

Objective

1. Example of soil dwelling carnivorous fungus is:
 (A) Pencillium (B) Arthrotrys (C) Pleurotus (D) Armillaria
2. Most of the visible part of lichen is:
 (A) Roots (B) Fungi (C) Bacteria (D) Algae
3. The lichen which are leaf like are called:
 (A) Crustose (B) Fruticose (C) All of these (D) Foliose
4. The fungi which obtain their food from organic matter are called:
 (A) Parasites (B) Heterotrophs (C) Autotrophs (D) Saprotrophs
5. Mycorrhizae association is present in % of all vascular plants.
 (A) 85 (B) 95 (C) 75 (D) 65
6. The absorptive nutrition of fungi is aided by:
 (A) They form fruiting bodies (B) None of these
 (C) Spore formation (D) Their large surface area - volume ratio
7. Fungi store surplus food usually as lipid droplets or glycogen in the:
 (A) Stolon (B) Sporangiospore (C) Spore (D) Mycelium
8. Fungi obtain their food by direct absorption from the immediate environment and are thus:
 (A) Phototrophs (B) Holozoic
 (C) Ingestive heterotrophs (D) Absorptive heterotrophs
9. Lichens are mutualistic symbiotic associations between:
 (A) Fungi & vascular plants (B) Fungi & mosses
 (C) Fungi & bryophytes (D) Fungi & photoautotrophs
10. Most of the visible part of lichen consists of:
 (A) Bacteria (B) Roots (C) Fungi (D) Algae
11. Asexual Reproduction in yeasts occurs by:
 (A) Resting Spores (B) Budding (C) Fragmentation (D) Conidia
12. In fungi spores are produced inside the reproductive structures called:
 (A) Ascocarps (B) Basidia (C) Sporangia (D) Conidia
13. A single Mycelium may produce upto a kilometer of new Hyphae in only:
 (A) Five day (B) One day (C) Fifteen days (D) Twenty days
14. Conidia are non-motile , asexual spores which are cut off at the end of modified hypae called:
 (A) Ascus (B) Sporangiohores (C) Conidiophores (D) Basidium
15. A simple breaking of mycelium of some fungal hyphae is called:
 (A) Karyogamy (B) Fragmentaion (C) Hererogonia (D) Hormogonium

16. Fungi show a characteristic type of mitosis , called:
 (A) Nucleomitosis (B) Cytomitosis
 (C) Nuclear mitosis (D) Cytoplasmic mitosis
17. A fungal hypha / cell having 2 nuclei of different genetic types is called:
 (A) Heterokaryotic (B) Dikaryotic (C) Both A & B (D) None of these
18. Rhizopus belongs to the phylum:
 (A) Aspergillus (B) Zygomycota (C) Basidiomycota (D) Ascomycota
19. Which fungus is found growing on an spoiling moist bread , fruit:
 (A) Candida (B) Rhizopus (C) Penicillium (D) Aspergillus
20. The Zygomycetes:
 (A) Produce motile gametes (B) Have hyphae without regularly occurring cross walls
 (C) Are haploid throughout their life (D) Both A & C
21. In saprobes , certain modified hyphae that anchor the fungus to the substrate are called:
 (A) Rhizoids (B) Conidiophores (C) Sporangiohores (D) Stolons
22. Some fungi are used to control environmental pollution , the process is called:
 (A) Fungal culture (B) Biological control (C) Hydroponic (D) Bioremediation
23. Fungi are very important as decomposers and:
 (A) Consumers (B) Symbionts (C) Composers (D) Producer
24. Lichens are very good of air quality.
 (A) Bioindicators (B) Bioremediation (C) Both A & B (D) None of these
- 25: is the largest group of fungi.
 (A) Zygomycota (B) Ascomycota (C) Deuteromycota (D) Basidiomycota
26. Yeasts are unicellular:
 (A) Fungi (B) Algae (C) Bacteria (D) Protozoans
27. Saccharomyces cerevisiae is a:
 (A) Protozoan (B) Bacterium (C) Algae (D) Yeast
28. Each Ascus comprise Ascospores:
 (A) 08 (B) 04 (C) 12 (D) 03
- 29: An ascus is to ascomycetes as is a to basidiomycetes.
 (A) Basidiocarp (B) Haustorium (C) Basidium (D) Basidiospore
30. 50 % or so of which of the following occurs as lichens?
 (A) Deuteromycota (B) Basidiomycota (C) Ascomycota (D) Zygomycota
31. Which one is the largest group of fungi , including over 60,000 species?
 (A) Deuteromycota (B) Ascomycota (C) Zygomycota (D) Basidiomycota
32. Most sac - fungi have asci inside macroscopic fruiting bodies called:
 (A) Ascidia (B) Ascocarps (C) Ascosphores (D) Basidia
33. Ascospores are produced by meiosis inside their characteristic sac like structures called:

- (A) Conidia (B) Sporangia (C) Basidia **(D) Asci**
34. Members of Basidiomycota are commonly called:
(A) Molds **(B) Mushrooms** (C) Morels (D) Splitting fungi
35. Poisonous mushrooms are called:
(A) Agaricus (B) Morels **(C) Toad Stools** (D) Truffles
36. Rust disease is caused by:
(A) Yeast **(B) Puccinia** (C) Rhizopus (D) Ustilago
37. The most common rust fungi are:
(A) Penicillium **(B) Puccinia** (C) Yeast (D) Ustilago
38. Most common smut fungi are:
(A) Yeast (B) Penicillium (C) Puccinia **(D) Ustilago**
39. Loose must of wheat is caused by:
(A) Alternaria **(B) Ustilago** (C) Aspergillus (D) Penicillium
40. Ustilago species are most common:
(A) Yeast (B) Mold **(C) Smut fungi** (D) Rust fungi
41. Mushrooms , rusts , smuts , puff balls , bracket fungi are the examples of:
(A) Deuteromycota (B) Ascomycota **(C) Basidiomycota** (D) Zygomycota
42. Which group of fungi is also called club fungi:
(A) Deuteromycota (B) Ascomycota **(C) Basidiomycota** (D) Zygomycota
43. Basidiomycetes are named so for their characteristics , club - shaped sexual reproductive structure , the:
(A) Conidium (B) Ascus **(C) Basidium** (D) Antheridium
44. First discovered antibiotic is:
(A) Ergotine (B) Penicillin (C) Lovastatin **(D) Cyclosporine**
45. Foot and mouth disease is caused by:
(A) Virus **(B) Fungi** (C) Bacteria (D) Algae
46. Brush - like arrangement of its conidia is characteristic of:
(A) Agaricus (B) Ustilago **(C) Penicillium** (D) Rhizopus
47. Aspergillus belong to Phylum:
(A) Ascomycota (B) Basidomycota (C) Zygomycota **(D) Deuteromycota**
48. In which group of fungi sexual reproduction has not been observed?
(A) Basidiomycota **(B) Deuteromycota** (C) Ascomycota (D) Zygomycota
49. Which group is also called imperfect fungi?
(A) Deuteromycetes (B) Ascomycetes (C) Basidiomycetes (D) Zygomycetes
50. Imperfect fungi show special kind of genetic recombination , called:
(A) Asexual reproduction (B) Sexual reproduction
(C) Parasexuate (D) None of these

- 51: Which statement about fungal nutrition is not true?
 (A) Some fungi are mutualists (B) Some fungi are active predators
 (C) Facultative parasitic fungi can grow only on their specific host (D) All fungi require mineral nutrients
- 52: The absorptive nutrition of fungi is aided by:
 (A) They are all parasites (B) Spore formation
 (C) Their large surface area - volume ratio (D) They form fruiting bodies
- 53: The Zygomycetes:
 (A) Produce motile gametes (B) Are haploid throughout their life
 (C) Have hyphae without regularly occurring cross walls (D) Answer A and C are both correct
- 54: Which of the following cell / structures are associated with asexual reproduction in fungi:
 (A) Basidiospores (B) Zygosporangia (C) Conidia (D) Ascospores
- 55: The closest relatives of fungi are probably:
 (A) Vascular plants (B) Brown algae (C) Slime molds (D) Animals
- 56: Examples of fungi are the:
 (A) Green mold (B) Brown mold (C) Yeasts (D) Rusts
- 57: An ascus is to ascomycetes as is a to basidiomycetes.
 (A) Basidiocarp (B) Haustorium (C) Basidiospore (D) Basidium
- 58: Which statement is not true about Deuteromycetes?
 (A) Their asexual spores are called conidia (B) They are called imperfect fungi
 (C) They have both sexual and asexual reproduction (D) It is a heterogenous polyphyletic group
- 59: Fungi can tolerate a wide range of pH from:
 (A) 1 - 5 (B) 4 - 6 (C) 2 - 9 (D) 3 - 8
- 60: Scientists who study fungi are called:
 (A) Physiologists (B) Mycologists (C) Ethologists (D) Phycologists
- 61: The closest relative of fungi are probably:
 (A) Vascular plants (B) Brown algae (C) Slime molds (D) Animals
- 62: The number of species of organisms called " fungi " which are known , are approximately:
 (A) 100 (B) 100,0 (C) 100,00 (D) 100,000
- 63: Classification of fungi into four main groups is based primarily on:
 (A) Methods of reproduction (B) The type of their sexual reproductive structures
 (C) Both A & B (D) Modes of nutrition
- 64: Parasitic fungi directly absorb nutrients from living host by:
 (A) Gametangia (B) Haustoria (C) Rhizoids (D) Roots
- 65: The cell wall of fungus contains:
 (A) Cellulose (B) Chitin (C) Calcium carbonate (D) None of these
- 66: Non-septate hyphae are called hyphae.

67. A single mycelium may produce upto in length only one day.
 (A) 1 m (B) 1 km (C) 1 cm (D) 1 mm
68. The body of a fungus (except yeast) is called:
 (A) Mycelium (B) Prothallus (C) Hyphae (D) Thallus
69. The non - hyphal unicellular fungi are:
 (A) Truffles (B) Yeasts (C) Puffballs (D) Morels
70. Which is used to inhibit fungal growth?
 (A) Griseofulvin (B) Ergotin (C) Cyclosporin (D) Lovastain

Chapter : 08

Fungi


Subjective

Q1: **What is hypha?**

Ans: Hypha is a long, slender, branched and thread like filament of fungal body.

Q2: **What are fungi?**

Ans: The eukaryotic organisms which have cell wall but cannot synthesize their food are called fungi.

Q3: **What is mycelium?**

Ans: Mycelium is body of fungi which represent group of hyphae.

Q4: **What do you mean by Bio-remediation?**

Ans: Bioremediation means degrading or removal of environmental poisons or pollutants by the help of organisms.

Q5: **What is haustoria?**

Ans: There are special hyphae produced in parasitic fungi. These hyphae penetrate into the host tissue and absorb food.

Q6: **What is the advantage of incomplete septa in septate hyphae?**

Ans: Septa of many septate fungi have a pore through which cytoplasm flows from cell to cell, carrying materials to growing tips.

Q7: **Why yeasts are different from other fungi?**

Ans: Yeasts are different from other fungi as they are unicellular.

Q8: **Name sexual and asexual spores of Ascomycota.**

Ans: Sexual spores are called ascospores borne in asci while asexual spores are called conidia in Ascomycota.

Q9: **What are the main types of mycorrhiza?**

Ans: **Endomycorrhizae:**

- In which fungal hyphae penetrate the outer cell of the plant root, forming coils, swellings and minute branches, and also extend out into surrounding soil.

Ectomycorrhizae:

- In which the hyphae surround and extend between the cells but do not penetrate the cell wall of the roots. These are found in pines, firs etc.

Q10: **Why is green mould more likely to contaminate an orange kept in refrigerator than the bacteria?**

Ans: The Fungi can tolerate temperature extremes 5-6 °C below freezing and hence are more likely to contaminate an orange kept in a refrigerator than the bacteria.

Q11: **How fungi gets its nutrients?**

Ans: **Fungi gets its nutrients:**

- Most fungi are decomposers i.e., obtain food from dead organisms. e.g., Yeast, Agaricus.
- Some fungi are parasites i.e., obtain food from living host. e.g., rust and smut.
- Some are predators e.g. Arthrotrys.

Q12: **What do you mean by term karyogamy?**

Ans: The fusion of nuclei in different mycelia is called karyogamy.

Q13: **What are yeasts?**

Ans: Yeasts are unicellular microscopic fungi which are non-hyphal in structure.

Q14: **What is parasexuality?**

Ans: The exchange of portion of chromosomes of two nuclei lying in the same hyphae.

Q15: **What are the benefits of mycorrhizae?**

Ans: The fungal hyphae of mycorrhizae increase the amount of soil contact and total surface area for absorption and help in direct absorption of minerals and nutrients from the soil.

Q16: **Name any four important fungal diseases of plants.**

Ans: Four important fungal diseases of plants:

- Rusts.
- Smuts.
- Powdery mildews.
- Potato wilt.

Q17: **Some enzymes of fungi are useful on one hand and harmful on other. Discuss.**

Ans: Some fungal enzymes are used in fermentation and brewing industry but digesting enzymes of some saprotrophic fungi spoil our food, plastic, paper and textile.

Q18: **What do you mean by Rust?**

Ans: It is a fungal disease of plants. As its color is brown like that of iron, so it is called as rust.

Q19: **What is the difference between dikaryotic and diploid?**

Ans: Fungal cells having two nuclei of different genetic make up are called dikaryotic while having two sets of chromosomes in the nucleus of a cell or hypha is called diploid condition.

Q20: **Name any important fungal disease of humans.**

Ans: Important fungal disease of humans:

- Ringworm.
- Aspergillosis.

- Histoplasmosis.
- Oral and vaginal thrush.

Q21: **Define obligate parasites.**

Ans: Obligate parasites can grow only on their living host and cannot grow on available defined growth culture medium. For example many suit species.

Q22: **Differentiate between plasmogamy and karyogamy?**

Ans: Fusion of cytoplasm is plasmogamy and fusion of nuclei is karyogamy.

Q23: **Define facultative parasite.**

Ans: They can grow parasitically on their host as well as by themselves on artificial growth media.

Q24: **What are ascospores?**

Ans: Most sac fungi have asci inside macroscopic fruiting bodies called ascospores, the visible visible.

Q25: **Write two differences between fungal and animal.**

Ans: Fungi are different from animals as:

- They have absorptive mode of nutrition.
- They are non-motile.

Q26: **What is ergotism?**

Ans: Ergotism is caused by eating bread made from purple ergot-contaminated rye flour. The poisonous material in the ergot causes nervous spasm convulsion, even gangrene.

Q27: **What is the method of trapping nematodes in arthrobotrys?**

Ans: Some species of Arthrobotrys trap soil nematodes by forming constricting ring, their hyphae invading and digesting unlucky victim.

Q28: **How asexual reproduction takes place in fungi?**

Ans: Asexual reproduction takes place by spores, conidia, fragmentation and budding.

Q29: **What is Rhodotorula?**

Ans: Rhodotorula is a pink yeast which grows on shower curtains and other moist surfaces.

Q30: **Give a single characteristic that differentiates zygomycota from basidiomycota.**

Ans: Zygosporangia are formed in zygomycota while basidiospores are the sexually reproducing spores in basidiomycota.

Q31: **What is the composition of fungal cell wall and how is this composition advantageous to fungi.**

Ans: Cell wall of fungi is composed of chitin, which is more resistant to decay than are cellulose and lignin which make up plant cell wall.

Q32: **What do you mean by histoplasmosis?**

Ans: It is serious infection of lungs caused by inhaling spores of a fungus, which is common in soil contaminated with bird's feces.

Q33: **Write two similarities of plants with fungi?**

Ans: They resemble plants in some respects i.e.

- They lack centrioles and are non-motile.
- They have cell wall.

Q34: **Write two dissimilarities of plants with fungi?**

Ans: They differ plants as:

- They lack cellulose in their cell walls and contain chitin.
- Fungi are heterotrophs.

Q35: **Differentiate between the members of Spore / Conidium.**

Ans: **Spore / Conidium:**

Spores are non-motile, small asexual structures produced inside the reproductive structures called sporangia, which are cut off from the hyphae by complete septa. Conidia are non-motile, asexual spores which are cut off at the end of modified hyphae called conidiophores, and not inside the sporangia, usually in chains or clusters.

Q36: **State two paralleled characteristic of ascomycete and Basidiomycetes.**

Ans: Two paralleled characteristic of ascomycete and Basidiomycetes:

- Nuclear fusion in the basidium is followed by meiosis.
- Their sexual spores are called ascospores.

Q37: **Give a single characteristic that differentiates Zygomycota from Basidiomycota.**

Ans: In Zygomycota, non-septate, multinucleate hyphae are present while in Basidiomycota, septate dikaryotic hyphae are found.

Q38: **By what means can individuals in imperfect fungi be classified?**

Ans: Individuals in imperfect fungi can be classified on the basis of DNA sequence, though sexual structures may not be found.

Q39: **What are mycorrhizae?**

Ans: Mycorrhizae are mutualistic association between certain fungi and roots of vascular plants. The fungal hyphae dramatically increase the amount of soil contact and the total surface area for absorption and help in the direct absorption of phosphorus, zinc, copper and other nutrients from the soil into the roots.

Such plants show better growth than those without this association. The plant, on the other hand, supplies organic carbon to fungal hyphae.

Q40: **Name sexual and asexual spores of ascomycetes.**

Ans: Sexual spores are ascospores while asexual spores are conidia.

Q41: **To which phyla do the yeasts belong? How they differ from other fungi?**

Ans: Yeasts are unicellular microscopic fungi, derived from all the three different groups of fungi but mostly Ascomycetes, and reproducing mostly asexually by budding.

However, yeasts reproduce sexually by forming asci / ascospores or basidia / basidiospores. They ferment carbohydrate to ethanol and carbon dioxide. They are non-hyphal.

Q42: **What is the composition of fungal cell wall and how it is this composition advantageous to fungi?**

Ans: Fungal cell wall are composed of chitin, so their wall is more resistant to decay than cellulose and lignin which make up plant cell wall.

Q43: **What are Hyphae? What is the advantage of having incomplete septa?**

Ans: **Hyphae:**

Mycelium consists of long slender, branched, tubular, thread like filaments called hyphae. Hyphae spread extensively over the surface of substratum. Their cell walls are

composed of chitin, so their wall is highly resistant to decay. Hyphae may be septate or non-septate.

Advantage of having incomplete Septa:

- Cytoplasm flow from cell to cell, carrying the materials to growing tips and enabling the hyphae to grow rapidly when food and water are abundant and temperature is favorable.

Q44: **Differentiate between the members of Plasmogamy / Karyogamy.**

Ans: **Plasmogamy / Karyogamy:**

The fusion of nuclei is called karyogamy while the fusion of cytoplasm is called plasmogamy.

Q45: **Differentiate between the members of Endomycorrhizae / Ectomycorrhizae.**

Ans: **Endomycorrhizae:**

- Endomycorrhizae, in which the fungal penetrate the outer cell of the plant root, forming coils, swellings and minute branches, and also extend out into surrounding soil.

Ectomycorrhizae:

- Ectomycorrhizae, in which the hyphae surround and extend between the cells but do not penetrate the cell walls of the roots. These are mostly formed with pines, firs etc. However, the mycelium extends far out into the soil in both kinds of mycorrhizae.

Q46: **Differentiate between the members of Ascus / Basidium.**

Ans: **Ascus / Basidium:**

Basidiomycotes have sexual reproductive structure, the basidium, on which basidiospores are formed. Ascomycetes produce haploid sexual spores called ascospores inside their characteristic sac like structures called asci.

Q47: **Differentiate between the members of Obligate parasite / Facultative parasite.**

Ans: **Obligate parasite / Facultative parasite:**

Obligate parasites can grow only on their living host and cannot be grown on available defined growth culture medium e.g., various mildews and most rust species. Facultative parasite can grow parasitically on their host as well as by themselves on artificial growth media.

Chapter : 08

Fungi

pakcity.org

★ Imp.Long Questions ★

Q1: Describe methods of asexual reproduction in fungi. (v.imp)

Q2: Explain sexual reproduction in fungi.

Q3: Describe different methods of asexual reproduction found in fungi. (v.imp)

Q4: Explain sexual reproduction in fungi.

Q5: Describe the process of A-sexual reproduction occurs in fungi.

Q6: Draw life cycle of Rhizopus. (v.imp)

Q7: Describe and sketch the life cycle of Rhizopus. (v.imp)

Q8: Write a detailed note on Ascomycota.

Q9: Describe the life cycle of disease loose smut of wheat. Land adaptations in fungi.

- Q10: Give land adaptations in fungi on land. (v.imp)
- Q11: What is ecological importance of fungi?
- Q12: Write down four points of economic gains due to fungi. (v.imp)
- Q13: Give economic gains of fungi.
- Q14: Discuss economic losses due to fungi. (v.imp)
- Q15: Give the different modes of nutrition in fungi. / Discuss various methods of nutrition in fungi.
- Q16: Write a detail note on Mycorrhizae.

