

EXAM 2
March 30, 2004
BIO 329

Directions: All explanations, definitions, and descriptions should be presented in good English. This means complete sentences should be used except when lists or fill-in-the-blanks are required. Spelling of mycological terms should be accurate. Slight misspellings may be overlooked, but major misspellings will result in wrong answers.

1. Multiple choice (20 pts at 2 pts each); circle the number of the correct choice.
 - a. One agent of a "superficial mycosis" is lipophilic. That fungus is
 1. *Trichosporon hortae*
 2. *Exophiala/Hortaea werneckii*
 3. *Trichophyton tonsurans*
 4. *Malassezia furfur*
 5. none of the above choices
 - b. No dermatophyte is currently included in the form-genus
 1. *Achorion*
 2. *Epidermophyton*
 3. *Microsporum*
 4. *Trichophyton*
 5. none of the above choices
 - c. *Piedraia hortae*
 1. is a dermatophyte
 2. produces ascomata/ascocarps on hair
 3. is a basidiomycete
 4. produces dolipore-type septa
 5. is none of the above choices
 - d. For technical reasons, some so-called tineas are not really dermatophytoses. One such tinea is
 1. tinea pedis
 2. tinea favosa
 3. tinea unguium
 4. tinea nigra
 5. tinea imbricata

- e. One of the following is not a dematiaceous agent of medical relevance. That agent is
1. *Maderella mycetomatis*
 2. *Hortaea/Exophiala werneckii*
 3. *Phialophora verrucosa*
 4. *Malassezia furfur*
 5. *Wangiella/Exophiala dermatitidis*
- f. Pityriasis versicolor is often said to be caused by a/an
1. enteroblastic, phialidic yeast
 2. enteroblastic, annelidic yeast
 3. loculoascomycete
 4. member of the Onygenales
 5. none of the above choices
- g. Current molecular evidence suggests that the agent of sporotrichosis is most likely a member of the class
1. Hemiascomycetes
 2. Loculoascomycetes/Chaetothyriomycetes
 3. Plectomycetes
 4. Pyrenomycetes
 5. none of the above choices
- h. In the United States today, it seems that the most common agent of tinea unguium is probably
1. *Trichophyton rubrum*.
 2. *Trichophyton schoenleinii*.
 3. *Trichophyton tonsurans*.
 4. *Trichophyton concentricum*
 5. none of these choices
- i. Massive crusts of scutula, hyphae and epithelium are most associated with
1. tinea unguium.
 2. tinea pedis.
 3. tinea imbricata.
 4. tinea favosa.
 5. none of the above choices.
- j. A number of dematiaceous fungi are known to cause infrequent infections of the brain. A list of those fungi would probably not include
1. *Maderella mycetomatis*.
 2. *Wangiella/Exophiala dermatitidis*.
 3. *Cladophialophora/Xylohypha bantiana*.
 4. *Phialophora verrucosa*.
 5. any of the above choices.

2. Fill in the blanks (30 pts at 2 pts each).

- a. The full chemical name for the type of melanin produced by *Wangiella (Exophiala) dermatitidis*, and many other dematiaceous fungal pathogens of humans is _____.
- b. The fluorescent lamp that emits at ~364 nm and is used for the detection of some scalp ringworms is called the _____.
- c. The systemic type of mycosis caused by the agent of white piedra is termed _____.
- d. The outermost layer of the epidermis, which serves as the substrate for growth of some superficial and dermatophytic fungi, is the _____.
- e. The most characteristic in vivo growth form observed in human subcutaneous tissue of an agent of chromoblastomycosis is the _____.
- f. *Cladophialophora/Xylohypha bantiana* is usually only associated with the mycosis termed _____.
- g. A fingernail or toenail infection caused by a dermatophyte is clinically termed _____.
- h. Gymnothecia are characterized microscopically as being hyphal aggregate structures of the _____ plectenchyma-type.
- i. Although most dermatophytic fungi are asexual, as far as we know, those that are sexual are all included in the teleomorphic genus _____.
- j. Radiating eosinophilic substances that sometimes surround yeast cells and stain in a sunburst pattern in tissue sections of cutaneous sporotrichosis are known pathologically as _____.
- k. A dermatophytosis of the groin and periannal regions of the human body is known clinically as _____.
- l. The superficial mycotic condition that is usually associated with beard, axilla and pubic hair is known clinically as _____.
- m. When the hyphae of a dermatophyte fragments into holoarthric thalloconidia in scalp hair, the hair colorization type is said to be _____.
- n. The specialized type of tinea corporis caused by *Trichophyton concentricum* is known clinically as _____.
- o. The life-threatening systemic mycosis caused by the most common agent of white grain mycetoma known clinically as _____.

3. Short answers/definitions (20 pts at 4 pts each) in only one or two complete sentences with subjects and verbs.

a. The "subcutaneous mycoses" _____

b. Trichosporonosis _____

c. Phaeohyphomycosis _____

d. Chromoblastomycosis _____

e. Lymphocutaneous sporotrichosis _____

4. **Essays:** Below please find two exam topics for you to respond to in essay fashion (see comments on page 1 about sentences and spelling). Please provide your responses on the attached lined sheets. If you write normal size, then your responses should be about one page long for each essay. Should you need additional space just use the backs of each lined page, or other pages of the exam.

A. Essay 1 (15 pts). Please compare and contrast the mycotic conditions of human skin that are termed "superficial mycoses" with those that are termed "dermatophytoses." Your answer should focus exclusively on conditions of the skin. It should also not include an extensive discussion of the fungi involved beyond possibly the mention of a few names as you think appropriate. Instead focus your answer on the nature of the conditions themselves as might be helpful in diagnosis or in assuring patients or acquaintances that the conditions, although possibly not attractive, are not usually serious.

B. Essay 2 (15 pts). Although only poorly known, even among professional medical mycologists and biologists who study medically important fungi, the so-called dematiaceous pathogenic fungi have significant relevance to medical mycology. Describe the nature of the dematiaceous fungi, their general taxonomy, and then describe why they should be discussed in a medical mycology course, in spite of the fact that each fungus causes only relatively few cases of mycosis.