



The Living World Important Questions With Answers

NEET Biology 2023

1. **Assertion:** Systematics is defined as the science of diversity of organisms in evolutionary context.

Reason: Systematics include interrelationship between organisms

a) If both assertion and reason are true and reason is the correct explanation of assertion.

b) If both assertion and reason are true but reason is not the correct explanation of assertion.

c) If assertion is true but reason is false. d) If both assertion and reason are false.

Solution : -

Simpson (1961) has defined systematics as the branch of biology that deals with the diversity of organism at every level of classification. It deals with cataloging plants, animals and other organisms into categories that can be named, remembered, compared and studied. Study of only one organism of a group provides sufficient information about the remaining members of that group. It also helps in developing evolutionary relationships with or without the help of taxonomic studies of fossils.

2. 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**

3. Select the correct option for biological names.

a) They are binomial b) They are descriptive c) They are universal **d) All of these**

Solution : -

The scientific names or biological names consist of two components - a generic name and a specific epithet. The name with two components are called binomial.

The scientific names are universal, being used all over the world irrespective of the language of the people. They are often descriptive, indicating some important characteristic of the organism.

4. Which of the following represents defining feature of living organisms?

a) Growth b) Reproduction c) Metabolism **d) Locomotion**

5. Select the incorrect statement with respect to the category, 'genus'.

a) It is a group or assemblage of related species.

b) A genus essentially possesses more than one number of species

c)

Lion, Tiger, Leopard, Jaguar are closely related species which have been placed in the genus Panthera and are respectively named as Panthera leo, P. tigris, P. pardus and P. onca.

d) Solanum, Penicillium, Withania and Canis are the examples of genera.

Solution : -

It is not essential for a genus to have several species. The genus which has single species is called monotypic, while the genus which has several species is called polytypic

6. Choose the correct expression

a) a group of related genera - Family b) a group of related species - order

c) a group of related families - class d) a group of related orders - genus

7. **Assertion:** Classification is necessary to study all living organisms.

Reason: In classification, individuals are grouped into categories.

a) If both assertion and reason are true and reason is the correct explanation of assertion.

b) If both assertion and reason are true but reason is not the correct explanation of assertion.

c) If assertion is true but reason is false. d) If both assertion and reason are false.

Solution : -

It is nearly impossible to study all the living organisms. Classification refers to the process by which individuals are grouped into categories. So, classification makes it possible to study all the living organisms by studying the category wise characteristics.

8. Which of the following categories possesses maximum number of related characters?

a) Order b) Phylum c) Class d) **Species**

Solution : -

The number of similar characters of categories increases from highest rank to lowest rank in a taxonomic hierarchy. Out of the given categories, i.e., order, phylum, class and species, the species being the lowest category possesses the maximum number of related characters.

9. Which of the following statements regarding the universal rules of biological nomenclature is incorrect?

a) Biological names are generally in Latin and written in italics.

b) The first word in a biological name represents the genus while the second component denotes the species.

c)

Both the words in a biological name, when handwritten, are separately underlined, or printed in italics to indicate their Latin origin.

d)

The specific epithet starts with a capital letter while the generic epithet starts with a small letter. It can be illustrated with the example of Mangifera Indica

Solution : -

The generic epithet starts with a capital letter while the specific epithet starts with a small letter. It can be illustrated with the example of **Panthera tigris**.

10. First life on earth was _____ .

a) Cyanobacteria b) **Chemoheterotrophs** c) Autotrophs d) Photoautotrophs

Solution : -

In the environment of sea, first living beings were formed having abundant organic molecules. They absorbed the organic materials for the sake of nutrition and hence were chemoheterotrophs.

11. National Zoological Park is situated at

a) **Delhi** b) Lucknow c) Jaipur d) Darjeeling

12. The basic unit upon which the systems of classification are based is

a) **species** b) genus c) order d) family

Solution : -

Species is the basic unit upon which the systems of classification are based

13. Two animals belong to the same kingdom but different classes. They may belong to the same

a) **phylum** b) order c) division d) species

Solution : -

Animals belonging to the same kingdom but different classes may belong to the same phylum.

14. In taxonomic hierarchy, cats are placed under the Genus

a) Felis b) Panthera c) **Canis** d) none of these

Solution : -

Cats belong to the genus Felis.

15. Nomenclature is governed by certain universal rules. Which of the following is contrary to the rules of nomenclature?

a) The first word in a biological name represents the genus name and the second is a specific epithet.

b) The names are written in Latin and are italicized.

c) When written by hand, the names are to be underlined.

d) **Biological names can be written in any language.**

Solution : -

Rules for Nomenclature:

- (a) Latinised names are used.
- (b) First word represents the genus, while the second word is species name.
- (c) Printed in italics; if handwritten then underlined separately.
- (d) First word starts with a capital letter while species name is written in small letters.

16. **Assertion:** Living organisms show internal as well as external growth.

Reason: Living organisms undergo the process known as accretion

- a) If both assertion and reason are true and reason is the correct explanation of assertion.
- b) If both assertion and reason are true but reason is not the correct explanation of assertion.
- c) If assertion is true but reason is false. **d) If both assertion and reason are false.**

17. The main purpose for the classification of organisms is to

- a) study geography b) locate plants and animals **c) establish relationships amongst organisms**
- d) study evolution

18. The term 'systematics' refers to

- a) identification and study of organ systems **b) identification and preservation of plants and animals**
- c) diversity of kinds of organisms and their relationship
- d) study of habitats of organisms and their classification.

Solution : -

All living organisms are made of chemicals. These chemicals, small and big, belonging to various classes, sizes, functions, etc., are constantly being made and changed into some other biomolecules. These conversions are chemical reactions or metabolic reactions. There are thousands of metabolic reactions occurring simultaneously inside all living organisms, be they unicellular or multicellular.

19. An English naturalist, who wrote the book '**Historia Generalis Plantarum**' and introduced the word 'species' was

- a) Theophrastus** b) John Ray c) Cuvier d) Lamarck

20. **Assertion:** Keys are analytical in nature.

Reason: Keys are based on couplet.

- a) If both assertion and reason are true and reason is the correct explanation of assertion.
- b) If both assertion and reason are true but reason is not the correct explanation of assertion.**
- c) If assertion is true but reason is false. d) If both assertion and reason are false.

Solution : -

Key is a taxonomical aid used for identification of plants and animals based on the similarities and dissimilarities. The keys are based on contrasting characters generally in a pair called couplet. Keys are generally analytical in nature.

21. _____ are useful in providing information for identification of names of species found in an area.

- a) Flora **b) Manuals** c) Monographs d) Catalogues

22. Mark the Incorrect statement w.r.t. museums

- a) Specimens are preserved in preservative b) insects are kept in insect boxes
- c) Live animals are kept in protected environments**
- d) Specimens are also be preserved as dry specimens

23. In a herbarium, sheets are arranged according to

- a) Regionally accepted system of classification **b) Universally accepted system of classification**
- c) Nationally accepted system of classification d) Locally accepted system of classification

24. Match column I with column II and select the correct option from the codes given below.

Column I	Column II
A. Ecology	(i) Relationships of organisms and environment
B. Herbarium	(ii) Original specimen cited by an author
C. Holotype	(iii) A hierarchial unit
D. Taxon	(iv) Collection of wild and domestic plants

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

Solution : -

A particular specimen or illustration designated by the author to represent the type of a species is referred to as holotype. It is now essential to designate a holotype when publishing a new species.

25. Which two of the below given points are known as the twin characteristics of growth?

- (i) Increase in mass
 (ii) Increase in number of individuals
 (iii) Cellular organisation
 (iv) Cellular differentiation

- a) **(i) and (ii)** b) (i) and (iii) c) (ii) and (iii) d) (iii) and (iv)

Solution : -

Increase in body mass (by cell division) and increase in number of individuals (by reproduction) are considered as twin characteristics of growth.

26. Botanical gardens have

- a) Living plants and animals for reference **b) Collection of living plants** c) Preserved plant specimens
 d) Living and preserved plants

27. Pedology is science of _____ .

- a) Earth **b) Soil** c) Diseases d) Pollution

Solution : -

Pedology is the study of soil and soil properties.

28. Catalogues

- a) list or register containing names of all the species found in a particular place**
 b) booklet containing all the characters and their alternates which are helpful in identifying all the taxa
 c) handy book containing instruction of a species d) treatise having all informations about a particular taxon.

29. Living organisms show all the following properties, except

- a) Self replication b) Evolution c) Self regulation **d) High specific gravity and extrinsic growth**

30. Match column I with column II and select the correct option from the given codes.

Column I	Column II
A. John Ray	(i) Gave the concept of new systematics
B. C. Linnaeus	(ii) First described species as a unit of classification
C. Aristotle	(iii) Father of Zoology
D. Julian Huxley	(iv) Introduced binomial nomenclature

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

31. Which one of the following is common to multicellular fungi, filamentous algae and protonema of mosses?

- a) Mode of Nutrition **b) Multiplication by fragmentation** c) Diplontic life cycle
 d) Members of kingdom Plantae

32. The plants growing in an area surrounded by a geographical or political boundary will be included in

- a) fauna b) aquatic ecosystem **c) flora** d) terrestrial ecosystem

33. Select the mismatched pair.

- a) Panthera lea - Belongs to Class Mammalia **b) Musca domestica - The common house lizard, a reptile**
 c) Entamoeba coli - Commonly occurring protozoan in human intestine
 d) Solanum tuberosum - A dicotyledonous plant

Solution : -

Musca domestica is a housefly that belongs to Class Insecta of Phylum Arthropoda.

34. What is true for individuals of same species?

- a) Live in same niche b) Live in same habitat **c) Interbreeding** d) Live in different habitat

Solution : -

Individuals of the same species can interbreed. No two individuals share the same ecological niche.

35. Floral features are commonly used for identification of angiosperms because
a) reproductive parts are more conservative b) flowers can be safely preserved
 c) flowers are nice to work with d) flowers have various colours and scents.
36. The main objective of plant taxonomy is
 a) to study the world's flora b) to provide a method for identification and nomenclature
 c) to provide Latin 'scientific' names for every group of plants in the world **d) all of these.**
37. Carolus Linnaeus belonged to
a) France b) Germany c) Sweden d) Holland.

Solution : -

Carolus Linnaeus (1707-1778) was a Swedish naturalist, who is known as the Father of taxonomy.

38. All living organisms are linked to one another because
a) they have common genetic material of the same type
 b) they share common genetic material but to varying degrees c) all have common cellular organisation
 d) all of the above.

Solution : -

Both the words in binomial nomenclature, when handwritten, are separately underlined or printed in italics to indicate their Latin origin.

39. A true species consists of a population which is
 a) sharing the same niche **b) interbreeding** c) feeding over the same food d) geographically isolated

Solution : -

As per the definition given by Ernst Mayr in 1964 : "A species is a group of actually or potentially inbreeding populations that are reproductively isolated from other such groups." A species may have subgroups, called subspecies or varieties, showing certain distinct features of their own

40. **Assertion:** Order is a taxonomic category that includes one or more genera.
Reason: All the genera in an order have some similar features and co-related characters.
 a) If both assertion and reason are true and reason is the correct explanation of assertion.
 b) If both assertion and reason are true but reason is not the correct explanation of assertion.
 c) If assertion is true but reason is false. **d) If both assertion and reason are false.**

Solution : -

Family is taxonomic category which contains one or more related genera. All the genera of a family have some common features or co-related characters. Order includes one or more related families.

41. Which taxonomic aid gives comprehensive account of complete compiled information of a genus or family at a particular time?
 a) Taxonomic key b) Herbarium **c) Monograph** d) All of these

Solution : -

Monographs contain detailed information on any one taxon.

42. Which of the following organisms does not reproduce?
 a) Mule b) Worker bee c) Infertile human female **d) All of these**

Solution : -

A mule is a hybrid of male donkey and female horse. It is sexually sterile (i.e., unable to reproduce) and has to be produced every time a new.

Honeybees are colonial, social and polymorphic insects. Three types of individuals (castes) are found in the colony of honeybees: (i) Queen which is fertile female. (ii) Drones which are males. (iii) Workers are sterile females and perform various duties of the colony.

An infertile human female is unable to produce children inspite of unprotected sexual activities.

43. Incorrect statement in relation to taxonomic key is
 a) Based on set of contrasting characters b) Generally analytical in nature
c) Same taxonomic key can be used for different taxonomic categories
 d) Used for the identification of both plants and animals

44. Quick referral systems in taxonomic studies are?

a) **Botanical garden** b) Herbaria c) Monograph d) manual

45. Match column I with column II and select the correct option from the codes given below.

Column I	Column II
A. Botanical garden	(i) Preserved plant specimens
B. Zoological park	(ii) Preserved plant and animal specimens
C. Museum	(iii) Living plants
D. Herbarium	(iv) Living wild animals

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

46. Match the following

Column I	Column II
(a) Musca	(i) Anacardiaceae, Sapindales
(b) Homo	(ii) Hominidae, Primata
(c) Triticum	(iii) Poaceae, Poales
(d) Mangifera	(iv) Diptera, Insecta

a) a(iv), b(i),c(ii),d(iii) b) a(iv),b(iii),c(i),d(ii) c) a(iv),b(ii),c(iii),d(i) d) a(ii),b(iv),c(i),d(iii)

47. The internationally recognised binomial nomenclature was developed by Linnaeus in his book

a) Philosophia Botanica b) Historia Plantarum c) Species Plantarum d) none of these

48. Match column I with column II and select the correct option from the codes given below.

Column I	Column II
A. Planaria	(i) Binary fission
B. Fungi	(ii) Asexual spore
C. Yeast	(iii) Budding
D. Amoeba	(iv) True regeneration
	(v) Fragmentation

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

49. Which of the following 'suffixes' used for units of classification in plants indicates a taxonomic category of 'family'?

a) -Ales b) -Onae **c) -Aceae** d) -Ae

Solution : -

The name of a plant family is plural adjective and is formed by adding the suffix-aceae e.g., Rosaceae, Linaceae and Cucurbitaceae

50. Amongst all the kingdoms, the only taxon that exists in nature as a biologically cohesive unit is the

a) species b) genus c) phylum or division d) kingdom