

CHAPTER

2

Biological Classification

PRACTICE QUESTIONS

Kingdom Classification

- Who was the first to attempt a more scientific basis of classification?
(a) Linnaeus (b) Aristotle
(c) Whittaker (d) Bentham and Hooker
- Aristotle classified plants in herbs, shrubs and trees on the basis of
(a) Anatomical feature (b) Morphological characters
(c) Physiological characters (d) Biochemical characters
- In how many groups did Aristotle divide the animals on the basis of presence/absence of RBC?
(a) 1 (b) 2 (c) 3 (d) 4
- Two kingdom classification does not distinguish between
(a) Eukaryote and prokaryote
(b) Unicellular and multi-cellular organisms
(c) Photosynthetic (green algae) and non-photosynthetic (fungi) organisms
(d) All the above
- In which year Whittaker proposed the five kingdom classification?
(a) 1960 (b) 1959 (c) 1969 (d) 1979
- Whittaker's kingdom are
(a) *Plantae* and *Animalia* (b) *Monera* and *Protista*
(c) *Fungi* (d) All of these
- How many main criteria were used by Whittaker for classification?
(a) 1 (b) 3 (c) 4 (d) 5
- What is the criteria used by Whittaker for classification?
(1) Cell structure (2) Thallus organization
(3) Mode of nutrition (4) Reproduction
(5) Phylogenetic relationship (6) Biochemical difference
(7) Physiological character
(a) All except (5) and (6) (b) All except (5) and (7)
(c) All except (6) and (7) (d) All except (3) and (4)
- In earlier classification (like two kingdoms), the following are included in plant
(1) Bacteria, blue green algae, fungus (2) Mosses and fern
(3) Gymnosperms and angiosperm
(a) (1) only (b) (2) and (3) only (c) (3) only (d) All of these

10. What is common to bacteria, mosses and fungus?
 (a) It is a mode of nutrition (b) Presence of cell wall
 (c) Autotrophic (d) Body organization
11. All prokaryotic groups are put under _____ kingdom
 (a) Monera (b) Plantae (c) Fungi (d) Protista
12. Kingdom protista contains
 (a) Blue green algae (b) Fungi
 (c) Unicellular eukaryotes (d) All of these
13. Chlamydomonas, chlorella, paramecium and amoeba are placed in which kingdom of Whittaker's classification?
 (a) Monera (b) Plantae (c) Fungi (d) Protista
14. Phylogeny refers to
 (a) Morphology (b) Physiology
 (c) Reproduction (d) Evolutionary relationship
15. Kingdom monera contains
 (a) Bacteria (b) Dinoflagellate
 (c) Slime moulds (d) Euglenoid
16. Most abundant microorganism are
 (a) bacteria (b) virus (c) amoeba (d) paramecium
17. Which of the following is incorrect about bacteria?
 (A) It is grouped under five categories on the basis of shape.
 (B) It can live in hot spring, deep ocean, snow and desert areas.
 (C) It can live as a parasite.
 (D) It is composed of simple behaviour and complex structure.
 (a) (A) and (B) only (b) (A) and (D) only
 (c) (B) and (C) only (d) (C) and (D) only
18. Most extensive metabolic diversity is found in
 (a) Protozoans (b) Amphibian (c) Bacteria (d) Fungi
19. Most of the bacteria are
 (a) Chemo-autotrophs (b) Photo-autotrophs (c) Heterotroph (d) Holozoic
20. Match the column:
- | Column I | Column II |
|-------------------|---------------------|
| A. Salty area | 1. Thermoacidophile |
| B. Hot spring | 2. Methanogen |
| C. Marshy area | 3. Halophiles |
| (a) A-3, B-1, C-2 | (b) A-1, B-2, C-3 |
| (c) A-2, B-1, C-3 | (d) A-2, B-3, C-1 |
21. Archaeobacteria can live in some of the most harsh habitats because of
 (a) Presence of mesosome (b) High power of multiplication
 (c) Special cell wall structure (d) All of these

22. Following are present in gut of cows and buffaloes and is responsible for the production of methane from the dung of these animals
 (a) Methanogen (b) Thermoacidophiles
 (c) Halophils (d) All of these
23. Motile bacteria possess
 (a) Cilia (b) Flagella
 (c) Both (a) and (b) (d) None of these
24. Which of the following statements is true about cyanobacteria?
 (a) It is found in fresh water only.
 (b) It may be unicellular, colonial or filamentous.
 (c) They often form bloom in non-polluted fresh water bodies.
 (d) Colonies are not surrounded by gelatinous sheath.
25. Specialized cell of nostoc and anabaena fix nitrogen are known as
 (a) Cyst (b) Heterocyst
 (c) Oocytes (d) Cholecyst
26. Find out the total number of false statements:
 A. Cyanobacteria have chlorophyll 'a' like green plants.
 B. Bacteria which oxidizes various inorganic substance such as nitrates and ammonia and uses the released energy for ATP production are chemosynthesis autotrophic bacteria.
 C. Heterotrophic bacteria are less in abundance in nature.
 D. Majority of heterotrophic bacteria are decomposers.
 E. Chemosynthetic autotrophic bacteria play an important role in recycling of nutrients like nitrogen, phosphorus iron and sulphur.
 (a) 1 (b) 2 (c) 3 (d) 4
27. Heterotrophic bacteria helps in
 (a) Curding of milk (b) Production of antibiotic
 (c) Nitrogen fixation in leguminous plant (d) All of these
28. Select the total number of disease from the following caused by bacteria:
Mumps, Smallpox, Citrus canker, Cholera, Typhoid, Tetanus, Sleeping sickness, Malaria
 (a) 2 (b) 4 (c) 5 (d) 6
29. Which one is correct about reproduction in bacteria?
 (a) Mainly by binary fission
 (b) Spores are formed under unfavorable condition
 (c) Sexual reproduction by transfer of DNA from one to another
 (d) All of these
30. Following features belong to
 A. Complete lacking of cell wall
 B. Anaerobic
 C. Smallest living cell
 D. Many of them are pathogenic to plant and animals
 (a) Chrysophytes (b) Prions
 (c) Viroids (d) Mycoplasma

31. Which of the following is incorrect about protista?
(a) All are single cell eukaryotes
(b) Some have flagella or cilia
(c) Sexually reproduce by cell fusion and zygote formation
(d) Members of protista are primarily terrestrial
32. Kingdom protista include
(a) Chrysophyte (b) Dinoflagellate (c) Euglenoids (d) All of these
33. Which kingdom of Whittaker are not well-defined?
(a) Monera (b) Protista (c) Fungi (d) Animalia
34. Which of the following is correct about chrysophytes?
I. Found in fresh and marine water II. Microscopic plankton
III. Cell walls are embedded with CaCO_3 IV. Most of them are photosynthetic
(a) I and III only (b) I, III and IV only (c) I, II and IV only (d) I and IV only
35. Chief producers in ocean are
(a) Euglenoids (b) Dinoflagellate (c) BGA (d) Chrysophytes
36. Chrysophytes include
(a) Diatoms (b) Golden algae (c) Desmids (d) All of these
37. Diatomaceous earth is used in
(a) Polishing (b) Filtration of oils
(c) Filtration of syrups (d) All of these
38. In _____ cell wall forms two thin overlapping shells which fit together as in a soap box.
(a) Dinoflagellates (b) Diatoms (c) Euglenoids (d) None of these
39. Mostly marine, photosynthetic and biflagellate organisms are
(a) Diatoms (b) Desmids (c) Dinoflagellates (d) Euglenoids
40. The following features belong to
I. Appear yellow, green, brown, blue and red depending on the pigment in cell.
II. Stiff cellulose plate forms cell wall.
III. One longitudinal and one transverse flagella present.
IV. Photosynthetic
(a) Diatoms (b) Desmids (c) Dinoflagellates (d) Euglenoids
41. Red tide is because of
(a) Desmids (b) Gonyaulax (c) Euglena (d) Red algae
42. Which of the following is true about gonyaulax?
(a) Release toxin (b) Slow multiplication causing red tide
(c) Heterotrophic (d) All of these
43. Habitat of euglenoids is
(a) Fresh river water (b) Fresh stagnant water
(c) Marine water (d) All of these
44. Mode of nutrition in euglenoids is
(a) Autotrophic (b) Heterotrophic (c) Symbiotic (d) Mixotrophic

45. Characteristic feature of euglenoids are
 A. Presence of cell wall
 C. Photosynthetic in presence of sunlight
 (a) A and D only
 (c) B, C and D only
 B. Presence of two flagella
 D. Presence of pellicle on their cell
 (b) B and D only
 (d) All of these
46. Euglenoids have flexible body because of
 (a) Cellulosic wall
 (c) Lipoic wall
 (b) Protein rich pellicle
 (d) Pectinic wall
47. Pigments of euglenoids are identical to
 (a) Bacteria
 (b) Diatoms
 (c) Dinoflagellates
 (d) Higher plants
48. Euglena posses all except
 (a) Pellicle
 (c) Two unequal flagella
 (b) Two equal flagella
 (d) Mixotrophic nutrition
49. Character belongs to slime moulds
 A. Saprophytes
 B. Forms plasmodium under favourable condition
 C. Spores posses true walls
 D. Spores are dispersed by water
 E. Body moves along decaying twings and leaves engulfing organic matter.
 (a) All except E
 (b) All except D
 (c) All except C and E
 (d) All except B
50. Which protist are believed to be the relatives of animals?
 (a) Slime moulds
 (b) Dinoflagellates
 (c) Protozoans
 (d) Diatoms
51. Protozoans are
 A. Hetrotrops
 B. Parasites or predators
 C. Protist
 D. Belived to be primitive relative of animals
 (a) A and B only
 (b) B and C only
 (c) D and A only
 (d) All of these
52. Amoeboid protozoans
 (a) Live in fresh water, sea water or moist soil
 (b) Captures prey by putting pseudopodia
 (c) Marine forms have shells on their surface
 (d) All of the above
53. False feet is the characteristic of which protozoan?
 (a) Sporozoon
 (c) Flagellated protozoan
 (b) Ciliated protozoan
 (d) Amoeboid protozoans
54. Sleeping sickness is caused by
 (a) Plasmodium
 (b) Paramoecium
 (c) Trypanosoma
 (d) Entamoeba
55. The protist which possess flagella is
 (a) Paramoecium
 (b) Plasmodium
 (c) Trypanosoma
 (d) Entamoeba

56. Ciliated protozoan possess
 (a) Thousands of cilia (b) Gullet that opens outside to cell
 (c) Coordinated movement of rows of cilia (d) All of these
57. Sporozoans possess
 (a) Spore like stage in life cycle (b) They are infectious
 (c) They are motile (d) Both (a) and (b)
58. Select the correct statement from the following for kingdom fungi
 A. They are heterotrophic.
 B. They show less diversity in morphology and habitat.
 C. Yeast is an unicellular fungus.
 D. They prefer to grow in warm and humid places.
 (a) A and D only (b) C and D only (c) A, C and D only (d) A and B only
59. Which of the following are example of fungus?
 (a) Toadstool (b) Puccinia (c) Yeast (d) All of these
60. Which of the following pairs belongs to the same kingdom?
 (a) Mycoplasma and Euglena (b) Golden algae and Green algae
 (c) Toadstool and Albugo (d) Lichens and Alternaria
61. Refrigeration prevents food from spoilage by
 (a) Fungus (b) Bacteria (c) Both (d) None of these
62. Which is not a correct matching?
 (a) Rust → Puccinia (b) Yeast → Bread and beer
 (c) Chrysophyte → Diatomaceous earth (d) Penicillium → Red tide
63. The following features belong to
 A. Body consist of long, slender thread-like structures called hyphae.
 B. Cell wall consist of chitin.
 C. Cosmopolitan
 (a) Ciliated protozoans (b) Slime moulds
 (c) Fungi (d) Euglenoids
64. If hyphae are continuous tube filled with multinucleated cytoplasm it is known as
 (a) Septate hyphae (b) Coenocytic hyphae
 (c) Mycelium (d) None of these
65. Select the correct matching:
 A. Fungi depend on dead substrate – Saprophytic
 B. Fungi depend on living plants and animals – Parasite
 C. Fungi as symbiont with algae – Lichens
 D. Fungi as symbiont with root of higher plant – Mycorrhazia
 (a) A and B only (b) B and C only (c) C and D only (d) All of these
66. Vegetative reproduction in fungus takes place by
 (a) Fragmentation (b) Fission (c) Budding (d) All of these
67. Asexual reproduction in fungus occurs by spores known as
 (a) Conidia (b) Sporangiospores
 (c) Zoospores (d) Any of the above

68. Sexual reproduction in fungus is by
 (a) Oospores (b) Ascospores
 (c) Basidiospores (d) Any of the above
69. Sexual reproduction in fungus occurs in the following sequential event. Arrange them properly.
 A. Fusion of two nuclei called karyogamy.
 B. Fusion of protoplasm between two motile or non-motile gametes.
 C. Meiosis in zygote resulting in haploid spores.
 (a) $A \rightarrow B \rightarrow C$ (b) $B \rightarrow A \rightarrow C$ (c) $C \rightarrow B \rightarrow A$ (d) $C \rightarrow A \rightarrow B$
70. Dikaryon and dikaryophase is seen in the case of
 (a) Ascomycetes (b) Basidiomycetes
 (c) Phycomycetes (d) Both (a) and (b)
71. The kingdom fungi is divided into various classes on the basis of
 (a) Morphology of mycelium (b) Mode of spore formation
 (c) Type of fruiting bodies (d) All of these
72. During sexual reproduction in fungus
 (a) Hyphae of same class come together and fuse.
 (b) Hyphae of same genus come together and fuse.
 (c) Hyphae of closely related species come together and fuse.
 (d) Hyphae of compatible mating type come together and fuse.
73. Habitats of phycomycetes are
 (a) Aquatic (b) Decaying wood in moist and damp place
 (c) Obligate parasite in plant (d) All of these
74. Endogenously produced spores are found in all except
 (a) Mushroom (b) Mucor
 (c) Albugo (d) Rhizopus
75. The following features belong to class
 A. Asexual reproduction by zoospores or aplanospores.
 B. Fusion of gametes may be isogamous, anisogamous or oogamous.
 C. Mycelium is aseptate and coenocytic.
 D. Spores are endogenously produced in sporangium.
 (a) Ascomycetes (b) Deuteromycetes
 (c) Phycomycetes (d) Basidiomycetes
76. The following fungus belongs to class ascomycetes (count the total number).
Rhizopus, Penicillium, Yeast, Mucor, Agaricus, Puccinia, Albugo, Claviceps, Neurospora, Alternaria, Trichoderma, Aspergillus, Ustilago, Morels, Buffles, Colletotrichum, Toadstool
 (a) 5 (b) 7 (c) 9 (d) 10
77. Ascomycetes are mostly
 (a) Acellular (b) Unicellular (c) Multicellular (d) All of these
78. Unicellular ascomycetes is
 (a) Penicillium (b) Alternaria
 (c) Saccharomyces (yeast) (d) Agaricus

79. The following features belongs to class
A. Mycelium branched and septate.
B. Asexual spores conidia produced exogenously.
C. Sexual spores produced endogenously.
D. Many members of this class are edible.
(a) Ascomycetes (b) Phycomycetes (c) Basidiomycetes (d) Deuteromycetes
80. Which of the following is extensively used in biochemical and genetic work?
(a) *Aspergillus* (b) *Claviceps* (c) *Neurospora* (d) *Penicillium*
81. The commonly known form of basidiomycetes are
(a) Mushrooms (b) Bracket fungi (c) puffballs (d) all
82. The following characteristics are of which of the given fungi?
A. Mycelium branched and septate.
B. Asexual spores are generally not found.
C. Vegetative reproduction by fragmentation is common.
D. Sex organs are absent but plasmogamy is by fusion of two somatic cells of different strains or genotype.
(a) Phycomycetes (b) Basidiomycetes (c) Deuteromycetes (d) Ascomycetes
83. Karyogamy and meiosis occurs in basidium produces _____ basidiospores.
(a) 1 (b) 2 (c) 3 (d) 4
84. Basidiospores are produced on basidium
(a) Endogenously (b) Exogenously (c) Both (a) and (b) (d) None of these
85. Find out the correct matching:
(a) *Ustilago*–Smut (b) *Puccinia*–Rust
(c) *Agaricus*–Mushroom (d) All are correct
86. Which of the following fungi only reproduce by asexual spores conidia?
(a) *Alternaria* (b) *Colletotrichum* (c) *Trichoderma* (d) All of these
87. Deuteromycetes are known as imperfect fungi because
(a) Only sexual phase is found.
(b) Only asexual or vegetative phase are known.
(c) Both asexual and sexual phase are known.
(d) Reproduction in these fungi is absent.
88. Many members of _____ class are decomposers of litter and help in mineral cycling.
(a) Ascomycetes (b) Deuteromycetes
(c) basidiomycetes (d) phycomycetes
89. The following features belongs to
A. Mycelium septate and branched.
B. Some members are saprophytes or parasites.
C. Reproduce only by conidia.
(a) Ascomycetes (b) Deuteromycetes (c) Basidiomycetes (d) Phycomycetes
90. Which of the following are examples of insectivorous plants?
(a) Bladderwort (b) Venus fly trap (c) *Cuscuta* (d) Both (a) and (b)

91. Kingdom plantae include
 (a) Algae and bryophytes (b) Pteridophytes and gymnosperms
 (c) Angiosperms (d) All of these
92. Plant cells have all except
 (a) Chloroplast (b) Cellulosic cell wall
 (c) Large vacuole (d) Centriole
93. Alternation of generation is seen in all except
 (a) Fucus (b) Sphagnum (c) Equisetum (d) Alternaria
94. Life cycle in plant has generally two distinct phase the _____ sporophytic and the _____ gametophytic that alternate with each other. This phenomenon is called as alternation of generation.
 (a) diploid, diploid (b) diploid, haploid
 (c) haploid, diploid (d) haploid, haploid
95. Select from the following the total number of features belonging to animal kingdom.
 1. Multicellular, heterotrophic. 7. Higher forms shows sensory and neuromotor mechanism.
 2. Most of them capable of locomotion. 8. Some members are autotrophic.
 3. Have definite shape and size. 9. Presence of cellulose cell wall.
 4. Digestion of food in internal cavity. 10. Sexual reproduction generally by copulation of male and female.
 5. Holozoic mode of nutrition.
 6. Stored food reserve as glycogen or fat.
 (a) 6 (b) 7 (c) 8 (d) 10

Viruses, Viroids and Lichens

96. In five kingdom classification of Whittaker, some acellular organisms are not included, they are
 (a) Virus (b) Viroids (c) Lichens (d) Both (a) and (b)
97. Virus is
 (a) Completely non-living
 (b) Inert crystalline structure outside the living cell
 (c) Cellular organism
 (d) One of Whittaker's classification
98. 'Virus', the name means
 (a) Venom or poisonous fluid
 (b) Acellular form
 (c) Non-cellular form
 (d) The connecting link between living and non-living
99. 'Virus', the name was given by
 (a) Ivanowsky (b) Pasteur (c) Whittaker (d) Beijerinck
100. *Contagium vivum fluidum* (infectious living fluid) name given to fluid extract from infected tobacco plant was given by
 (a) Ivanowsky (b) Pasteur (c) Whittaker (d) Beijerinck
101. Viruses are
 (a) Inert outside their specific host cell (b) Obligate parasite
 (c) Passes through bacteria proof filter (d) All above statements are correct

102. Who showed that virus can be crystallized out?
(a) Ivanowsky (b) Beijerinck
(c) Stanley (d) Pasteur
103. Virus contains
(a) Protein (b) DNA
(d) RNA (d) (a) and either (b) or (c)
104. Virus infected plants generally have
(a) Single stranded DNA (b) Double stranded DNA
(c) Double stranded RNA (d) Single stranded RNA
105. Viruses which infect animals have
(a) Single stranded RNA (b) Double stranded RNA
(c) Double stranded DNA (d) Any of the above
106. Bacteriophage generally have
(a) Single stranded RNA (b) Double stranded RNA
(c) Double stranded DNA (d) Any of the above
107. Capsomeres may be arranged in
(a) Helical (b) Polyhedral (c) Ellipsoid (d) Either (a) or (b)
108. In virus infected plants the following symptoms can be observed
(a) Mosaic formation and stunted growth (b) Leaf rolling and curling
(c) Yellowing and vein clearing (d) All of these
109. Select the total number of diseases from the following which can be caused by virus in plant or animals.
Mumps, Small pox, Rust, Smut, Herpes, Influenza, Potato spindle tuber, Red rot of sugar cane, Turnip mosaic, Black rot crucifier
(a) 4 (b) 5 (c) 7 (d) 8
110. Potato spindle tuber disease is caused by
(a) Virus (b) Viroids (c) Lichens (d) Fungi
111. 'Viroids' is discovered by
(a) Ivanowsky (b) T. O. Diener (c) Beijerinck (d) Stanley
112. Viroids are
(a) Free protein (b) Free RNA (c) Free DNA (d) Free saccharides
113. The molecular weight of RNA of viroid is
(a) High (b) Low
(c) Very high (d) Any of the above
114. Lichens are symbiotic association between
(a) Algae and bacteria (b) Bacteria and fungus
(c) Algae and fungus (d) Fungus and root of higher plant
115. In lichen, the algal component is called _____ and fungal component is called _____.
(a) mycobiont, phycobiont (b) phycobiont, mycobiont
(c) phycobiont, mycorrhazia (d) mycorrhazia, mycobiont

116. Which one of the following is heterotrophic in lichen?

- (a) Fungus (b) Algae (c) Both (a) and (b) (d) None

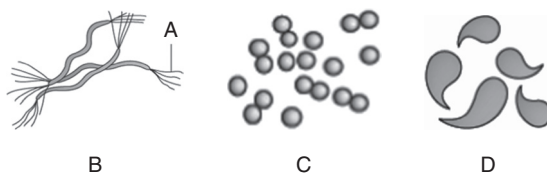
117. Lichens are

- (a) Pollution indicators
(b) Symbiotic association between algae and fungus
(c) Pioneer species in primary succession on rocks
(d) All of the above

118. Which of the following is incorrect about lichens?

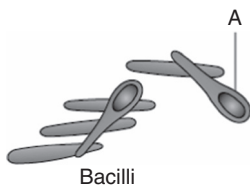
- (a) Algae part is autotrophic (b) Fungus part absorb nutrient and minerals
(c) Fungus provide shelter to algae (d) Algae provide shelter to fungus

119. Identify the A, B, C and D in this figure.



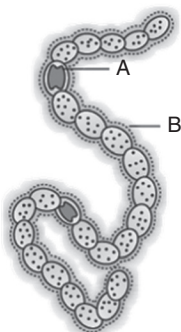
- (a) A–Spirilla, B–Vibrio, C–Flagellum, D–Cocci
(b) A–Cocci, B–Flagellum, C–Spirilla, D–Vibrio
(c) A–Vibrio, B–Spirilla, C–Cocci, D–Flagellum
(d) A–Flagellum, B–Spirilla, C–Cocci, D–Vibrio

120. Identify around structure 'A' in this diagram



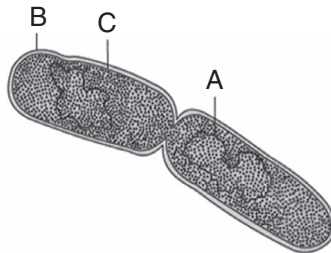
- (a) dsDNA (b) Plasmid (c) Spore (d) Cosmid

121. What indicates A in this figure?



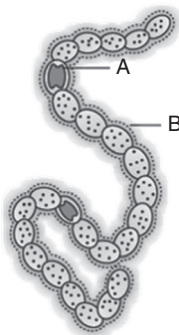
- (a) Heterocyst (b) Mucilaginous sheath
(c) Cyanobacteria (d) ATP

122. Identify the A, B and C shown in this figure?



- (a) A–Cell wall, B–DNA, C–Cell membrane
- (b) A–DNA, B–Cell membrane, C–Cell wall
- (c) A–Cell membrane, B–DNA, C–Cell wall
- (d) A–DNA, B–Cell wall, C–Cell membrane

123. Identify the organism given in this diagram and its feature.



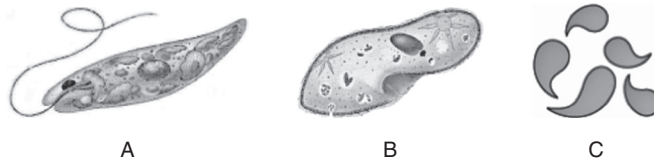
- (a) Vibrio–Comma shape bacteria which causes cholera
- (b) Fungi–Body organization is loose tissue level
- (c) Blue green algae–Filamentous structure, helps in nitrogen fixation
- (d) Algae–Heterotrophic structure feeds on Nostoc

124. Select the incorrect statement about the organism given in this diagram.



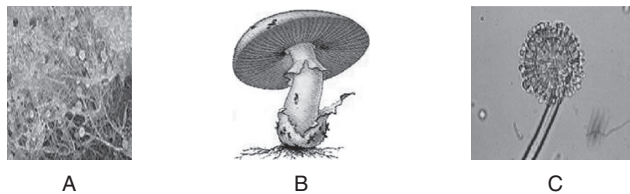
- (a) Autotrophic in sunlight
- (b) Heterotrophic in deprived sunlight
- (c) Biflagellate
- (d) They are surrounded by protein rich layer known as cell wall

125. Identify A, B, C in this diagram.



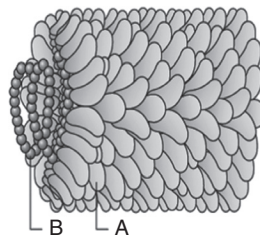
- (a) A–Euglena, B–Paramecium, C–Vibrio
- (b) A–Paramecium, B–Vibrio, C–Euglena
- (c) A–Flagella, B–Paramecium, C–Vibrio
- (d) A–Paramecium, B–Slipper animalcule, C–Vibrio

126. Identify the A, B and C in this figure.



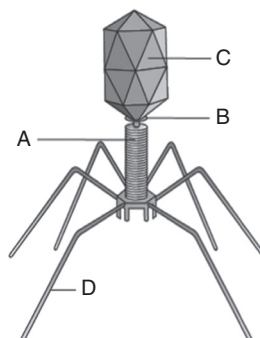
- (a) A–Agaricus, B–Mucor, C–Aspergillus
- (b) A–Mucor, B–Agaricus, C–Aspergillus
- (c) A–Aspergillus, B–Mucor, C–Agaricus
- (d) A–Agaricus, B–Aspergillus, D–Mucor

127. Identify the A and B shown in this figure.



- (a) A–DNA, B–Capsid
- (b) A–RNA, B–DNA
- (c) A–Capsid, B–RNA
- (d) A–RNA, B–Capsid

128. What is indicating A to D in this figure.



- (a) A–Collar, B–Tail Fibres, C–Head, D–Sheath
- (b) A–Sheath, B–Collar, C–Head, D–Tail fibres
- (c) A–Tail fibres, B–Sheath, C–Collar, D–Head
- (d) A–Tail fibres, B–Collar, C–Head, D–Sheath

ASSERTION AND REASON QUESTIONS

Read the assertion and reason carefully to mark the correct option out of the options given below:

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

129. **Assertion:** Chemotaxonomy is classifying organisms at molecular level.
Reason: Cytotaxonomy is classifying organisms at cellular level.
130. **Assertion:** Bacteria are prokaryotic.
Reason: Bacteria do not possess true nucleus and membrane bound cell organelles.
131. **Assertion:** Bacteria are grouped under four categories based on their shapes.
Reason: Cocci and Bacilli may form clusters or chain of a definite length.
132. **Assertion:** Mycoplasma can survive without oxygen.
Reason: They have no cell wall.
133. **Assertion:** Bacterial cell wall are not like the plant cell.
Reason: Bacterial cell wall is made up of cellulose.
134. **Assertion:** Bacteria do not always move with the help of flagella.
Reason: Flagellated bacteria employs rotary motion of flagellum when it moves.
135. **Assertion:** Amoeba contains a contractile vacuole.
Reason: It helps in both digestion and osmoregulation.
136. **Assertion:** Whittaker proposed a five kingdom classification.
Reason: The main criteria were cell structure, body organization, mode of nutrition, reproduction and phylogenetic relationship.
137. **Assertion:** Paramecium is aquatic, actively moving organism.
Reason: Paramecium contains two nucleus.
138. **Assertion:** Fresh water protozoan possess contractile vacuoles.
Reason: The main function of the vacuole is contraction during digestion.
139. **Assertion:** Sexual reproduction in protozoan is not a frequent occurrence.
Reason: Sexual reproduction has no significance.
140. **Assertion:** Bacteria are the most abundant micro-organism.
Reason: Bacteria show most extensive metabolic diversity.

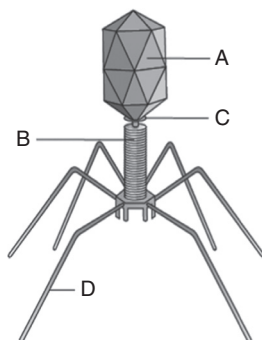
- 141. Assertion:** Euglenoids have flexible body.
Reason: Euglenoids are covered by protein rich layer called pellicle
- 142. Assertion:** Slime moulds are saprophytic protists.
Reason: Slime moulds derive their nutrition mainly from decaying organic matter.
- 143. Assertion:** Slime moulds are called protistan fungi.
Reason: A Slime mould resembles both protozoa and true fungi.
- 144. Assertion:** Cell walls of diatoms are indestructible.
Reason: Cell walls of diatoms embedded with silica.
- 145. Assertion:** Mycoplasma is pleomorphic (means can change their shape).
Reason: Cell wall is absent in Mycoplasma.
- 146. Assertion:** Euglenoids shows mixotrophic nutrition.
Reason: Euglenoids are autotrophic in sunlight and heterotrophic in absence of sunlight.
- 147. Assertion:** Neurospora is used extensively in genetic work.
Reason: Neurospora belongs to Ascomycetes.
- 148. Assertion:** Bladderwort and Venus fly trap are parasite
Reason: Cuscuta is insectivorous plant.
- 149. Assertion:** Lichens are very good pollution indicators.
Reason: Lichens do not grow in polluted areas.
- 150. Assertion:** Virus is obligate parasite
Reason: Virus can't multiply without host cell.
- 151. Assertion:** Aristotle used simple morphological characters to classify plants into trees, shrubs and herbs.
Reason: Aristotle divides animals in two groups on the basis of presence or absence of red blood.
- 152. Assertion:** Fungi are no more considered as plant.
Reason: Fungi posses heterotrophic nutrition and their cell wall consist of chitin mainly.
- 153. Assertion:** Kingdom Protista brought together chlorella and paramecium, which in earlier classification were placed in different kingdom.
Reason: Criteria for different classification are different in many aspects.
- 154. Assertion:** Bacteria are the most abundant micro-organisms
Reason: Bacteria only shows autotrophic mode of nutrition.
- 155. Assertion:** Bacteria have simple structure.
Reason: Bacteria show most extensive metabolic diversity.
- 156. Assertion:** Archaeobacteria is most resistant to adverse environmental conditions.
Reason: Archaeobacteria has complex cell wall structure.
- 157. Assertion:** Methane is produced from the dung of ruminating animals.
Reason: Methanogens present in gut of many ruminant animals.
- 158. Assertion:** Chemosynthetic autotrophic bacteria are useful for ecosystem.
Reason: They play great role in recycling nutrients like nitrogen, phosphorus, iron and sulphur.

- 159. Assertion:** Bacteria reproduce mainly by binary fission.
Reason: Under unfavourable condition they produce spores.
- 160. Assertion:** All single celled eukaryotes reproduce by asexual means only placed under kingdom Protista.
Reason: Protistan cell contain well defined nucleus but not membrane bound cell organelles.
- 161. Assertion:** Classification system has undergone several changes over a period of time.
Reason: This is because the criteria for classification gradually get changed.
- 162. Assertion:** Deuteromycetes are referred as imperfect fungi
Reason: Sexual stage is not known in these fungi.

PREVIOUS YEAR QUESTIONS

1. Given below is the diagram of a bacteriophage. In which one of the options all four parts A, B, C and D are correct?

[AIPMT MAINS 2010]



- (a) A: Tail fibres, B: Head, C: Sheath, D: Collar
 (b) A: Sheath, B: Collar, C: Head, D: Tail fibres
 (c) A: Head, B: Sheath, C: Collar, D: Tail fibres
 (d) A: Collar, B: Tail fibres, C: Head, D: Sheath
2. Select the correct combination of the statements (A-D) regarding the characteristics of certain organisms

[AIPMT MAINS 2010]

- (A) Methanogens are archaeobacteria which produce methane in marshy areas.
 (B) Nostoc is a filamentous blue-green algae which fixes atmospheric nitrogen.
 (C) Chemosynthetic autotrophic bacteria synthesize cellulose from glucose.
 (D) Mycoplasma lack a cell wall and can survive without oxygen.

The correct statements are:

- (a) (B) and (C) (b) (A), (B) and (C)
 (c) (B), (C) and (D) (d) (A), (B) and (D)
3. Some hyperthermophilic organisms that grow in highly acidic (pH = 2) habitats belong to the two groups called

[AIPMT PRE 2010]

- (a) Eubacteria and archaea
(c) Protists and mosses
- (b) Cyanobacteria and diatoms
(d) Liverworts and yeasts
4. Single-celled eukaryotes are included in [AIPMT PRE 2010]
(a) Protista
(c) Archaea
(b) Fungi
(d) Monera
5. The virus envelope is known as [AIPMT PRE 2010]
(a) Capsid
(c) Nucleoprotein
(b) Virion
(d) Core
6. Infectious proteins are present in [AIPMT PRE 2010]
(a) Gemini viruses
(c) Viroids
(b) Prions
(d) Satellite viruses
7. Organisms called methanogens are most abundant in a [AIPMT PRE 2011]
(a) Cattle yard
(c) Hot spring
(b) Polluted stream
(d) Sulphur rock
8. How many organisms in the list given below are autotrophs?
Lactobacillus, Nostoc, Chara, Nitrosomonas, Nitrobacter, Streptomyces, Saccharomyces, Trypanosoma, Porphyra, Wolffia [AIPMT MAINS 2012]
(a) Five
(c) Three
(b) Six
(d) Four
9. The most abundant prokaryotes helpful to humans in making curd from milk and in production of antibiotics are the ones categorized as: [AIPMT PRE 2012]
(a) Cyanobacteria
(b) Archaeobacteria
(c) Chemosynthetic autotrophs
(d) Heterotrophic bacteria
10. The cyanobacteria are also referred to as: [AIPMT PRE 2012]
(a) Protists
(c) Slime moulds
(b) Golden algae
(d) Blue-green algae
11. Which statement is wrong for viruses? [AIPMT PRE 2012]
(a) All are parasites.
(b) All of them have helical symmetry.
(c) They have the ability to synthesize nucleic acids and proteins.
(d) Antibiotics have no effect on them.

12. Which one single organism or the pair of organisms is correctly assigned to its or their named taxonomic group? [AIPMT PRE 2012]
- (a) Paramoecium and plasmodium belong to the same kingdom as that of penicillium.
 - (b) Lichen is a composite organism formed from the symbiotic association of an algae and a protozoan.
 - (c) Yeast used in making bread and beer is a fungus.
 - (d) Nostoc and Anabaena are examples of protista.
13. Maximum nutritional diversity is found in the group [AIPMT PRE 2012]
- (a) Fungi
 - (b) Animalia
 - (c) Monera
 - (d) Plantae
14. Pigment containing membranous extensions in some cyanobacteria are [AIPMT PRE 2013]
- (a) Heterocysts
 - (b) Basal bodies
 - (c) Pneumatophores
 - (d) Chromatophores
15. The five kingdom system of classification suggested by R. H. Whittaker is not based on [AIPMT PRE 2014]
- (a) Presence or absence of a well defined nucleus
 - (b) Mode of reproduction
 - (c) Mode of nutrition
 - (d) Complexity of body organization
16. Which one of the following fungi contains hallucinogens? [AIPMT PRE 2014]
- (a) Morchella esculenta
 - (b) Amanita muscaria
 - (c) Neurospora sp.
 - (d) Ustilago sp.
17. Archaeobacteria differ from eubacteria in [AIPMT PRE 2014]
- (a) Cell membrane structure
 - (b) Mode of nutrition
 - (c) Cell shape
 - (d) Mode of reproduction
18. Anoxygenic photosynthesis is the characteristic of [AIPMT PRE 2014]
- (a) Rhodospirillum
 - (b) Spirogyra
 - (c) Chlamydomonas
 - (d) Ulva
19. Which of the following shows coiled RNA strand and capsomeres? [AIPMT PRE 2014]
- (a) Polio virus
 - (b) Tobacco mosaic virus
 - (c) Measles virus
 - (d) Retrovirus
20. Viruses have [AIPMT PRE 2014]
- (a) DNA enclosed in a protein coat
 - (b) Prokaryotic nucleus
 - (c) Single chromosome
 - (d) Both DNA and RNA

21. A location with luxuriant growth of lichen on the trees indicated that the [AIPMT PRE 2014]
 (a) Trees are very healthy (b) Trees are heavily infested
 (c) Location is highly polluted (d) Location is not polluted
22. Which of the following matches is correct? [AIPMT 2015]
 (a) Phytophthora → Aseptate mycelium → Basidiomycetes
 (b) Alternaria → Sexual reproduction absent → Deuteromycetes
 (c) Mucor → Reproduction by conjugation → Ascomycetes
 (d) Agaricus → Parasitic fungus → Basidiomycetes
23. The guts of cow and buffalo posses [AIPMT 2015]
 (a) Fucus spp (b) Chlorella spp
 (c) Methanogens (d) Cyanobacteria
24. The imperfect fungi which are decomposers of litter and help in mineral cycling belong to [RE-AIPMT 2015]
 (a) Basidiomycetes (b) Phycomycetes
 (c) Ascomycetes (d) Deuteromycetes
25. Pick up the wrong statement: [RE-AIPMT 2015]
 (a) Protista have photosynthetic and heterotrophic modes of nutrition.
 (b) Some fungi are edible.
 (c) Nuclear membrane is present in Monera.
 (d) Cell wall is absent in Animalia.
26. Chromatophores take part in [RE-AIPMT 2015]
 (a) Growth (b) Movement
 (c) Respiration (d) Photosynthesis
27. Which of the following disease is caused by a protozoan? [RE-AIPMT 2015]
 (a) Influenza (b) Babesiosis
 (c) Blastomycosis (d) Syphilis
28. Select the wrong statement [RE-AIPMT 2015]
 (a) W.M. Stanley showed that viruses could be crystallized
 (b) The term 'contagium vivum fluidum' was coined by M.W. Beijerinck
 (c) Mosaic disease in tobacco and AIDS in human being are caused by viruses
 (d) The viroids were discovered by D.J. Ivanowsky
29. Cell wall is absent in [RE-AIPMT 2015]
 (a) Funaria (b) Mycoplasma
 (c) Nostoc (d) Aspergillus
30. In which group of organisms the cell walls from two thin overlapping shells which fit together? [RE-AIPMT 2015]

- (a) Euglenoids
- (b) Dinoflagellates
- (c) Slime moulds
- (d) Chrysophytes

31. Choose the wrong statement:

[RE-AIPMT 2015]

- (a) Neurospora is used in the study of biochemical genetics
- (b) Morels and Buffles are poisonous mushrooms
- (c) Yeast is unicellular and useful in fermentation
- (d) Penicillium is multicellular and produces antibiotics

32. Which of the following statements is wrong for viroids?

[NEET - I, 2016]

- (a) They lack a protein coat
- (b) They cause infections
- (c) They are smaller than viruses
- (d) Their RNA is of high molecular weight

33. Which of the following statements is wrong?

[NEET - I, 2016]

- (a) Cyanobacteria are also called blue-green algae.
- (b) Golden algae are also called desmids.
- (c) Eubacteria are also called false bacteria.
- (d) Phycomycetes are also called algal fungi.

34. Which of the following would appear as the pioneer organisms on bare rocks?

[NEET - I, 2016]

- (a) Lichens
- (b) Mosses
- (c) Liverworts
- (d) Green algae

35. Chrysophytes, Euglenoids, Dinoflagellates and Slime moulds are included in the kingdom:

[NEET - I, 2016]

- (a) Monera
- (b) Protista
- (c) Fungi
- (d) Animalia

36. The primitive prokaryotes responsible for the production of biogas from the dung of ruminant animals, include the:

[NEET - I, 2016]

- (a) Halophiles
- (b) Thermoacidophiles
- (c) Methanogens
- (d) Eubacteria

37. Which one of the following is wrong for fungi?

[NEET - II, 2016]

- (a) All fungi possess a purely cellulosic cell wall
- (b) They are heterotrophic
- (c) They are both unicellular and multicellular
- (d) They are eukaryotic

38. Methanogens belong to

[NEET - II, 2016]

- (a) *Archaeobacteria*
- (b) *Dinoflagellates*
- (c) *Slime moulds*
- (d) *Eubacteria*

39. Select the wrong statement:

[NEET - II, 2016]

- (a) 'Diatomaceous earth' is formed by the cell walls of diatoms
- (b) Diatoms are chief producers in the oceans
- (c) Diatoms are chief microscopic and float passively in water
- (d) The walls of diatoms are easily destructible

NCERT EXEMPLAR QUESTIONS

1. All eukaryotic unicellular organisms belong to
 - (a) Monera
 - (b) Protista
 - (c) Fungi
 - (d) Bacteria
2. The five kingdom classification was proposed by
 - (a) R.H. Whittaker
 - (b) C. Linnaeus
 - (c) A. Roxberg
 - (d) Virchow
3. Organisms living in salty areas are called as
 - (a) Methanogens
 - (b) Halophiles
 - (c) Heliophytes
 - (d) Thermoacidophiles
4. Naked cytoplasm, multinucleated and saprophytic specifications are the characteristics of
 - (a) Monera
 - (b) Protista
 - (c) Fungi
 - (d) Slime moulds
5. An association between roots of higher plants and fungi is called
 - (a) Lichen
 - (b) Fern
 - (c) Mycorrhiza
 - (d) BGA
6. A dikaryon is formed when
 - (a) Meiosis is formed
 - (b) The two haploid cells do not fuse completely
 - (c) Cytoplasm does not fuse
 - (d) None of the above
7. *Contagium vivum fluidum* was proposed by
 - (a) D. J. Ivanovsky
 - (b) M. W. Beijerinck
 - (b) Stanley
 - (d) Robert Hook
8. The association between mycobiont and phycobiont is found in
 - (a) Mycorrhiza
 - (b) Root
 - (c) Lichens
 - (d) BGA
9. Difference between a Virus and a Viroid is
 - (a) Absence of protein coat in viroid but present in virus.
 - (b) Presence of low molecular weight RNA in virus but absent in viroid.
 - (c) Both a and b
 - (d) None of the above
10. With respect to fungal sexual cycle, choose the correct sequence of events.
 - (a) Karyogamy, Plasmogamy and Meiosis
 - (b) Meiosis, Plasmogamy and Karyogamy
 - (c) Plasmogamy, Karyogamy and Meiosis
 - (d) Meiosis, Karyogamy and Plasmogamy
11. Viruses are non-cellular organisms but replicate themselves once they infect the host cell. To which of the following kingdom do viruses belong to?
 - (a) Monera
 - (b) Protista
 - (c) Fungi
 - (d) None of the above

- i. Aquatic habitats
- ii. On decaying wood
- iii. Moist and damp places
- iv. As obligate parasites on plants

(b) i and iv

- (d) All the above

Practice Questions

- ### Assertion and Reason Questions

- ### Previous Year Questions

- ### NCERT Exemplar Questions

1. (b) 2. (a) 3. (b) 4. (d) 5. (c) 6. (b) 7. (b) 8. (c) 9. (a) 10. (c)
11. (d) 12. (d)