

MYCOLOGY PRACTICE EXAM (SAMPLE)

STUDY GUIDE



SAMPLE STUDY GUIDE WITH LIMITED QUESTIONS

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Introduction

Preparing for a certification exam can feel overwhelming, but with the right tools, it becomes an opportunity to build confidence, sharpen your skills, and move one step closer to your goals. At Examzify, we believe that effective exam preparation isn't just about memorization, it's about understanding the material, identifying knowledge gaps, and building the test-taking strategies that lead to success.

This guide was designed to help you do exactly that.

Whether you're preparing for a licensing exam, professional certification, or entry-level qualification, this book offers structured practice to reinforce key concepts. You'll find a wide range of multiple-choice questions, each followed by clear explanations to help you understand not just the right answer, but why it's correct.

The content in this guide is based on real-world exam objectives and aligned with the types of questions and topics commonly found on official tests. It's ideal for learners who want to:

- Practice answering questions under realistic conditions,
- Improve accuracy and speed,
- Review explanations to strengthen weak areas, and
- Approach the exam with greater confidence.

We recommend using this book not as a stand-alone study tool, but alongside other resources like flashcards, textbooks, or hands-on training. For best results, we recommend working through each question, reflecting on the explanation provided, and revisiting the topics that challenge you most.

Remember: successful test preparation isn't about getting every question right the first time, it's about learning from your mistakes and improving over time. Stay focused, trust the process, and know that every page you turn brings you closer to success.

Let's begin.

How to Use This Guide

This guide is designed to help you study more effectively and approach your exam with confidence. Whether you're reviewing for the first time or doing a final refresh, here's how to get the most out of your Examzify study guide:

1. Start with a Diagnostic Review

Skim through the questions to get a sense of what you know and what you need to focus on. Your goal is to identify knowledge gaps early.

2. Study in Short, Focused Sessions

Break your study time into manageable blocks (e.g. 30 – 45 minutes). Review a handful of questions, reflect on the explanations.

3. Learn from the Explanations

After answering a question, always read the explanation, even if you got it right. It reinforces key points, corrects misunderstandings, and teaches subtle distinctions between similar answers.

4. Track Your Progress

Use bookmarks or notes (if reading digitally) to mark difficult questions. Revisit these regularly and track improvements over time.

5. Simulate the Real Exam

Once you're comfortable, try taking a full set of questions without pausing. Set a timer and simulate test-day conditions to build confidence and time management skills.

6. Repeat and Review

Don't just study once, repetition builds retention. Re-attempt questions after a few days and revisit explanations to reinforce learning. Pair this guide with other Examzify tools like flashcards, and digital practice tests to strengthen your preparation across formats.

There's no single right way to study, but consistent, thoughtful effort always wins. Use this guide flexibly, adapt the tips above to fit your pace and learning style. You've got this!

Questions

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- 1. Which organism is described as causing mucocutaneous infection that may disseminate?**
 - A. *Candida albicans*
 - B. *Histoplasma capsulatum*
 - C. *Aspergillus fumigatus*
 - D. *Penicillium marneffe*

- 2. In laboratory safety, what is the recommended containment for handling mold cultures and clinical specimens?**
 - A. All mold cultures and clinical specimens must be handled in a class II BSC
 - B. Keep pathogenic isolates sealed
 - C. Wear gloves
 - D. Work in a fume hood

- 3. Which cryptococcal meningitis emphasis is correct in HIV patients?**
 - A. The treatment is always antifungal monotherapy.
 - B. The standard induction therapy involves liposomal amphotericin B plus flucytosine.
 - C. Fluconazole alone is recommended for induction.
 - D. Echinocandins are first-line for induction.

- 4. *Cryptococcus neoformans* causes which infection?**
 - A. Cryptococcosis
 - B. Coccidioidomycosis
 - C. Blastomycosis
 - D. Sporotrichosis

- 5. What equipment is used in the tease mount technique?**
 - A. Inoculation loop
 - B. Dissecting needles
 - C. Microscope
 - D. Scalpel

- 6. Which of the following is a dematiaceous fungus?**
- A. *Fonsecaea pedrosoi*
 - B. *Candida albicans*
 - C. *Aspergillus fumigatus*
 - D. *Rhizopus oryzae*
- 7. Which statement about fungal reproduction is correct?**
- A. Reproduces only by binary fission
 - B. Reproduces by fragmentation
 - C. Spores produced sexually or asexually
 - D. Pollination is required
- 8. Which pigment characterizes dematiaceous fungi?**
- A. No pigmentation
 - B. Green pigmentation
 - C. Pigmented dark
 - D. Red pigmentation
- 9. Which statement about fungi best describes them?**
- A. They are a parasitic plant
 - B. They are a kingdom of plantlike spore-forming organisms lacking roots, stems, leaves, and photosynthetic pigments
 - C. They are photosynthetic and have chloroplasts
 - D. They are primarily bacteria-like colonies
- 10. Systemic (deep) mycoses are typically acquired by inhalation of spores from what source?**
- A. Water
 - B. Food
 - C. Direct skin contact
 - D. Soil fungi

Answers

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1. D
2. A
3. B
4. A
5. B
6. A
7. C
8. C
9. B
10. D

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Explanations

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1. Which organism is described as causing mucocutaneous infection that may disseminate?

- A. *Candida albicans*
- B. *Histoplasma capsulatum*
- C. *Aspergillus fumigatus*
- D. *Penicillium marneffei***

The concept being tested is how certain fungal pathogens initiate disease on mucosal or skin surfaces and have the potential to spread throughout the body in people with weakened immunity. *Penicillium marneffei* is a classic example: it causes *Penicillium marneffei* infection (penicilliosis) with mucocutaneous lesions and has a real tendency to disseminate to internal organs such as the liver, spleen, and bone marrow in affected individuals, especially those with advanced HIV/AIDS. This combination of mucocutaneous involvement plus possible systemic spread in an immunocompromised host is the hallmark that makes it the best choice for this question. *Candida albicans* can cause mucocutaneous infections and, in severely immunocompromised patients, can disseminate as candidemia, but the scenario described in the question is most characteristic of the disseminating mucocutaneous pattern seen with *Penicillium marneffei*. *Histoplasma capsulatum* and *Aspergillus fumigatus* are more commonly associated with pulmonary or systemic infections without the same emphasis on mucocutaneous lesions that readily disseminate.

2. In laboratory safety, what is the recommended containment for handling mold cultures and clinical specimens?

- A. All mold cultures and clinical specimens must be handled in a class II BSC**
- B. Keep pathogenic isolates sealed
- C. Wear gloves
- D. Work in a fume hood

The essential idea is using a containment system that actively protects both the technician and the work from aerosols generated during handling of mold cultures and clinical specimens. A Class II biosafety cabinet fits this need because it encloses the work area, maintains inward airflow, and uses HEPA filtration on both intake and exhaust. This setup captures and removes airborne spores and pathogens as you manipulate materials, reducing the chance of exposure and environmental contamination while also protecting the specimen from outside contamination. Gloves are important PPE but don't provide containment on their own. A fume hood is designed for chemical fumes, not biosafety containment, so it doesn't reliably control biological aerosols. Merely sealing pathogenic isolates isn't sufficient for ongoing work, since routine manipulations can generate aerosols that could escape.

3. Which cryptococcal meningitis emphasis is correct in HIV patients?

- A. The treatment is always antifungal monotherapy.
- B. The standard induction therapy involves liposomal amphotericin B plus flucytosine.**
- C. Fluconazole alone is recommended for induction.
- D. Echinocandins are first-line for induction.

In HIV-associated cryptococcal meningitis, the goal of induction therapy is rapid, potent fungal clearance from the CSF to reduce mortality. The best approach is a combination that pairs a potent fungicidal agent with a complementary antifungal: liposomal amphotericin B plus flucytosine, typically given for about two weeks. Liposomal amphotericin B disrupts the fungal cell membrane, while flucytosine enters the fungal cells and inhibits DNA and RNA synthesis; together they work synergistically to speed clearance of Cryptococcus from the CSF, which improves survival compared with either drug alone. After this induction phase, patients usually transition to consolidation with fluconazole and then maintenance therapy. Why the other options aren't correct for induction: using an antifungal alone (monotherapy) is less effective in wiping out the infection quickly; fluconazole alone is slower and less fungicidal, so it's not the recommended induction regimen; echinocandins have poor activity against Cryptococcus and don't achieve effective CSF levels, so they aren't first-line for induction.

4. Cryptococcus neoformans causes which infection?

- A. Cryptococcosis**
- B. Coccidioidomycosis
- C. Blastomycosis
- D. Sporotrichosis

Cryptococcus neoformans causes cryptococcosis. This organism is an encapsulated yeast that is inhaled into the lungs and, especially in people with weakened immune systems, can disseminate and infect the meninges, leading to cryptococcal meningitis. Clinically, cryptococcosis is often diagnosed by detecting cryptococcal antigen in serum or CSF, or by showing the capsule with stains like India ink or mucicarmine. Exposure is commonly associated with bird droppings, particularly pigeons. The other fungi listed cause different diseases: the one causing coccidioidomycosis is Coccidioides, the one causing blastomycosis is Blastomyces, and the one causing sporotrichosis is Sporothrix.

5. What equipment is used in the tease mount technique?

- A. Inoculation loop
- B. Dissecting needles**
- C. Microscope
- D. Scalpel

Tease mount is a slide preparation method used to observe delicate fungal hyphae and structures by gently separating a small amount of specimen in a mounting fluid. The tool needs to be fine and precise to tease apart filaments without tearing them, so a dissecting needle is the best fit. Its slender, sharp point lets you pick up a tiny amount of material and tease apart strands to create a spread that can be clearly seen under the microscope, revealing features like septa or spores in their natural arrangement. An inoculation loop is designed for transferring material, not for coaxing apart and spreading delicate hyphae. A scalpel is useful for cutting but is too blunt and risks damaging the structures you want to observe. The microscope is essential for viewing after the mount is prepared, but the actual preparation action—teasing apart the hyphae—is performed with a fine instrument like a dissecting needle.

6. Which of the following is a dematiaceous fungus?

- A. Fonsecaea pedrosoi
- B. Candida albicans
- C. Aspergillus fumigatus
- D. Rhizopus oryzae

Dematiaceous fungi are pigmented because they have melanin in their cell walls, giving dark brown to black appearances in tissue and culture. *Fonsecaea pedrosoi* is a classic example and is well known for causing chromoblastomycosis, with pigmented hyphae that reflect this melanin-containing nature. In contrast, *Candida albicans* is a colorless yeast that forms budding cells and pseudohyphae, not pigmented; *Aspergillus fumigatus* is a hyaline mold with colorless to pale green spores and lacks melanin-based pigmentation; *Rhizopus oryzae* also shows nonpigmented, broad, nonseptate hyphae. So the pigment-producing organism among them is *Fonsecaea pedrosoi*.

7. Which statement about fungal reproduction is correct?

- A. Reproduces only by binary fission
- B. Reproduces by fragmentation
- C. Spores produced sexually or asexually
- D. Pollination is required

Fungi rely on spores as their main means of reproduction, and these spores can be produced through both asexual and sexual processes. This dual capability explains why the statement that spores are produced sexually or asexually is the best description: many fungi form spores by mitosis during asexual reproduction (such as conidia or sporangiospores in molds) and also produce spores after meiosis during sexual reproduction (such as ascospores in ascomycetes or basidiospores in basidiomycetes). This versatility in spore production underpins their ability to spread and survive in varied environments. Reproducing only by binary fission isn't accurate for fungi, since that method is typical of bacteria and some single-celled yeasts show budding rather than binary fission. Fragmentation can occur in some species as a reproductive mode, but it isn't universal across fungi. Pollination is a plant process and isn't used by fungi for reproduction.

8. Which pigment characterizes dematiaceous fungi?

- A. No pigmentation
- B. Green pigmentation
- C. Pigmented dark
- D. Red pigmentation

Dematiaceous fungi contain melanin in their cell walls, giving dark brown to black pigmentation of colonies and of fungal elements in tissue. This dark pigment is the defining feature, distinguishing them from colorless or pale fungi. Green or red colors aren't characteristic of this group, and the lack of pigmentation would describe other fungi.

9. Which statement about fungi best describes them?

- A. They are a parasitic plant
- B. They are a kingdom of plantlike spore-forming organisms lacking roots, stems, leaves, and photosynthetic pigments**
- C. They are photosynthetic and have chloroplasts
- D. They are primarily bacteria-like colonies

Fungi are a distinct kingdom of eukaryotic, heterotrophic organisms that obtain nutrients by absorbing dissolved organics from their surroundings. They do not photosynthesize, so they lack chloroplasts and pigments used to capture light. Their growth form is filamentous, with hyphae forming a mycelium, and they commonly reproduce by spores for dispersal. The description that presents them as plantlike, spore-forming organisms that lack roots, stems, leaves, and photosynthetic pigments captures these defining features: they resemble plants in growth form but are not autotrophic, and their mode of reproduction relies on spores. This sets them apart from plants (which are photosynthetic and have roots, stems, and leaves) and from bacteria (which are prokaryotic and not organized into hyphae and mycelia).

10. Systemic (deep) mycoses are typically acquired by inhalation of spores from what source?

- A. Water
- B. Food
- C. Direct skin contact
- D. Soil fungi**

*Systemic fungal infections reach deep tissues after spores are inhaled from the environment. The main reservoir for these fungi is soil, where spores become airborne when the soil is disturbed, allowing breathing in of them into the lungs. From the lungs, the organisms can spread through the bloodstream to other organs, especially in people with weaker immune systems. Examples include *Histoplasma capsulatum* in soil rich with bird or bat guano, *Coccidioides* species in arid desert soils, and *Blastomyces dermatitidis* in moist, decaying organic matter. Water or food aren't the typical sources for these infections, and direct skin contact tends to cause localized infections rather than a systemic, disseminated disease.*

Next Steps

Congratulations on reaching the final section of this guide. You've taken a meaningful step toward passing your certification exam and advancing your career.

As you continue preparing, remember that consistent practice, review, and self-reflection are key to success. Make time to revisit difficult topics, simulate exam conditions, and track your progress along the way.

If you need help, have suggestions, or want to share feedback, we'd love to hear from you. Reach out to our team at hello@examzify.com.

Or visit your dedicated course page for more study tools and resources:

<https://mycology.examzify.com>

We wish you the very best on your exam journey. You've got this!

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