CBSE

BIOLOGICAL CLASSIFICATION WS 1

Class 11 - Biology

Section A

1. Who was the first scientist to classify living beings? **[1]**

   a) Aristotle
   b) Whittaker
   c) Robert Hook
   d) Linnaeus

2. Naked cytoplasm, multinucleated and saprophytic are the characteristics of **[1]**

   a) Fungi
   b) Monera
   c) Slime molds
   d) Protista

3. Which is the most acceptable system of biological classification? **[1]**

   a) Three kingdom classification
   b) Six kingdom classification
   c) Five kingdom classification
   d) Two kingdom classification

4. All prokaryotic, unicellular organisms are included under the kingdom: **[1]**

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

5. A distinction between unicellular and multicellular is not possible in_____. **[1]**

   a) Animalia
   b) Protozoa
   c) Plantae
   d) Algae

6. The blue-green algae are also referred to as_____. **[1]**

   a) Archaebacteria
   b) Eubacteria
   c) Cyanobacteria
   d) Heterotrophic bacteria

7. The five kingdom classification was proposed by **[1]**

   a) Whittaker
   b) Engler and Prantl
   c) Bentham and Hooker
   d) Hutchinson

8. The three domains system do not include: **[1]**

   a) Eukara Domain
   b) Archaea Domain
   c) Bacteria Domain
   d) Viral Domain

9. **Assertion (A):** Earlier classification systems included bacteria, blue-green algae, fungi, mosses, ferns, gymnosperms and the angiosperms under "Plants’. **[1]**
   Reason (R): The character that unified this whole kingdom was that all the organisms included had a cell wall in their cells.

   a) Both A and R are true and R is the correct
   b) Both A and R are true but R is not the

explanation of A. correct explanation of A.

c) A is true but R is false. d) A is false but R is true.

10. In which group all prokaryotes were kept in five kingdom system? **[1]**
11. In the five-kingdom system of Whittaker, how many kingdoms are for eukaryotes? **[1]**
12. Who proposed the two kingdom classification? **[1]**
13. Why did two kingdom classification continue to be used for a long time? **[1]**
14. As per the three domain system of classification, human can be kept under which domain. **[1]**
15. What is the principle underlying the use of cyanobacteria in agricultural fields for crop improvement? **[1]**
16. What is the mode of nutrition in fungi? **[1]**
17. Blue green algae belongs to which kingdom as per five kingdom classification? **[1]**
18. Polluted water bodies have usually very high abundance of plants like Nostoc and Oscillatoria. Give reasons. **[1]**

Section B

19. What do you understand by three domains of life? **[2]**
20. What is the difference between prokaryotes and eukaryotes? **[2]**
21. What is the difference between bacteria and protozoa? **[2]**
22. What are the main criteria used for the five kingdom system of classification? **[2]**
23. The common name of pea is simpler than its botanical (scientific) name *Pisum sativum*. Why then is the simpler common name not used instead of the complex scientific/ botanical name in biology? **[2]**
24. Write five beneficial usage or effects of bacteria. **[2]**
25. Draw a labelled diagram of bacterial cell. **[2]**
26. What are mesosomes and what its use in a bacterial cell? **[2]**
27. What is the role of methanogens? **[2]**
28. When did cyanobacteria evolve? Why are they referred to the earliest colonizers of barren areas? **[2]**

Section C

29. List out the differences between Monera and Protista. **[3]**
30. Cyanobacteria and heterotrophic bacteria have been clubbed together in Eubacteria of Kingdom-Monera as per the five kingdom classification even though the two are vastly different from each other. Is this grouping of the two types of taxa in the same kingdom justified? If so, why? **[3]**
31. What are the inadequacies of two kingdom system of classification? **[3]**
32. Discuss how classification systems have undergone several changes over a period of time? **[3]**
33. Why was Linnaeus' system of classification considered as artificial system? **[3]**
34. Justify at what extent the phylogenetic relationship is useful as a criterion for classification. **[3]**
35. What are the benefits of a five kingdom classification over a two kingdom classification? **[3]**
36. What is the three domain system? Who introduced it? Name these domains and their salient features. **[3]**
37. Differentiate between Artificial and Natural system of classification. **[3]**
38. The two kingdom classification system placed bacteria, algae, blue-green algae, fungi, mosses, ferns, gymnosperm, and angiosperms, together under one single kingdoms-Plantae. According to you, what could have been the basis of such classification? **[3]**
39. What do you know about 2-kingdom classification? **[3]**
40. How was three kingdom system different than four kingdom system? **[3]**
41. What is the need of classification? **[3]**
42. Explain 3 kingdom classification in system. **[3]**

43. What is the need of a classification system in biology? How did different classification systems develop over a period of time? **[3]**

44. Differentiate between pili and fimbriae. **[3]**

45. State two economically important uses of: **[3]**

    a. heterotrophic bacteria

    b. archaebacteria

46. List the important characteristics of kingdom Monera. **[3]**

47. List out the important characteristics of bacteria. **[3]**

48. In which organisms heterocyst is present? Mention two features of heterocysts. Which features make it suitable for nitrogen-fixation? **[3]**

49. Make a comparative chart of bacteria and algae. **[3]**

50. Write a short note on Eubacteria. **[3]**

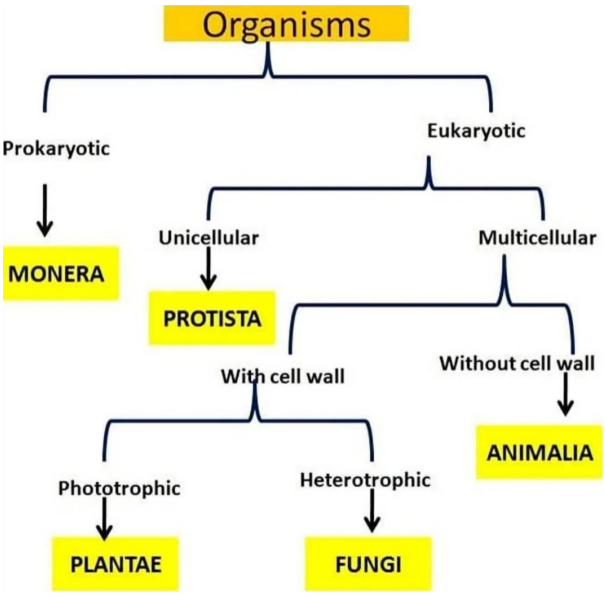
51. Differentiate between Autotrophic and Heterotrophic Bacteria. **[3]**

Section D

Question No. 52 to 55 are based on the given text. Read the text carefully and answer the questions: **[4]**

R.H. Whittaker proposed a Five Kingdom Classification. The kingdoms defined by him were named Monera, Protista, Fungi, Plantae, and Animalia. The main criteria for classification used by him include cell structure, body organisation, mode of nutrition, reproduction and phylogenetic relationships. The three-domain system has also been proposed that divides the Kingdom Monera into two domains, leaving the remaining eukaryotic kingdoms in the third domain and there by a six kingdom classification. Earlier classification systems included bacteria, blue-green algae, fungi, mosses, ferns, gymnosperms and the angiosperms under 'Plants'. The character that unified this whole kingdom was that all the organisms included had a cell wall in their cells.

Robert H. Whittaker (1969)



52. Observe Robert H. Whittaker (1969) flow chart of classification and mention what type of organisms were included in Kingdom Animalia?

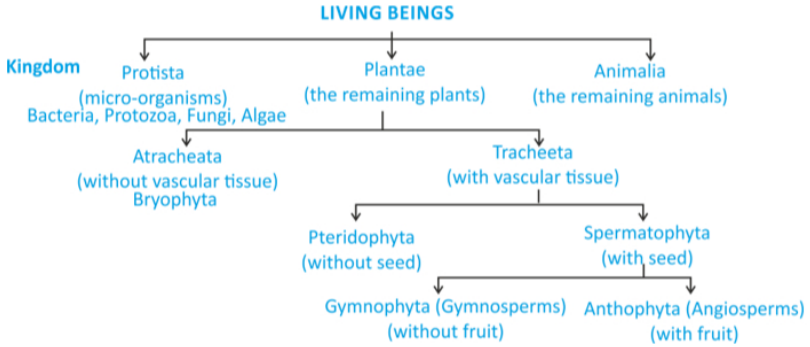
53. Mention two differences between prokaryotic and eukaryotic cells.

54. Linnaeus used which kingdom of classification? State two drawbacks of Linnaeus two kingdom classification.

55. Is Fungi- Autotrophic (Photosynthetic) and Heterotrophic the correct match? Also, Mention the difference between the walls of fungi and green plants.

Question No. 56 to 59 are based on the given text. Read the text carefully and answer the questions: **[4]**

Linnaeus gave two kingdom classification/which consists of kingdom Plantae and kingdom Animalia. This classification was based on the mode of nutrition/ reproduction/ presence or absence of cell wall. However, this system had many drawbacks like there was no distinction between eukaryotes and prokaryotes. Then, came the three-kingdom classification in which single-celled bacteria and protozoans were kept in the kingdom Protista. This system also failed to classify all living organisms into appropriate categories. Finally a five Kingdom classification was proposed by dividing all the organisms into five kingdom and it will be accepted as modern system of classification.



56. We know that Haeckel proposed the term Protista for unicellular organisms. Observe the given flowchart and mention what are advantages does the five-kingdom classification have over the two-kingdom classification?
57. All eukaryotic unicellular organisms belong to which kingdom? Also, mention its two characteristics.
58. What is heterotropic? Is Euglena heterotropic?
59. Who proposed the five-kingdom classification? And which criteria were used to classify organism in the 5-kingdom system?

Section E

Question No. 60 to 64 are based on the given text. Read the text carefully and answer the questions: **[5]**

Linnaeus gave two kingdom classification/which consists of kingdom Plantae and kingdom Animalia. This classification was based on the mode of nutrition/ reproduction/ presence or absence of cell wall. However, this system had many drawbacks like there was no distinction between eukaryotes and prokaryotes. Then, came the three kingdom classification in which single-celled bacteria and protozoans were kept in kingdom Protista. This system also failed to classify all living organisms into appropriate categories. Finally a five Kingdom classification was proposed by dividing all the organisms into five kingdom and it will be accepted as modern system of classification.

60. Biologist who proposed the term protista for unicellular organisms is:

a) Lister
b) Koch
c) Pasteur
d) Haeckel

61. All eukaryotic unicellular organisms belong to:

a) Monera
b) Fungi
c) Bacteria
d) Protista

62. Organisms having characteristic of both plants and animals is:

a) Paramoecium
b) Euglena
c) Mycoplasma
d) Bacterium

63. The five kingdom classification was proposed by:

a) C. Linnaeus
b) R. H. Whittaker
c) Virchow
d) A. Roxburg

64. **Assertion (A):** The five kingdom classification is based on the mode of nutrition of organisms.

Reason (R): The organisms are placed in different group based on the cellular organization.

a) Both A and R are true and R is the correct explanation of A.

b) Both A and R are true but R is not the correct explanation of A.

c) A is true but R is false.

d) A is false but R is true.

65. What were the shortcomings of the two kingdom system of classification? **[5]**

66. List out the merits of the five kingdom system of classification. **[5]**

67. Biological classification is a dynamic and ever-evolving phenomenon which keeps changing with our understanding of life forms. Justify the statement by taking any two examples. **[5]**

68. i. Why does the interior of the bacterial cell appear simple and granular? **[5]**

ii. Which components make a cell envelope of the bacterial cell?

iii. What gives gummy or sticky trait to bacterial cells and if it is not essential for survival, what are its functions?

69. Briefly describe the components of a typical bacterial cell. **[5]**

Section F

Question No. 70 to 75 are based on the given text. Read the text carefully and answer the questions: **[6]**

R.H. Whittaker proposed a Five Kingdom Classification. The kingdoms defined by him were named Monera, Protista, Fungi, Plantae, and Animalia. The main criteria for classification used by him include cell structure, body organisation, mode of nutrition, reproduction and phylogenetic relationships. The three-domain system has also been proposed that divides the Kingdom Monera into two domains, leaving the remaining eukaryotic kingdoms in the third domain and thereby a six kingdom classification. Earlier classification systems included bacteria, blue-green algae, fungi, mosses, ferns, gymnosperms and the angiosperms under 'Plants'. The character that unified this whole kingdom was that all the organisms included had a cell wall in their cells.

70. Another Name of Cyanobacteria

a) Golden algae

b) Protists

c) Slime moulds

d) Blue-green algae

71. Study the table given below and fill A, B and C

Characters	**kingdom**		
Cell type	Prokaryotic	Eukaryotic	C
Cell wall	Noncellulosic (Polysaccharide + amino acid)	Present in some	Present with chitin
Nuclear membrane	Absent	B	Present
A	Cellular	Cellular	Multiceullar/ loose tissue

a) A-Body organisation, B-Eukaryotic, C-Present

b) A-Present, B-Body organisation, C-Eukaryotic

c) A-Eukaryotic, B-Body organisation, C-Present

d) A-Body organisation, B-Present, C-Eukaryotic

72. Linnaeus used which kingdom of classification?

a) Natural system

b) Asexual system

c) Phylogenetic system
d) Artificial system

73. **Assertion (A):** The green plants had a cellulosic cell wall.
Reason (R): Kingdom Protista has brought together Chlamydomonas, Chlorella with Paramoecium and Amoeba.

a) Both A and R are true and R is the correct explanation of A.
b) Both A and R are true but R is not the correct explanation of A.
c) A is true but R is false.
d) A is false but R is true.

74. Which of the following is incorrect match?

a) Plantae- Autotrophic (Photosynthetic)
b) Animalia- Heterotrophic (Holozoic/ Saprophytic)
c) Fungi- Autotrophic (Photosynthetic) and Heterotrophic
d) Monera- Autotrophic (chemosynthetic and photosynthetic)

75. Which of the following statement is incorrect?

I. All prokaryotic organisms were grouped together under Kingdom Monera.
II. Chlorella is placed into the plant kingdom.
III. The unicellular eukaryotic organisms were placed in Kingdom Protista
IV. Paramoecium and Amoeba were earlier placed in the animal kingdom as they contain a cell wall.

a) II and I
b) IV and II
c) I and IV
d) II and I