

## Assignments for Microscopy & Eukaryotic Microorganisms

### Microscopy MCQs

- 1. Which type of microscope is most commonly used in a clinical laboratory?**
  - A) Transmission electron microscope
  - B) Scanning electron microscope
  - C) Compound light microscope
  - D) Fluorescence microscope

✔ **Correct Answer: C**
- 2. Which part of the microscope adjusts the amount of light passing through the specimen?**
  - A) Coarse focus knob
  - B) Objective lens
  - C) Iris diaphragm
  - D) Eyepiece

✔ **Correct Answer: C**
- 3. What is the total magnification when using a 10x ocular lens and a 40x objective lens?**
  - A) 50x
  - B) 400x
  - C) 100x
  - D) 10x

✔ **Correct Answer: B**
- 4. Why is immersion oil used with the 100x objective lens?**
  - A) To cool the lens
  - B) To increase contrast
  - C) To reduce light refraction and improve resolution
  - D) To disinfect the slide

✔ **Correct Answer: C**
- 5. Which type of microscopy is best for observing living, unstained microorganisms?**
  - A) Electron microscopy
  - B) Brightfield microscopy
  - C) Darkfield microscopy
  - D) Phase-contrast microscopy

✔ **Correct Answer: D**

### Eukaryotes

1. What are the key structural differences you can observe between eukaryotic microorganisms (such as protozoa, fungi, or algae) and prokaryotic cells under the microscope? How do features like the nucleus, cell size, or organelles help in distinguishing them?

2. Choose one type of eukaryotic microorganism (e.g., *Candida*, *Amoeba*, or *Paramecium*) that you've viewed in lab. What structures were visible, and how do they relate to the organism's function or movement?

3. When viewing *Candida albicans* under the microscope, which structure would you most likely observe?

- A. Endospores
- B. Hyphae or budding yeast cells
- C. Flagella
- D. Chloroplasts

Correct Answer: B. Hyphae or budding yeast cells

4. What stain is commonly used to help visualize the nuclei of eukaryotic microorganisms?

- A. Crystal violet
- B. Safranin
- C. Methylene blue
- D. Gram's iodine

Correct Answer: C. Methylene blue

5. Which of the following eukaryotic microorganisms moves using cilia and is often observed in wet mounts?

- A. *Amoeba proteus*
- B. *Candida albicans*
- C. *Paramecium caudatum*
- D. *Plasmodium falciparum*

Correct Answer: C. *Paramecium caudatum*

Extra. Why is oil immersion used when viewing microorganisms at 1000x total magnification?

- A. To stain the specimen more clearly
- B. To protect the lens from drying
- C. To reduce light refraction and improve image clarity
- D. To disinfect the slide

Correct Answer: C. To reduce light refraction and improve image clarity