

Possible questions in Advanced Mycology:

- 1- The reproductive structures produced by fungi are exceedingly important.
- 2- Identification of fungi based almost entirely upon the morphology of the reproductive structures but the application of the techniques of modern molecular biology to the study of fungi is also imperative.
- 3- Why many fungi remain unidentified?
- 4- What are the main functions of fungal systematics?
- 5- What does it mean by hierarchical system of classification?
- 6- What is the purpose of creating phylogenetic trees?
- 7- Mention why molecular methods more advantageous over traditional classification in fungi?
- 8- Why molecular taxonomy is complementary to traditional taxonomy?
- 9- Chytrids are considered the most primitive fungi?
- 10- Why are some fungi named conjugated fungi?
- 11- What are the characters of sac fungi?
- 12- What are the shared characters of Ascomycota and Basidiomycota?
- 13- What are the characters of club fungi?
- 14- What does it mean by propagules in fungi? What are they including?
- 15- What is anamorph and teleomorph? What is form phylum in fungi?
- 16- What are the key-steps of sexual reproduction?
- 17- What are the differences between sexual and asexual reproduction in fungi?
- 18- What are Homothallic fungi and heterothallic fungi?

- 19- What is compatibility and incompatibility in sexual reproduction in fungi?
- 20- What does it mean by mating types ?
- 21- What is ascocarp? What are the types of ascocarps?
- 22- What does it mean that dikaryotic phase dominates the life cycle of the basidiomycetes?
- 23- What is basidium? What is Holobasidia and heterobasidia?
- 24- What is basidiocarp? What time they are produced?
- 25- What is the Complexity life cycles means in fungi? Give examples.
- 26- What are meiospores and mitospores in fungi?
- 27- Some spores, like chlamydospores, are not considered reproductive structures?
- 28- Compared to spores, conidia are produced exogenously, what is this means?
- 29- What serve as propagules in Glomeromycota?
- 30- Mention why the asexual reproduction of Ascomycetes is very diverse from both structural and functional points of view?
- 31- Mention why Asexual reproduction, especially asexual spore production is less important in Basidiomycota (except of rust and smut fungi) than in Ascomycota?
- 32- Explain how fungi play a vital role in balancing ecosystems?
- 33- What does it mean by saying fungal associations? Mention these associations briefly.
- 34- What is Programmed cell death (PCD)? How it occurs?

- 35- What is metabolism? What does it mean by primary and secondary metabolism in Fungi?
- 36- What is Primary and secondary metabolites in fungi? Give examples.
- 37- Explain what are the roles of SMs in fungal life?
- 38- Compare necrotrophic fungi with that of biotrophic fungi.
- 39- Compare plant pathogenic fungi with symbiotic fungi.
- 40- Compare necrotrophic, biotrophic and hemi-biotrophic fungi with each other.
- 41- What are the differences between necrotrophic and biotrophic fungi in Infection strategy?
- 42- What are the Stimuli in fungi? What do they include?
- 43- Mention how Environmental factors play as stimuli in fungal life?
- 44- What are fungal phytotoxins? What are the types of phytotoxins? What are their properties?
- 45- What are systemic acquired resistance (SAR) and induced systemic resistance (ISR)? Mention the differences between them.
- 46- What are Phytoalexins? Mention how they work as antifungal compounds?
- 47- Mention how plants communicate with rhizosphere microbes such as arbuscular mycorrhiza?
- 48- Besides the taxonomical benefits, what are the benefits of diversity of fungal spores?
- 49- Why mycologists say: Almost all spores are dormant?

- 50- Compare fungal spores with that of fungal somatic cells.
- 51- What are the factors of constitutive dormancy?
- 52- What are the differences between constitutive dormancy and exogenously imposed dormancy?
- 53- What is fungistasis (or mycostasis)? Is considered a type of dormancy? Explain how?
- 54- What are triggers of fungal growth? What are the types of triggers?
- 55- What does it mean by insect-dispersed fungi? Mention the properties of spores that dispersed by insects?
- 56- What does it mean by aquatic dispersed fungi? Mention the properties of spores that dispersed by water?
- 57- What are the differences between zoospores and stationary (non-motile) spores?
- 58- What does it mean by sensitivity of zoospores to lysis? Why this happen?
- 59- Mention the importance of airborne spores in fungal dispersal and their significance in plant pathology.
- 60- What the major steps of airborne of spore dispersal? Describe each briefly.
- 61- What the fungal genome components? Mention them with their role briefly.
- 62- What is hyphal anastomosis? mention the advantages of hyphal anastomosis.
- 63- Mention the sources of genetic variation in fungi.

- 64- What does it mean by heterokaryosis in fungi? Mention how this happens in fungi?
- 65- What does it mean by heterokaryosis in fungi? Mention how this happens in fungi? Mention how the phenomenon breaks down?
- 66- What is parasexuality in fungi? Mention how this happen? Can it be considered as a source of genetic variation in fungi?
- 67- What is parasexuality in fungi? What are the stages of parasexuality in fungi?
- 68- What is parasexuality in fungi? What is the significance of parasexuality?
- 69- What are model organisms? Mention the most important fungal genera that are dedicated as model organisms and mention why they are selected.
- 70- Define the following:
- a. Hybrid metabolites
  - b. Ballistic spore dispersal
  - c. Hyphal anastomosis
  - d. ...