

17. **Assertion (A):** Erythrocytic merozoites form gametocytes. [1]
Reason (R): Gametocytes are of two types - male and female.
- 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.
18. **Assertion (A):** Malarial fever appears at the merozoite stage of Plasmodium. [1]
Reason (R): The infective stage of Plasmodium is sporozoite.
- 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.
19. **Assertion (A):** Schizogony is an asexual reproduction of the female Anopheles mosquito. [1]
Reason (R): It takes place only in human liver cells.
- 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.
20. How the saprotrophic Basidiomycetes are able to decompose plant matter? [1]
21. Why the pseudoparenchyma a fungal tissue is called false parenchyma? [1]
22. Plants are autotrophic. Can you think of some plants that are partially heterotrophic? [1]

Section B

23. **Fill in the blanks:** [2]
- (a) _____ is the diploid phase in the life cycle of a plant, which reproduces asexually; it is the spore-bearing plant. [1]
(b) _____ is the haploid phase in the life cycle of a plant, which reproduces sexually by the formation of gametes; it is the gamete-bearing plant. [1]
24. Neurospora - an ascomycetes fungus has been used as a biological tool to understand the mechanism of plant genetics much in the same way as Drosophila has been used to study animal genetics. What makes Neurospora so important as a genetic tool? [2]
25. Fungi are cosmopolitan, write the role of fungi in your daily life. [2]
26. How do fungi form a partnership with most plants? [2]
27. Write the names of three diseases caused by fungi. [2]
28. Which type of fungi are also called bracket fungi? [2]
29. Write two differences between algae and fungi. [2]
30. What do you understand by alternation of generation? Describe in short. [2]

Section C

31. At a stage of their cycle, Ascomycetes fungi produce the fruiting bodies like apothecium, perithecium, and cleistothecium. How are these three types of fruiting bodies different from each other? [3]
32. Differentiate between Ascomycetes and Basidiomycetes. [3]
33. Describe the cell structure of fungus in detail. [3]
34. Write differences between ascocarp and basidiocarp. [3]
35. Define the term mycorrhiza. How are these associations affect a plant? Explain with examples. [3]

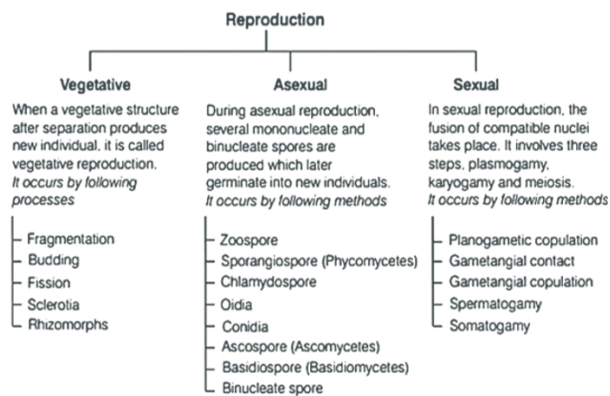
36. Apart from chlorophyll, algae have several other pigments in their chloroplast. What pigments are found in blue-green, red and brown algae that are responsible for their characteristic colours? [3]
37. Find out what do the terms **algal bloom** and **red tides** signify. [3]
38. Write short notes on: [3]
(a) Kingdom plantae (b) Kingdom animalia (c) Bacteria (d) Lichens
39. Enlist four distinguish features of Animalia. [3]

Section D

Question No. 40 to 43 are based on the given text. Read the text carefully and answer the questions: [4]

The fungi constitute a unique kingdom of heterotrophic organisms. They show a great diversity in morphology and habitat. Fungi are cosmopolitan and occur in air, water, soil, and on animals and plants. They prefer to grow in warm and humid places. Most fungi are heterotrophic and absorb soluble organic matter from dead substrates and hence are called saprophytes. When a fungus reproduces sexually, two haploid hyphae of compatible mating types come together and fuse. In some fungi, the fusion of two haploid cells immediately results in diploid cells (2n). The fungiform fruiting bodies in which reduction division occurs, leading to the formation of haploid spores. Symbionts - in association with algae as lichens and with roots of higher plants as mycorrhiza.

Three types of reproduction occur in fungi



40. Observe the given flow chart of reproduction and mention which steps involves in the sexual cycle of fungi.
41. What is Rhizopus? Also, mention Rhizopus - wheat rush a correct match?
42. What is Mycorrhiza? And mention its function.
43. In which form Fungi Stores Food Material? Do fungi have food vacuoles?

Question No. 44 to 47 are based on the given text. Read the text carefully and answer the questions: [4]

The morphology of the mycelium, mode of spore formation, and fruiting bodies form the basis for the division of the fungi kingdom into various classes which include four sub-division Phycomycetes, ascomycetes, basidiomycetes, Deuteromycetes. Members of Phycomycetes are found in aquatic habitats and on decaying wood in moist and damp places or as obligate parasites on plants, ascomycetes are mostly multicellular. The asexual spores are conidia produced exogenously on the special mycelium called conidiophores. Basidiomycetes are mushrooms, bracket fungi or puffballs. They grow in soil, on logs and tree stumps and in living plant bodies as parasites. The basidiospores are exogenously produced on the basidium.

Classification of Fungi			
Phycomycetes (Lower Fungi)	Ascomycetes (Sac Fungi)	Basidiomycetes (Club Fungi)	Deuteromycetes (Fungi imperfecti)
Saprolegnia	Yeast	Agaricus	Cercospora
Rhizopus	Aspergillus	Polyporus	Collectotrichum

Mucor	Pencillium	Puccinia	Trichoderma
Albugo	Neurospora	Ustilago	Pyricularia
Pythium	Peziza	Lycoperdon	Fusarium

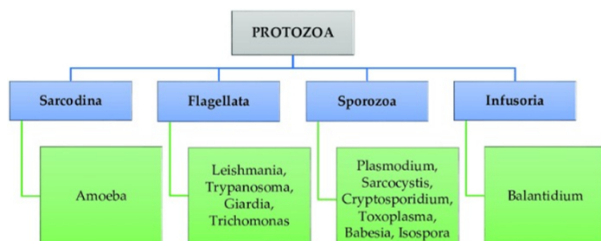
44. Observed given table of Classification of Fungi and identify the class of fungi in which asexual spores are not found, vegetative reproduction occurs by fragmentation, and sexual organs are absent.
45. Where are Members of Phycomycetes found?
46. What is ascomycetes? What is the characteristic feature of ascomycetes and basidiomycetes?
47. Identify the figure given below. Also, mention its characteristics.



Question No. 48 to 51 are based on the given text. Read the text carefully and answer the questions:

[4]

Sarcodines are unicellular/jelly-like protozoa found in fresh or sea water and in moist soil. Their body lacks a periplast. Therefore, they may be naked or covered by a calcareous shell. They usually lack flagella and have temporary protoplasmic outgrowths called pseudopodia. These pseudopodia or false feet help in movement and capturing prey. They include free-living forms such as Amoeba or parasitic forms such as Entamoeba. Zoo flagellates ciliates and I sporozoans are other groups of protozoan protists. They are all unicellular and heterotrophic. They may be holozoic, saprobic or parasitic.



48. Write two lines about flagellated protozoans and also mention some flagellated protozoans.
49. Observe the given protozoan classification and mention what is the basis of protozoan classification.
50. Mention some locomotory organs of protozoa.
51. Which protozoan group has two nuclei, macronucleus, and micronucleus? Mention characteristics of it.

Section E

Question No. 52 to 56 are based on the given text. Read the text carefully and answer the questions:

[5]

Sarcodines are unicellular/jelly-like protozoa found in fresh or sea water and in moist soil. Their body lacks a periplast. Therefore, they may be naked or covered by a calcareous shell. They usually lack flagella and have temporary protoplasmic outgrowths called pseudopodia. These pseudopodia or false feet help in movement and capturing prey. They include free living forms such as Amoeba or parasitic forms such as Entamoeba. Zoo flagellates ciliates and I sporozoans are other groups of protozoan protists. They are all unicellular and heterotrophic. They may be holozoic, saprobic or parasitic.

52. Which of the following is a flagellated protozoan.

a) Entamoeba

b) Amoeba

c) Plasmodium

d) Trypanosoma

53. The basis of protozoan classification is:

a) Number of nuclei

b) Shape

c) Locomotion

d) Measurement

54. Which of the following is not the locomotory organ of protozoa.

a) Flagella

b) Cilia

c) Parapodia

d) Pseudopodia

55. Protozoan group with two nuclei, macronucleus & micronucleus is:

a) Sporozoan

b) Flagellata

c) Ciliata

d) Sarcodina

56. **Assertion (A):** The heterotrophic protists are found as saprophytes, parasites and predators.

Reason (R): Heterotrophic protists are eukaryotic and mostly unicellular except few protists.

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.

57. Make a list of algae and fungi that have commercial value as source of food, chemicals, medicines and fodder. [5]

58. Explain the following in terms of mycorrhizal association. [5]

i. Growth promotion

ii. Antimicrobial substance

iii. Nourishment

iv. Adverse environment

v. Absorption of water

59. Explain **any two** classes of fungi. Give example of each group. [5]

60. Describe various classes of fungi. Give details of their key characteristics. [5]

61. Peat is an important source of domestic fuel in several countries. How is peat formed in nature? [5]

62. Algae are known to reproduce asexually by a variety of spores under different environmental conditions. Name these spores and the conditions under which they are produced. [5]

Section F

Question No. 63 to 68 are based on the given text. Read the text carefully and answer the questions: [6]

The morphology of the mycelium, mode of spore formation and fruiting bodies form the basis for the division of the fungi kingdom into various classes which include four sub-division Phycomycetes, ascomycetes, basidiomycetes, deuteromycetes. Members of phycomycetes are found in aquatic habitats and on decaying wood in moist and damp places or as obligate parasites on plants, ascomycetes are mostly multicellular. The asexual spores are conidia produced exogenously on the special mycelium called conidiophores. Basidiomycetes are mushrooms, bracket fungi or puffballs. They grow in soil, on logs and tree stumps and in living plant bodies as parasites. The basidiospores are exogenously produced on the basidium.

63. The asexual spores are not found, vegetative reproduction occurs by fragmentation and sexual organs are absent. Identify the class of fungi.

a) Basidiomycetes

b) Ascomycetes

c) Deuteromycetes

d) Phycomycetes

64. Match the columns:

(I) Basidiomycetes	(A) Agaricus
(II) Ascomycetes	(B) Albugo
(III) Phycomycetes	(C) Trichoderma
(IV) Deuteromycetes	(D) Saccharomyces

a) I-D, II-A, III-B, IV-C

b) I-A, II-D, III-B, IV-C

c) I-C, II-D, III-A, IV-B

d) I-A, II-B, III-D, IV-C

65. With respect to the fungal sexual cycle, choose the correct sequence of events.

a) Meiosis, Plasmogamy, and Karyogamy

b) Karyogamy, Plasmogamy, and Meiosis

c) Plasmogamy, Karyogamy and Meiosis

d) Meiosis, Karyogamy, and Plasmogamy

66. Members of Phycomycetes are found in

I. Aquatic habitats

II. On decaying wood

III. Growing on dung

IV. On log and tree stumps

Choose from the following options:

a) I and III

b) I and IV

c) II and III

d) I and II

67. Dikaryon formation is the characteristic feature of

a) ascomycetes and Phycomycetes

b) ascomycetes and basidiomycetes

c) phycomycetes and basidiomycetes

d) phycomycetes and zygomycetes

68. Identify the figure given below.



a) Agaricus

b) Yeast

c) Mucor

d) Aspergillus

Question No. 69 to 74 are based on the given text. Read the text carefully and answer the questions:

[6]

The fungi constitute a unique kingdom of heterotrophic organisms. They show a great diversity in morphology and habitat. Fungi are cosmopolitan and occur in air, water, soil, and on animals and plants. They prefer to grow in warm and humid places. Most fungi are heterotrophic and absorb soluble organic matter from dead substrates and hence are called saprophytes. When a fungus reproduces sexually, two haploid hyphae of compatible mating types come together

and fuse. In some fungi, the fusion of two haploid cells immediately results in diploid cells (2n). The fungiform fruiting bodies in which reduction division occurs, leading to the formation of haploid spores. Symbionts – in association with algae as lichens and with roots of higher plants as mycorrhiza.

69. The sexual cycle of fungi involves which of the following steps?

- a) The fusion of protoplasts between two motile or non-motile gametes is called plasmogamy.
- b) All of these
- c) Fusion of two nuclei is called karyogamy.
- d) Meiosis in zygote resulting in haploid spores.

70. Which of the following is the incorrect match?

	Column I	Column II
a.	Parasitic fungus	white spots seen on mustard leaves
b.	Penicillium	source of antibiotic
c.	Rhizopus	wheat rush
d.	Yeast	make bread and beer

- a) b
- b) a
- c) d
- d) c

71. Choose the correct pair.

- a) Saprotrophic fungi – feeds on dead and decaying organic matter
- b) All of these
- c) Parasitic fungi – feeds on plants and animals
- d) Symbiotic fungi – mycorrhiza

72. In Which form Fungi Stores Food Material?

- a) Lipid
- b) Protein
- c) Starch
- d) Oil and glycogen

73. Which of the following statement is correct about yeast?

- I. Yeasts which are unicellular, fungi are filamentous.
- II. The network of hyphae is known as mycelium.
- III. Some hyphae are continuous tubes filled with uninucleated cytoplasm.
- IV. Bodies consist of long, slender thread-like structures called hyphae.

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

74. Which of the following is an indicator of air pollution?

- a) Lichens
- b) Agaricus
- c) Common mushrooms
- d) Mycorrhiza