MISSION M.B.BS

Date: 27/06/2022

Subject: BOTANY

Topic : BIOLOGICAL CLASSIFICATION - L7

Class: Standard XI

Instructions:

A

1. Which class of fungi do yeast and *Penicillium* belong to?

   ✔ **A.** Ascomycetes

   ✘ **B.** Basidiomycetes

   ✘ **C.** Zygomycetes

   ✘ **D.** Oomycetes

   Ascomycetes or the cup fungi are characterized by the cup shaped fruiting body called the ascus which produces ascospores. They are saprophytic, decomposers, parasitic or coprophilous (growing on dung). It includes both unicellular forms like yeast and multicellular forms like *Penicillium*.

2. Which mode of nutrition is found in *Rhizopus*, yeast, and *Penicillium*?

A. Parasitic

B. Saprophytic

C. Symbiotic

D. Autotrophic

Fungi are achlorophyllous and hence their mode of nutrition is heterotrophic. They are either parasitic, saprophytic or symbiotic. Mode of nutrition in *Rhizopus*, yeast and *Penicillium* is saprophytic. In saprophytic nutrition, the organism feeds on dead and decaying organisms.

Parasitic nutrition has the organism feeding on a live host, causing harm to the host. Example: *Albugo.*

In symbiotic nutrition, there is a mutual give and take relationship between two organisms and both are benefited. Example: Lichens which comprise a fungus living in a symbiotic relationship with an alga or cyanobacterium.

Plants are autotrophic organisms. Autotrophs are those organisms that can synthesize their own food as we see in green plants. Through photosynthesis they trap sunlight and convert it into chemical energy in the form of ATP and use this energy to fix atmospheric carbon dioxide into a carbohydrate.

3. Bottle shaped structures that bear conidia in *Penicillium* are called

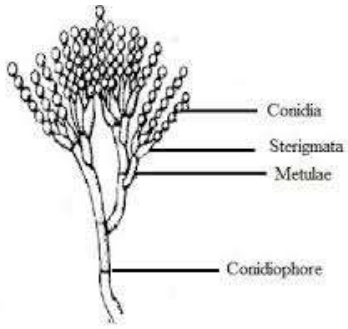
A. metulae

B. sterigmata

C. paraphyses

D. hyphae

In *Penicillium*, the conidiospores/conidia are produced exogenously on structures called sterigmata. The sterigmata are considered to be the fertile structures found on the conidiophores.



The metulae are the structures which bear the sterigmata.
Paraphyses are fertile filaments found between the reproductive organs in fungi.

4. A good example of heterothallism can be seen in

A. *Puccinia*

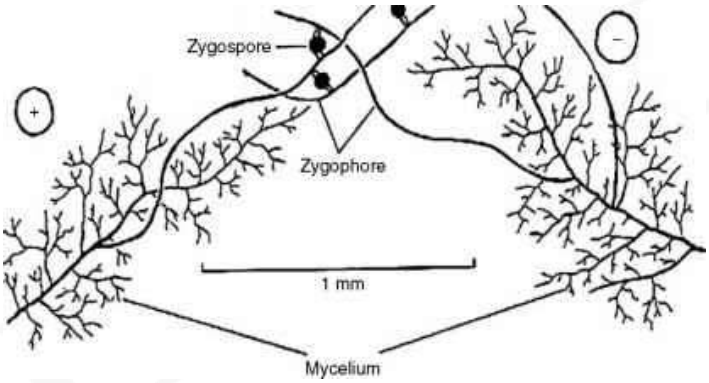
B. *Rhizopus*

C. *Pinus*

D. castor bean

Heterothallism is observed in *Rhizopus*. Heterothallism is the condition in which formation of sexual spores takes place when two genetically different mating types, (+) and (-), are allowed to interact. Heterothallic fungi require two compatible partners to produce sexual spores.

Heterothallism



5. Which among the following is a phase of the sexual reproduction in fungi?

A. Plasmogamy

B. Karyogamy

C. Meiosis

D. All of the above

Sexual reproduction in fungi involves three steps - plasmogamy, karyogamy and meiosis. It starts with the fusion of the protoplasm (plasmogamy) between two cells and results in a dikaryotic phase with two nuclei in a cell. This is followed by karyogamy where the two nuclei fuse together to form a diploid zygote. This, then undergoes meiosis to form four haploid spores.

6. Which among the following is the most common type of fungal disease that we see in humans?

- **A.** Cholera
- **B.** Typhoid
- **C.** Plague
- **D.** Ringworm

Trichophyton, *Microsporum*, and *Epidermophyton* are the most common genera of fungi that cause ringworm in humans. Ringworm is a fungal infection of the skin. Ringworm is a misnomer, since a fungus, not a worm, causes the infection. The lesion caused by this infection resembles a worm in the shape of a ring, hence the name ringworm is given.

Cholera is caused by the bacterium *Vibrio cholerae*.
Typhoid is caused by bacterium *Salmonella typhi*.
Plague is caused by bacterium *Yersinia pestis*.

7. Which among the following is known to produce aflatoxin?

- **A.** *Agaricus*
- **B.** *Saccharomyces* species
- **C.** *E. coli*
- **D.** *Aspergillus flavus*

Aflatoxin is a toxin produced by fungi such as *Aspergillus flavus* and *Aspergillus parasiticus* when it infects plants like the peanut plant. This toxin when consumed by humans is known to cause cancer of the liver.

8. Causative agent of late blight in potatoes is

A. *Agaricus campestris*

B. *Albugo candida*

C. *Saccharomyces cerevisiae*

D. *Phytophthora infestans*

Late blight of potato and tomato plants are caused by *Phytophthora infestans*. It infects and destroys the leaves, stems, fruits, and tubers of the plants. *Phytophthora infestans* belong to the class oomycetes (phycomycetes).

9. What is the stored food in fungal cells?

A. Starch

B. Glucose

C. Sucrose

D. Glycogen

Fungi store food in the form of glycogen, along with oil bodies. Reserve food varies in different species. It can be in various forms of carbohydrates, such as fructose, sucrose or starch in plants and as glycogen in animals and fungi.

10. What is the edible part of the mushroom?

- ✔ **A.** Basidiocarp
- ✘ **B.** Primary mycelium
- ✘ **C.** Fungal hyphae
- ✘ **D.** Basidiospores

The fungal body in basidiomycetes is made up of a number of white thread-like structures called hyphae. A bunch of hyphae are called mycelia. Basidiospores are the spores formed in the basidia (spore-bearing structure) during reproduction and the basidia are arranged in fruiting bodies called basidiocarps. The basidiocarp forms the edible part of the mushroom. *Agaricus bisporus* (button mushrooms) is the most common type of edible mushroom.