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Biology Grade 9 — Chapter 2

Biodiversity

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Independent practice MCQs from the supplied Class 9 Biology notes pack. Total: 50 questions.

A. Important / Main Topics

1. The term biodiversity comes from:

(A) Biological diversity
(B) Biological variety
(C) Biotic diversity
(D) Biosphere diversity

Correct Answer: A

Explanation: The term biodiversity comes from biological diversity.

2. Biodiversity is defined as the variety of:

(A) Ecosystems
(B) Living organisms on earth
(C) Non-living things
(D) Climates

Correct Answer: B

Explanation: Biodiversity is defined as "the variety of living organism on earth.".

3. How many naturally occurring elements are there on Earth, out of which 16 are bioelements?

(A) 16
(B) 50
(C) 92
(D) 118

Correct Answer: C

Explanation: Out of 92 naturally occurring elements of Earth, 16 are bioelements.

4. The branch of biology concerned with identification, naming, and classification of organisms is called:

(A) Ecology
(B) Systematics
(C) Morphology
(D) Taxonomy

Correct Answer: D

Explanation: Taxonomy is the branch of biology concerned with identification, naming, and classification of organisms.

5. Who was the first person to classify living organisms?

(A) Aristotle
(B) Carolus Linnaeus
(C) Carl Woese
(D) Robert Whittaker

Correct Answer: A

Explanation: Aristotle — this correctly answers the question.

6. How many kingdoms are there in Robert Whittaker's classification system?

(A) Two
(B) Five
(C) Three

(D) Four

Correct Answer: B

Explanation: Robert Whittaker introduced the five-kingdom classification system in 1967. The five kingdoms are Monera, Protista, Fungi, Plantae, and Animalia.

7. Which domain includes organisms that often live in extreme environments?

(A) Bacteria
(B) Eukarya
(C) Archaea
(D) Protista

Correct Answer: C

Explanation: Archaea often live in extreme environments, and their membranes can withstand higher temperatures and stronger acid concentrations.

8. The domain Eukarya is divided into how many kingdoms?

(A) Two
(B) Three
(C) Five
(D) Four

Correct Answer: D

Explanation: The domain Eukarya is divided into four kingdoms: Protista, Fungi, Plantae, and Animalia.

9. The scientific study of the diversity of organisms and their evolutionary relationship is called:

(A) Systematics
(B) Taxonomy
(C) Classification
(D) Paleontology

Correct Answer: A

Explanation: Systematics is the scientific study of the diversity of organisms and their evolutionary relationship.

10. What is the most basic unit of classification?

(A) Genus
(B) Species
(C) Family
(D) Kingdom

Correct Answer: B

Explanation: Species is the most basic unit of classification, as well as a taxonomic rank.

11. Which of the following is the correct order of taxonomic ranks from largest to smallest?

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

Correct Answer: C

Explanation: The correct order from largest to smallest is Domain → Kingdom → Phylum → Class → Order → Family → Genus → Species.

12. Who introduced binomial nomenclature?

(A) Aristotle
(B) Ernst Haeckel
(C) Robert Whittaker
(D) Carolus Linnaeus

Correct Answer: D

Explanation: Carolus Linnaeus introduced a naming system to give each organism a name consisting of two Latin names, called binomial nomenclature.

13. In binomial nomenclature, the genus name begins with a:

(A) Capital letter
(B) Small letter
(C) Number
(D) Symbol

Correct Answer: A

Explanation: The genus name begins with a capital letter, while the species name begins with a small letter.

14. Which of the following is a living characteristic of viruses?

(A) They can be crystallized
(B) They have their own genetic material
(C) They do not respire
(D) They lack cellular structure

Correct Answer: B

Explanation: Having their own genetic material (RNA or DNA) is a living characteristic of viruses.

15. Prions are composed of:

(A) RNA only
(B) DNA only
(C) Proteins only
(D) Lipids only

Correct Answer: C

Explanation: Prions are composed of proteins only.

16. Which of the following is an ecological importance of biodiversity?

(A) Providing building materials
(B) Providing medicines
(C) Providing fibres for clothing
(D) Helping the carbon cycle

Correct Answer: D

Explanation: Helping the carbon cycle is an ecological importance. The others are economic importance.

17. Pests are controlled by organisms such as:

(A) Insects, birds, and fungi
(B) Only chemicals
(C) Only birds
(D) Only bacteria

Correct Answer: A

Explanation: The text states that pests are controlled by organisms such as insects, birds, and fungi.

18. The main aims of classification include all of the following EXCEPT:

(A) To determine similarities and differences between organisms
(B) To create confusion among scientists
(C) To arrange organisms on the basis of similarities and differences
(D) To find out evolutionary relationships among organisms

Correct Answer: B

Explanation: The main aims of classification include all of the following EXCEPT To create confusion among scientists.

19. In the two-kingdom system, bacteria, fungi, and algae were included in the kingdom:

(A) Animalia
(B) Protista
(C) Plantae
(D) Monera

Correct Answer: C

Explanation: The kingdom Plantae included autotrophs, and bacteria, fungi, and algae were also included in this kingdom.

20. Which organism has both plant-like and animal-like characteristics, leading to the creation of the kingdom Protista?

(A) Rose
(B) Mango
(C) Fowl
(D) Euglena

Correct Answer: D

Explanation: Euglena has chlorophyll (plant-like) and heterotrophic nutrition in darkness with no cell wall (animal-like).

21. Who proposed the three-kingdom classification system?

(A) Ernst Haeckel
(B) Aristotle
(C) Robert Whittaker
(D) Carl Woese

Correct Answer: A

Explanation: Ernst Haeckel — this correctly answers the question.

22. In which year did Robert Whittaker introduce the five-kingdom system?

(A) 1937
(B) 1967
(C) 1882
(D) 1990

Correct Answer: B

Explanation: 1967 — this correctly answers the question.

23. Who introduced the three-domain system of classification?

(A) Aristotle
(B) Robert Whittaker
(C) Carl Woese
(D) Ernst Haeckel

Correct Answer: C

Explanation: Carl Woese — this correctly answers the question.

24. Classification into three domains is based on all of the following EXCEPT:

(A) Sequence of nucleotides in rRNA
(B) Cell membrane lipid structure
(C) Sensitivity to antibiotics
(D) Body size of the organism

Correct Answer: D

Explanation: Classification into three domains is based on rRNA sequence, cell membrane lipid structure, and sensitivity to antibiotics, not body size.

25. The cell walls of bacteria contain:

(A) Peptidoglycan
(B) Chitin
(C) Cellulose
(D) Lignin

Correct Answer: A

Explanation: The cell walls of bacteria contain Peptidoglycan.

B. Less Important / Secondary Topics

26. Which kingdom includes multicellular heterotrophic eukaryotes that lack a cell wall and can generally move?

(A) Animalia
(B) Plantae
(C) Fungi
(D) Protista

Correct Answer: A

Explanation: Animalia — this correctly answers the question.

27. Fungi have which substance in their cell walls?

(A) Cellulose
(B) Chitin
(C) Peptidoglycan
(D) Lignin

Correct Answer: B

Explanation: Chitin — this correctly answers the question.

28. Organisms that depend on dead, decaying matter are called:

(A) Autotrophs
(B) Heterotrophs
(C) Saprotrophs
(D) Producers

Correct Answer: C

Explanation: Organisms that depend on dead, decaying matter are called Saprotrophs.

29. A phylum is a group of related:

(A) Orders
(B) Families
(C) Genera
(D) Classes

Correct Answer: D

Explanation: A phylum is a group of related classes.

30. A class is a group of related:

(A) Orders
(B) Phyla
(C) Families
(D) Species

Correct Answer: A

Explanation: A class is a group of related orders.

31. A genus is a group of related:

(A) Families
(B) Species
(C) Orders
(D) Classes

Correct Answer: B

Explanation: A genus is a group of related species.

32. Why is a mule not considered a species?

(A) It has an even number of chromosomes
(B) It is too large
(C) It is infertile
(D) It lacks reproductive organs

Correct Answer: C

Explanation: A mule is infertile because of the odd number of chromosomes, so it cannot reproduce and is not considered a species.

33. The biological name of brinjal is:

(A) Solanum tuberosum
(B) Oryza sativa
(C) Felis catus
(D) Solanum melongena

Correct Answer: D

Explanation: The biological name of brinjal is Solanum melongena.

34. Which of the following is a non-living characteristic of viruses?

(A) They can be crystallized and stored in a bottle
(B) They reproduce inside a host
(C) They cause diseases
(D) They have genetic material

Correct Answer: A

Explanation: The ability to be crystallized and stored is a non-living characteristic of viruses.

35. Viroids are composed of:

(A) Proteins only
(B) Circular RNA only
(C) DNA only
(D) Carbohydrates only

Correct Answer: B

Explanation: Viroids are composed of circular RNA only.

36. A scientist discovers a new unicellular organism that has a nucleus, is aquatic, and moves using pseudopodi

(A) To which kingdom does it most likely belong? A. Monera
(B) Fungi
(C) Protista
(D) Animalia

Correct Answer: C

Explanation: "Protista" is correct: it matches the idea asked in the question ("A scientist discovers a new unicellular organism that has a nucleus, is aquatic, and moves using pseudopodi"), while the other choices do not.

37. Which of the following best explains why the two-kingdom system was replaced?

(A) It had too many kingdoms
(B) It was too complicated
(C) It did not include bacteria
(D) Organisms like Euglena had both plant-like and animal-like characteristics

Correct Answer: D

Explanation: Euglena has chlorophyll (plant-like) and heterotrophic nutrition in darkness with no cell wall (animal-like), making the two-kingdom system inadequate.

38. Which of the following correctly distinguishes Archaea from Bacteria?

(A) Archaea lack peptidoglycan in their cell walls; Bacteria have peptidoglycan
(B) Archaea are eukaryotic; Bacteria are prokaryotic
(C) Archaea are multicellular; Bacteria are unicellular
(D) Archaea are sensitive to traditional antibacterial antibiotics; Bacteria are not

Correct Answer: A

Explanation: Archaea lack peptidoglycan in their cell walls; Bacteria have peptidoglycan — this correctly answers the question.

39. A scientist is classifying a newly discovered organism. It is multicellular, autotrophic, has cellulose in its cell wall, and contains chloroplasts. To which kingdom does it belong?

(A) Protista
(B) Plantae
(C) Fungi
(D) Animalia

Correct Answer: B

Explanation: Members of kingdom Plantae are eukaryotic, multicellular, and autotrophic with chloroplasts containing chlorophyll. Their cell wall is made up of cellulose.

40. Which of the following statements about viruses is correct?

(A) They are included in the kingdom Monera
(B) They are classified in the domain Archaea
(C) They are not included in any domain or kingdom
(D) They are classified as fungi

Correct Answer: C

Explanation: Because viruses are at the borderline of living and non-living, they are not included in any domain or kingdom under modern classification.

41. In binomial nomenclature, if the genus name is Felis and the species name is catus, what is the correct scientific name?

(A) Felis Catus
(B) felis catus
(C) FELIS CATUS
(D) Felis catus

Correct Answer: D

Explanation: The genus name begins with a capital letter (Felis) and the species name begins with a small letter (catus).

42. Which of the following best explains why Latin is used for scientific names?

(A) It is a universal language that does not change
(B) It is the most modern language
(C) It is easy to pronounce
(D) It is spoken in every country

Correct Answer: A

Explanation: It is a universal language that does not change — this correctly answers the question.

43. A farmer notices that his brinjal crop is being damaged by pests. Which of the following would be the most direct example of biodiversity's role in controlling pests?

(A) Using chemical pesticides
(B) Introducing birds and fungi that feed on the pests
(C) Increasing fertilizer use
(D) Planting more brinjal

Correct Answer: B

Explanation: The text states that pests are controlled by organisms such as insects, birds, and fungi.

44. Which of the following statements about the three domains is correct?

(A) Bacteria and Archaea both have peptidoglycan in their cell walls
(B) Archaea are sensitive to traditional antibacterial antibiotics
(C) Eukarya are resistant to traditional antibacterial antibiotics
(D) Bacteria are eukaryotic

Correct Answer: C

Explanation: Eukarya are resistant to traditional antibacterial antibiotics but are sensitive to most antibiotics that affect eukaryotic cells.

45. An organism has cells with a nucleus but no cell wall. It is multicellular and heterotrophic. To which kingdom does it belong?

(A) Plantae
(B) Fungi
(C) Protista
(D) Animalia

Correct Answer: D

Explanation: Animalia — this correctly answers the question.

46. Which of the following correctly describes the cell wall composition of different organisms?

(A) Plantae: cellulose; Fungi: chitin; Bacteria: peptidoglycan
(B) Plantae: chitin; Fungi: cellulose; Bacteria: peptidoglycan
(C) Plantae: peptidoglycan; Fungi: cellulose; Bacteria: chitin
(D) Plantae: cellulose; Fungi: peptidoglycan; Bacteria: chitin

Correct Answer: A

Explanation: The text states that Plantae have cellulose in their cell walls, fungi have chitin, and bacteria have peptidoglycan.

47. What do prions and viroids have in common?

(A) Both are composed of DNA
(B) Both cause infectious diseases in certain plants
(C) Both are cellular organisms
(D) Both are classified in the kingdom Monera

Correct Answer: B

Explanation: The text states that both prions and viroids cause infectious diseases in certain plants, and both are acellular particles not included in any kingdom.

48. A scientist is studying a newly discovered organism. It is unicellular, has a cell wall with peptidoglycan, and is sensitive to traditional antibacterial antibiotics. To which domain does it belong?

(A) Archaea
(B) Eukarya
(C) Bacteria
(D) Protista

Correct Answer: C

Explanation: Bacteria are prokaryotic, have peptidoglycan in their cell walls, and are sensitive to traditional antibacterial antibiotics.

49. Which of the following is an example of a scientific name that uses binomial nomenclature?

(A) Brinjal
(B) Baigun
(C) Bataoon
(D) Solanum melongena

Correct Answer: D

Explanation: The biological name of brinjal is Solanum melongena, which is a binomial name (genus + species).

50. Which of the following statements about the kingdom Fungi is correct?

(A) Fungi are saprotrophic decomposers
(B) Fungi are autotrophic
(C) Fungi have cellulose in their cell walls
(D) Fungi are always unicellular

Correct Answer: A

Explanation: Fungi are saprotrophic decomposers — this correctly answers the question.