

1. Which of the following kingdoms includes organisms that are unicellular, prokaryotic, and show the most extensive metabolic diversity?

- A. Protista
- B. Monera
- C. Fungi
- D. Plantae

✓ Answer: B. Monera

Explanation:

Kingdom Monera includes prokaryotes like bacteria, which exhibit diverse metabolic pathways—chemosynthetic, photosynthetic, heterotrophic, etc.

2. Which one of the following groups contains only unicellular eukaryotes?

- A. Fungi
- B. Monera
- C. Protista
- D. Plantae

✓ Answer: C. Protista

Explanation:

Protists are unicellular eukaryotic organisms like Amoeba, Paramecium, Euglena, etc.

3. Which of the following statements is incorrect about Kingdom Fungi?

- A. Fungi are mostly multicellular and heterotrophic
- B. Some fungi are used in antibiotics
- C. Fungi have chlorophyll and perform photosynthesis
- D. Cell wall of fungi is made of chitin

✓ Answer: C. Fungi have chlorophyll and perform photosynthesis

Explanation:

Fungi are heterotrophic and lack chlorophyll. They obtain nutrients by absorption.

4. Match the following groups with their characteristics:

Column I

Column II

- | | |
|-------------|------------------------------------|
| A. Monera | 1. Eukaryotic, unicellular |
| B. Protista | 2. Prokaryotic, cell wall present |
| C. Fungi | 3. Chitin in cell wall |
| D. Plantae | 4. Autotrophic with cellulose wall |

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

✓ Answer: A. A-2, B-1, C-3, D-4

Explanation:

Each organism group is matched with its main defining trait.

5. Which among the following organisms are wrongly placed in their respective kingdoms?

- A. Cyanobacteria – Monera
- B. Yeast – Fungi
- C. Euglena – Protista
- D. Nostoc – Protista

✓ Answer: D. Nostoc – Protista

Explanation:

Nostoc is a cyanobacterium (photosynthetic prokaryote), hence it belongs to Monera, not Protista.

6. Which one of the following organisms reproduces both by fragmentation and spore formation?

- A. Amoeba
- B. Penicillium
- C. Paramecium
- D. Euglena

✓ Answer: B. Penicillium

Explanation:

Penicillium, a fungus, reproduces asexually through spores and can also fragment into pieces which develop into new organisms.

7. Viruses are not classified into any kingdom because:

- A. They contain DNA only
- B. They do not show respiration
- C. They are considered to be non-living outside the host
- D. They are unicellular

✓ Answer: C. They are considered to be non-living outside the host

Explanation:

Viruses do not metabolize or reproduce unless inside a living host; hence, they are excluded from kingdom classification.

8. Which of the following is a feature of Mycoplasma?

- A. Cell wall made of chitin
- B. Cell wall made of cellulose
- C. Absence of cell wall
- D. Presence of nucleus

✓ Answer: C. Absence of cell wall

Explanation:

Mycoplasma are the smallest known living cells and lack a cell wall. They are resistant to antibiotics that target cell walls.

9. Which of the following pairs is mismatched?

- A. Methanogens – Archaeobacteria
- B. Diatoms – Chrysophytes
- C. Euglena – Dinoflagellate
- D. Amoeba – Protozoan

✓ Answer: C. Euglena – Dinoflagellate

Explanation:

Euglena is a euglenoid (part of Protista) but not a dinoflagellate. Dinoflagellates include Gonyaulax, Noctiluca, etc.

10. Select the correct statements regarding Kingdom Monera:

1. All members are unicellular
2. Some are photosynthetic autotrophs
3. Cell wall is always absent
4. They reproduce by binary fission

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

☒ Answer: A. 1, 2, and 4 only

Explanation:

Statement 3 is incorrect because many monerans (e.g. bacteria) have a cell wall made of peptidoglycan. Mycoplasma is an exception.

11. Archaeobacteria differ from eubacteria in:

- A. Cell wall composition and habitat
- B. DNA structure
- C. Presence of nucleus
- D. Photosynthetic pigment type

☒ Answer: A. Cell wall composition and habitat

Explanation:

Archaeobacteria have unusual lipids and lack peptidoglycan in their cell walls. They thrive in extreme habitats (hot springs, salt lakes).

12. Which of the following groups is known for causing red tides in oceans?

- A. Chrysophytes

- B. Euglenoids
- C. Dinoflagellates
- D. Slime moulds

✓ Answer: C. Dinoflagellates

Explanation:

Dinoflagellates like *Gonyaulax* multiply rapidly in marine environments and cause red tides due to pigmentation and toxin release.

13. Match the following organisms with their respective characteristics:

Column I

Column II

- | | |
|----------------|--------------------------|
| A. Methanogens | 1. Found in cattle rumen |
| B. Diatoms | 2. Siliceous cell wall |
| C. Mycoplasma | 3. No cell wall |
| D. Euglena | 4. Mixotrophic nutrition |

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

✓ Answer: A. A-1, B-2, C-3, D-4

Explanation:

Each organism is matched with its unique biological feature or habitat.

14. Which fungal group contains members that reproduce asexually by zoospores and sexually by isogamy or oogamy?

- A. Ascomycetes
- B. Zygomycetes
- C. Phycomycetes
- D. Basidiomycetes

✓ Answer: C. Phycomycetes

Explanation:

Phycomycetes include aquatic fungi like Albugo, Rhizopus, which reproduce with motile zoospores and exhibit isogamy or oogamy sexually.

15. Which of the following fungi are correctly matched with their asexual reproductive structures?

1. Aspergillus – Conidia
2. Rhizopus – Sporangiospores
3. Agaricus – Basidiospores
4. Yeast – Budding

- A. Only 1, 2, and 3
- B. All of the above
- C. Only 1 and 3
- D. Only 1, 2, and 4

☒ Answer: D. Only 1, 2, and 4

Explanation:

Basidiospores are sexual, not asexual spores. All others listed are valid asexual forms.

16. Which of the following statements is incorrect about slime moulds?

- A. They are saprophytic protists
- B. Their plasmodium can form fruiting bodies
- C. Their cell wall contains cellulose
- D. They show features of both animals and fungi

☒ Answer: C. Their cell wall contains cellulose

Explanation:

Slime moulds are amoeboid and lack a definite cell wall during the vegetative phase.

17. Assertion (A): Diatoms are called the “Pearls of the ocean.”

Reason (R): Diatoms form a major component of marine phytoplankton and produce a significant amount of oxygen.

- 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: A. Both A and R are true, and R is the correct explanation

Explanation:

Diatoms contribute significantly to marine food chains and oxygen production due to photosynthesis.

18. Lichens are considered indicators of pollution because:

- A. They survive in polluted areas
- B. They require CO₂ to grow
- C. They are sensitive to SO₂ and die in polluted air
- D. They use toxins as a food source

☒ Answer: C. They are sensitive to SO₂ and die in polluted air

Explanation:

Lichens are extremely sensitive to atmospheric sulfur dioxide and disappear from polluted zones, acting as bioindicators.

19. The major difference between Chrysophytes and Euglenoids is:

- A. Euglenoids are prokaryotic, Chrysophytes are not
- B. Euglenoids have cell wall; Chrysophytes do not
- C. Euglenoids show animal-like movement; Chrysophytes do not
- D. Euglenoids are only heterotrophic

☒ Answer: C. Euglenoids show animal-like movement; Chrysophytes do not

Explanation:

Euglenoids (like *Euglena*) have flagella and show movement, unlike diatoms and desmids (chrysophytes), which are immobile.

20. Which of the following organisms is considered connecting link between animals and plants due to dual mode of nutrition?

- A. Diatoms
- B. Euglena
- C. Chlorella
- D. Paramecium

✓ Answer: B. Euglena

Explanation:

Euglena can photosynthesize like plants in light and act heterotrophically in darkness. Hence, it's considered a connecting link.

21. Which fungal class contains both unicellular and multicellular forms and reproduces by budding and conidia respectively?

- A. Basidiomycetes
- B. Ascomycetes
- C. Phycomycetes
- D. Deuteromycetes

✓ Answer: B. Ascomycetes

Explanation:

Ascomycetes include unicellular yeast (budding) and multicellular molds (conidia), making it highly diverse in structure and reproduction.

22. The imperfect fungi are classified under Deuteromycetes because:

- A. They are unicellular only
- B. Their sexual stage is not known
- C. They are only parasitic
- D. They do not reproduce

✓ Answer: B. Their sexual stage is not known

Explanation:

Deuteromycetes are fungi with no observed sexual reproduction. Once discovered, their classification may shift to Ascomycetes or Basidiomycetes.

23. Which one of the following statements regarding diatoms is incorrect?

- A. Diatoms have a silica cell wall
- B. Diatoms form diatomaceous earth
- C. Diatoms reproduce only sexually
- D. Diatoms are microscopic phytoplankton

✓ Answer: C. Diatoms reproduce only sexually

Explanation:

Diatoms reproduce predominantly by asexual cell division. Sexual reproduction is also seen but not exclusively.

24. Mycoplasma differ from bacteria in:

- A. Being multicellular
- B. Having cell wall made of cellulose
- C. Having no cell wall
- D. Having chlorophyll

✓ Answer: C. Having no cell wall

Explanation:

Mycoplasmas are wall-less prokaryotes that can pass through bacterial filters. They're the smallest known living cells.

25. Assertion (A): Viruses are considered as living organisms.

Reason (R): They can reproduce outside the host cell.

- 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:

Viruses are considered living due to reproduction—but only inside host cells, not independently.

26. Which of the following protists have two flagella and stiff cellulose plates?

- A. Diatoms
- B. Euglenoids
- C. Dinoflagellates
- D. Slime moulds

✓ Answer: C. Dinoflagellates

Explanation:

Dinoflagellates (like *Gonyaulax*) have two flagella (one longitudinal, one transverse) and cellulose plates in their cell walls.

27. Identify the correct pair (organism – kingdom):

- A. Euglena – Monera
- B. Penicillium – Protista
- C. Amoeba – Protista
- D. Methanobacterium – Protista

✓ Answer: C. Amoeba – Protista

Explanation:

Amoeba is a unicellular eukaryote in Protista. Others are misclassified (e.g., Euglena is a protist, not moneran).

28. Which organism was discovered by Ivanowsky and found to pass through filters that retained bacteria?

- A. Viroid
- B. Mycoplasma
- C. TMV
- D. HIV

✓ Answer: C. TMV

Explanation:

Ivanowsky discovered the Tobacco Mosaic Virus (TMV) which passed through bacterial filters, suggesting it was smaller than bacteria.

29. Viroids differ from viruses in:

- A. Absence of RNA
- B. Presence of a protein coat
- C. Having only protein, no genetic material
- D. Lacking protein coat

✓ Answer: D. Lacking protein coat

Explanation:

Viroids are naked circular RNA molecules without a protein coat. Discovered by T.O. Diener, they infect plants.

30. Match the following groups with their correct descriptions:

Column I Column II

- | | |
|-------------------|---|
| A. Ascomycetes | 1. Common edible mushroom, basidia present |
| B. Basidiomycetes | 2. Yeast, penicillin-producing fungi |
| C. Phycomycetes | 3. Aquatic fungi, asexual reproduction common |
| D. Deuteromycetes | 4. Imperfect fungi with no sexual stage known |

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

✓ Answer: A. A-2, B-1, C-3, D-4

Explanation:

Each fungal group is matched with its distinct reproduction or structural feature.

31. Which group of organisms forms symbiotic association with algae in lichens?

- A. Cyanobacteria
- B. Basidiomycetes
- C. Ascomycetes
- D. Phycomycetes

✓ Answer: C. Ascomycetes

Explanation:

Most fungal partners in lichens belong to Ascomycetes. The algal component is usually a cyanobacterium or green alga.

32. Which of the following statements are true about viruses?

1. They have DNA or RNA
2. They replicate only inside host cells
3. They are living outside the host
4. They can be crystallized

- A. 1, 2, and 4
- B. 1 and 3
- C. 2, 3, and 4
- D. All of the above

☒ Answer: A. 1, 2, and 4

Explanation:

Viruses are non-living outside host cells but can be crystallized like chemicals, and they carry either DNA or RNA (never both).

33. Which of the following is not a feature of dinoflagellates?

- A. Bioluminescence
- B. Two flagella
- C. Silica cell wall
- D. Marine habitat

☒ Answer: C. Silica cell wall

Explanation:

Diatoms have silica walls, not dinoflagellates. Dinoflagellates have cellulose plates.

34. Assertion (A): Viroids are infectious agents smaller than viruses.

Reason (R): They contain both DNA and protein coat.

- A. Both A and R are true, and R is the correct explanation
- B. A is true but R is false
- C. Both A and R are false
- D. A is false but R is true

☒ Answer: B. A is true but R is false

Explanation:

Viroids are smaller than viruses, contain only RNA, and lack a protein coat.

35. Which of the following groups of fungi form ectomycorrhizal associations with plant roots?

- A. Ascomycetes and Basidiomycetes
- B. Zygomycetes and Phycomycetes
- C. Deuteromycetes only
- D. Phycomycetes and Ascomycetes

☒ Answer: A. Ascomycetes and Basidiomycetes

Explanation:

Some Basidiomycetes (like Boletus) and Ascomycetes form ectomycorrhizae, aiding in nutrient absorption.

36. The genetic material in bacteriophage is:

- A. Only RNA
- B. Only protein
- C. Both DNA and protein coat
- D. Both DNA and RNA

☒ Answer: C. Both DNA and protein coat

Explanation:

Bacteriophages (viruses that infect bacteria) typically contain DNA enclosed in a protein coat.

37. Match the following Protists with their mode of nutrition:

Column I

Column II

- | | |
|---------------|-------------------|
| A. Euglena | 1. Mixotrophic |
| B. Paramecium | 2. Holozoic |
| C. Diatoms | 3. Photosynthetic |
| D. Amoeba | 4. Phagocytic |

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

✓ Answer: A. A-1, B-2, C-3, D-4

Explanation:

Euglena: Mixotrophic

Paramecium: Holozoic

Diatoms: Photosynthetic

Amoeba: Phagocytic

38. Which of the following is a plant pathogen and belongs to Deuteromycetes?

- A. Agaricus
B. Albugo
C. Alternaria
D. Rhizopus

✓ Answer: C. Alternaria

Explanation:

Alternaria is a pathogenic fungus classified under Deuteromycetes due to the absence of a known sexual stage.

39. The characteristic feature of Rhizopus is:

- A. Presence of motile spores
- B. Reproduction by budding
- C. Asexual reproduction by sporangiospores
- D. Production of basidiospores

✓ Answer: C. Asexual reproduction by sporangiospores

Explanation:

Rhizopus (a phycomycete) reproduces asexually by non-motile spores called sporangiospores formed inside a sporangium.

40. Which of the following organisms has double-stranded RNA as genetic material?

- A. Viroid
- B. Retrovirus
- C. Reovirus
- D. TMV

✓ Answer: C. Reovirus

Explanation:

Reoviruses are the only known viruses with a double-stranded RNA genome.

41. Which of the following is/are correct about the five-kingdom classification by R.H. Whittaker?

- 1. Based on cell structure
- 2. Based on mode of nutrition
- 3. Based on ecological role
- 4. Based on evolutionary relationships

- A. 1 and 2 only
- B. 1, 2, and 3 only

- C. All except 4
- D. All are correct

✓ Answer: D. All are correct

Explanation:

Whittaker's classification considered all four criteria: cell structure, nutrition, reproduction, and phylogeny/ecology.

42. Which of the following organisms cause plant diseases?

- A. Puccinia
- B. Alternaria
- C. Albugo
- D. All of the above

✓ Answer: D. All of the above

Explanation:

All listed fungi are plant pathogens:

Puccinia – Rust in wheat

Alternaria – Leaf spots

Albugo – White rust in crucifers

43. Identify the incorrectly matched pair:

- A. Nostoc – Photosynthetic cyanobacteria
- B. Basidiomycetes – Puffballs
- C. Slime mould – Phagocytic nutrition
- D. Diatoms – Mixotrophic

✓ Answer: D. Diatoms – Mixotrophic

Explanation:

Diatoms are strictly autotrophic, not mixotrophic. Euglena shows mixotrophy.

44. The term “Mycorrhiza” refers to:

- A. Symbiotic association between bacteria and algae
- B. Association of virus and fungus
- C. Symbiosis between fungus and plant root
- D. Endoparasitic bacteria in human gut

✓ Answer: C. Symbiosis between fungus and plant root

Explanation:

Mycorrhiza is a mutualistic relationship between fungi (usually Basidiomycetes) and plant roots.

45. Which group of organisms includes species with both prokaryotic and autotrophic nature?

- A. Cyanobacteria
- B. Fungi
- C. Protozoa
- D. Euglenoids

✓ Answer: A. Cyanobacteria

Explanation:

Cyanobacteria (e.g. Nostoc, Anabaena) are prokaryotic and perform oxygenic photosynthesis, making them autotrophs.