indica (c) Felis (d) Homo

36. Which among the following is not associated with asexual reproduction?
(a) Gamete formation (b) Fragmentation (c) Spore formation (d) Budding

37. Genus represent _____.
(a) An individual plant or animal (b) A collection of plants or animals (c) A group of closely related species of plants or animals (d) None of these

38. The taxonomic unit 'Phylum' in the classification of animals is equivalent to which hierarchical level in classification of plants _____.
(a) Class (b) Order (c) Division (d) Family

39. Which of the following is a defining characteristic of living organisms?
(a) Growth (b) Ability to make sound (c) Reproduction (d) Response to external stimuli

40. Taxonomic key is one of the taxonomic tools in the identification anClclassification of plants and animals. It is used in the preparation of _____.
(a) Monographs (b) Flora (c) Both a and b (d) None of these

41. The basic rule of taxonomy is
I. A new taxon cannot be framed if the organism is different from the existing taxa.
II. Orgainsms are described on the basis of morphology and other characterstics.
(a) Statement I is correct, but II is incorrect (b) Statement I is incorrect, but II is correct (c) Both statements I and II are correct (d) Both statements I and II are incorrect

42. Consider the following statements.
I. Classification is not a single step process, but involves hierarchy of steps in which each step represents a rank or category.
II. Taxonomic hierarchy constitutes taxonomic categories.
(a) Statement I is correct, but II is incorrect (b) Statement I is incorrect, but II is correct (c) Both statements Iand II are correct (d) Both statements I and II are incorrect

43. The process by which anything is grouped into convenient categories based on some easily observable characters is _____.
(a) identification (b) classification (c) sorting (d) grouping

44. Go through the statements given below and choose the option with all incorrect statements.
I. Classification is not a single step process, but involves hierarchy of steps in which each step represents a rank or category.
II. Vernacular names are easier to pronounce.
III. Common name ' touch-me-not ' is given to two species, i.e. Nigella and Mimosa.
IV. Vernacular names often have no significance.
(a) I and II (b) Only II (c) I, II and II (d) Only III

45. Which of the following is against the rules of ICBN?
(a) Handwritten scientific namnes should be underlined. (b) Every species should have a generic name and a specific epithet.
(c) Scientific names are in Latin and should be italicised. (d) Generic and specific names should start with small letters.

46. Choose the incorrect match.
(a) Order - a group of related families (b) Genus - a group of related species (c) Class - a group of related orders (d) Division - a group of related phyla

47. Arrange the following in ascending order of similar characteristics.
i) Family
ii) Genus
iii) Class
iv) Species
(a) Class < Family < Genus < Species (b) Family < Class < Genus < Species (c) Species < Genus < Family < Class (d) Class < Genus < Species < Family

48. Assertion (A) : Taxonomic studies require correct classification and identification of organisms.
Reason (R) :Taxonomic studies are useful in knowing our bioresources and their diversity.
(a) (a) Both A and R are true and R is the correct explanation of the A. (b) (b) Both A and R are true, but R is not the correct explanation of the A. (c) (c) A is true, but R is false.
(d) (d) A is false,but R is true.

49. Assertion (A) : Species is a group of individuals with fundamental similarities.
Reason (R) : indica, leo, tuberosum represent such group of individuals.
(a) (a) Both A and R are true and R is the correct explanation of the A. (b) (b) Both A and R are true, but R is not the correct explanation of the A. (c) (c) A is true, but R is false.
(d) (d) A is false,but R is true.

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