

First year Biology complete notes

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FUNGI: A kingdom of mostly multicellular organisms which were previously classified in plants due to presence of cell wall, absence of centrioles and sessile nature. The fungi were later on separated from plants because they don't have chlorophyll and their cell wall has chitin instead of pectin.

MYCELIUM: The body of fungi is called hyphae. There are three branches in it which are Rhizoid (root like), Stolon (Stem like) and Sporangiospore (flower like).

ABSORPTIE HETEROTROPH: Fungi are called absorptive heterotrophs because they can not ingest food but can absorb it.

PARASITIC FUNGI: A group of fungi which obtain food from host and harm it.

SYMBIOTIC FUNGI: A group of fungi which get their food from living host and gives him benefit.

SAPROPHYTIC FUNGI: A group of fungi which depend on dead organisms. They are also called decomposers.

LICHEN: A symbiotic association between fungi, blue green algae and green algae. The fungi get food and algae get protection from sunlight and desiccation.

PREDATOR FUNGI: Group of fungi which live as predator on nematodes (round worms). E.g. Oyster mushroom

MYCORRHIZAE: Association between fungi and roots of vascular plants. The fungi get food and plants get nutrients from soil with the help of fungi.

SPORANGIOSPORE: A method of asexual reproduction in which fungi produces spores inside sporangium.

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CONIDIA FORMATION: A kind of asexual reproduction in which the conidiophore hypha is made. Here the spores are made outside of sporangium.

SPORANGIA: A capsule like structure made on the stalk of sporangiospore hyphae. Here spores are formed.

FRAGMENTATION: A very simple type of asexual reproduction in which broken pieces of fungal hyphae can grow into full fungi.

BUDDING: A kind of asexual reproduction, in which organism forms an outgrowth. On maturation, buds separate and mother organism makes new buds and does not die as a result of budding.

PLASMOGAMY: Fusion of cytoplasm of 2 fungi is called plasmogamy

KARYOGAMY: Fusion of nuclei of 2 fungi. It occurs after plasmogamy

DIKARYOTIC FUNGI: A fungal hypha which carries nuclei of 2 separate fungi. Here nuclei do not fuse for long time. This condition is also called **Heterokaryotic**

ZYGOMYCOTA: A smallest group of 600 species of fungi, which lack septa. They reproduce asexually by sporangiospore process and make zygospores during sexual reproduction. E.g. Rhizopus

ASCOMYCOTA: A group of 30,000 species of fungi which reproduce asexually by Conidia formation and make **ascus** during sexual formation. E.g.

ASCUS: A reproductive structure made by ascomycota fungi. Here zygote is formed during sexual reproduction

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YEAST: Single cellular fungi of Ascomycota group. They do not reproduce sexually and perform budding during asexual reproduction. They are used in making backing power and fermentation of fruit sugar to produce wine etc.

BASIDIOMYCOTA: Group of 16,000.00 fungi which produce basidium as reproductive structure, where 40 million spores may be produced only in one doom. E.g. Mushroom.

AGRACUS COMPESTRIS: Species of food fungi, which is grown in 70 different countries of the world as crop.

DSUTEROMYCOTA: A group of fungi commonly called imperfect fungi. They have lost ability of sexual reproduction. And can do genetic recombination only.

PARA-SEXUALITY: A reproductive method in which imperfect fungi recombine their DNAs

ASPERGILUS FUNGI: A highly important fungi which causes Aspergilosis. It is a disease in which fungal spores settle down in lungs and ears.

MONILIASIS: A highly pathogenic fungi, which causes infection in gums (particularly in those who eat sweets and do not wash teeth).

AFLATIXIN: A poison produced by Aspergillus fungi. It may cause cancer

ERGOTISM: A disorder of digestive system caused by fungal infected bread.

TRUE FUNGI

Fungi with cell wall (Eumycophyta)

FALSE FUNGI

Fungi without cell wall (myxomycophyta)

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HYPHAE

One of the three branches in fungal body

MYCELIUM

Whole body of Rhizopus fungi

RHIZOID

It refers to hypha, which absorbs organic matter. This is equal of roots in plants

STOLON

It refers to a hypha, which remains over ground and support fungi. This is equal of stem in plants

SPORANGIOSPORE

A reproductive hypha, which grows erect. This is equal of flower in plants

SPORANGIUM

The swollen part of reproductive hypha in which spores are produced

SEPTATE FUNGI

A fungus having segments on hyphae

UNSEPTATE FUNGI

Fungi without segments

COLMULLA

The lower part of sporangium. It is made of fat and plays role in reproduction

GAMETANGIUM

Union between two different hyphae

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PROMYCELIUM

First hyphae, which develop from zygospore

YEAST

The one and only single cellular fungi. It is commonly used as baking powder in baking cakes

CHLOROMYCETIN

NEOMYCIN

TERRAMYCIN

All are antibiotics made from fungi

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PRACTICE SHEET

TEST-01

The fungi were classified with plants because

- (a) They have cell wall
- (b) They are sessile
- © **They are autotroph**
- (d) Both a&b

2. Fungi are heterotrophic by ingestion.

- A) **True**
- B) False

3. Fungal cells have _____.

- A. **DNA in a nucleus**
- B. chloroplasts
- C. cellulose in their cell walls
- D. all of the above

4. Fungi are multicellular _____.

- A. prokaryotes
- B. **eukaryotes**

5. Some fungi and bacteria act as _____ and keep chemicals cycling through the ecosystems.

- A. producers
- B. consumers
- C. **decomposers**
- D. pollinators

6. Which of the following involves members of the kingdom Fungi?

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- A. athlete's foot
 - B. LSD
 - C. beer
 - D. all of the above
7. All fungi are multicellular.
- a) True
 - b) **False**
8. Human fungal diseases include _____.
- A. ringworm
 - B. toxoplasmosis
 - C. yeast infection
 - D. **both A and C**
9. Fungi _____.
- A. are nonmotile
 - B. lack basal bodies
 - C. never have flagella
 - D. **all of the above**
11. Fungal cells have a cell wall containing _____.
- A. cellulose
 - B. **chitin**
 - C. peptidoglycan
 - D. glycogen
13. Fungi reproduce _____.
- A. sexually
 - B. asexually
 - C. **both A and B**
14. A fungal hypha that contains paired haploid nuclei is _____.
- A. dimorphic
 - B. a dicotyledon

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- C. a dinoflagellate
D. dikaryotic
15. **Asexual reproduction of fungi _____.**
A. can occur by fragmentation
B. usually involves the production of spores by a single mycelium
C. can occur by budding in yeast
D. **all of the above**
16. **during sexual reproduction hyphae from two different mating types fuse.**
True
False
18. **Non-septate fungi _____.**
A. **are multinucleated**
B. have cross walls in their hyphae
C. both A and B
19. **The energy reserve of fungi is _____.**
A. starch
B. cellulose
C. **glycogen**
D. chitin
23. **Fungi that live on the tissues of living plants and animals are _____.**
A. **parasites**
B. saprotrophic decomposers
24. **Fungi that infect plants are of huge economic impact.**
True
False
26. **The body of most fungi is a multicellular structure known as a _____.**
A. **mycelium**
B. lichen

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- C. mycorrhizae
D. hypha
27. There are no fungi that _____.
A. are parasites
B. decompose dead tissue
C. **do photosynthesis**
D. reproduce sexually
31. Originally fungi were classified as plants.
True
False
38. In *Rhizopus* the hyphae are specialized for various purposes.
True
False
42. *Rhizopus* rhizoids _____.
A. carry out digestion
B. grow into the bread
C. anchor the mycelium
D. **all of the above**
43. The haploid capsule that produces spores in *Rhizopus* is called a _____.
A. conidiospore
B. **sporangium**
C. zygospore
D. basidium
44. The *Rhizopus* hyphae of opposite mating types are termed male and female.
True
False
45. In *Rhizopus* _____ are horizontal hyphae that exist on the surface of your bread.

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- A. stolons
 - B. rhizoids
 - C. sporangia
 - D. zygospores
- 46. Which of the following is most likely to prevent you from enjoying a sandwich?**
- A. Penicillium
 - B. powdery mildew
 - C. **Rhizopus**
 - D. truffles
- 51. Yeast is unicellular fungi.**
- True
 - False
- 56. Yeasts reproduce _____.**
- A. sexually
 - B. **asexually by budding**
 - C. asexually by mitosis
 - D. all of the above
- 59. Yeasts are used by humans _____.**
- A. to make bread
 - B. for genetic engineering experiments
 - C. to make beer and wine
 - D. **all of the above**
- 66. Cereal crops like corn, wheat, oats and rye are parasitized by club fungi called _____.**
- A. smuts
 - B. rusts
 - C. **both A and B**
- 73. Poisonous fungi are all classified as basidiomycota.**
- True
 - False

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74. A(n) _____ fungus is the source of the antibiotic penicillin.
- A. club
 - B. sac
 - C. **imperfect**
 - D. none of the above
75. Imperfect fungi reproduce _____.
- A. **asexually**
 - B. sexually
 - C. both A and B
76. Which of these human diseases is caused by an imperfect fungus?
- A. athlete's foot.
 - B. thrush
 - C. ringworm
 - D. **all of the above**
78. Lichens are a symbiotic relationship between a fungus and a _____.
- A. green algae
 - B. cyanobacteria
 - C. **both A and B**
79. Photosynthesis is done by the _____ component of lichen.
- A. plant
 - B. fungus
 - C. cyanobacterium
 - D. both A and C
80. A mutualistic relationship between soil fungi and plants' roots is called a _____.
- A. **mycorrhizae**
 - B. conidiophores
 - C. lichen
 - D. fruiting body

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CHAPTER 8 TEST – 1

QUESTION NO.	ANSWER KEY		
1)		26)	
2)		27)	
3)		28)	
4)		29)	
5)		30)	
6)		31)	
7)		32)	
8)		33)	
9)		34)	
10)		35)	
11)		36)	
12)		37)	
13)		38)	
14)		39)	
15)		40)	
16)		41)	
17)		42)	
18)		43)	
19)		44)	
20)		45)	
21)		46)	
22)		47)	
23)		48)	
24)		49)	
25)		50)	
		51)	

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52)	
53)	
54)	
55)	
56)	
57)	
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62)	
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66)	

67)	
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75)	
76)	
77)	
78)	
79)	
80)	

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TEST-02 FUNGI

- 1. Previously fungi were regarded as plants because of having lacking centrioles, being non-motile and having**
 - (a) Cell wall
 - (b) Chlorophyll
 - (c) Multinucleated cell
 - (d) None
- 2. A single mycelium may produce up to a kilometer hyphae in only**
 - (a) 1 day
 - (b) 2 days
 - (c) 3 days
 - (d) All
- 3. When a fungi directly absorbs organic food material from others, it is called**
 - (a) Rhizoid
 - (b) Absorptive heterotroph
 - (c) Saprophyte
 - (d) None
- 4. A saprophytic fungi decomposes**
 - (a) Living organic matter
 - (b) Dead organic matter
 - (c) Both
 - (d) None
- 5. Parasitic fungi absorb the nutrients directly from the living host by**
 - (a) Haustoria
 - (b) Rhizoid
 - (c) Both
 - (d) None

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6. **When a fungi grows only on their living host and can not grown on available culture, they are called**
 - (a) Parasitic
 - (b) Obligate parasite
 - (c) Saprophytic
 - (d) Facultative parasite
7. **When a fungi grows on their living host as well as can grown on available culture, they are called**
 - (a) Parasitic
 - (b) Obligate parasite
 - (c) Saprophytic
 - (d) Facultative parasite
8. **Mutalistic association between certain fungi and green alga is termed as**
 - (a) Lichens
 - (b) Mycorrhizae
 - (c) Both
 - (d) None
9. **In Lichen type of association, the fungus protects its partner from strong sunlight, and**
 - (a) Desiccation
 - (b) Pathogens
 - (c) Both
 - (d) None
10. **Association between certain fungi and roots of vascular plants is termed as**
 - (a) Lichens
 - (b) Mycorrhizae
 - (c) Both
 - (d) None
11. **Candia is one form of yeast fungi which causes common vaginal infection**
 - (a) True
 - (b) False

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12. A mushroom with a cap of 7.5 centimeters can produce -----million spores per hour
- (a) 20 million
 - (b) 30 million
 - (c) 40 million
 - (d) Variable
13. One of the following is a toxin produced by aspergillus's which causes cancer
- (a) Aflatoxin
 - (b) Mycotoxin
 - (c) Both
 - (d) None
14. Ergotism is caused by eating bread made from a floor which is contaminated with purele ergot fungi
- (a) True
 - (b) False
15. The world loss of fruits due to fugal attack is -----per year
- (a) 15-50 %
 - (b) 15- 60%
 - (c) 14-40 %
 - (d) Variable

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NUMBER	CORRECT OPTION
1	A
2	A
3	B
4	B
5	A
6	B
7	D
8	A
9	A
10	B
11	A
12	C
13	A
14	A
15	A

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POSSIBLE MCQs

1. **The fungi mostly reproduce by**
 - a) Spores
 - b) Seeds
 - c) Zoospores
 - d) Isogametes
2. **One of the following refers to true fungi**
 - a) Myxomycophyta
 - b) Eumycophyta
 - c) Myxophyceae
 - d) Mycophyceae
3. **The whole body of fungus is called**
 - a) Mycelium
 - b) Promycelium
 - c) Hypha
 - d) Hyphae
4. **The cell wall of fungus is made up of**
 - a) Cellulose
 - b) Chitin
 - c) Both a&b
 - d) None
5. **The suitable place where fungi prefer to grow is**
 - a) Dark moist places
 - b) Dark places
 - c) Moist places
 - d) None
6. **One of the following is not fungal disease**
 - a). Ringworm
 - b). Athletes foot
 - c). Blight of potato

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d). Ascariasis

7. Fungi can reproduce in different ways

a). Fission

b). Spore formation

c). Budding

d). All of above

8. The aquatic fungi have flagella to become motile, the terrestrial spores are dispersed by

a). Wind

b). Animals

c). Both a&b

d). None

9. Rhizopus is a common

a). Saprophytic fungi

b). Parasitic fungi

c). Symbiotic fungi

d). None

10. The rhizopus fungi reserve their food in the form of

a). Starch

b). Cellulose

c). Glycogen particles

d). All

11. The hypha that absorbs the organic matter is called

a). Stolon

b). Rhizoid

c). Sporangium

d). None

12. One of the following refers to reproductive branch of rhizopus

a). Sporangiospore

b). Sporangium

c). Stolon

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- d). All
13. The inner dome shaped structure that bursts the wall of sporangium is called
- a). Mycelum
 - b). Promycelium
 - c). Columella
 - d). All
14. The sexual way of reproduction in fungi is
- a). Spore formation
 - b). Conjugation
 - c). Budding
 - d). All
15. The mushrooms that are poisonous are called
- a). Toadstool
 - b). Death stool
 - c). Yeast
 - d). Both a&b
16. One of following is antibiotic taken from fungi
- a). Penicillin
 - b). Chloromycetin
 - c). Neomycin
 - d). All of above

KEYS

- 1. A
- 2. B
- 3. C
- 4. C
- 5. A
- 6. D
- 7. D

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- | | |
|-----|---|
| 8. | C |
| 9. | A |
| 10. | C |
| 11. | B |
| 12. | A |
| 13. | C |
| 14. | D |
| 15. | D |
| 16. | D |