

Microbiology Study Guide
C3 / Observing Microorganisms through a Microscope

1. What metric unit is used to describe microbes?
2. What metric unit is used to describe virus and small molecules?
3. Diagram the path of light through a compound microscope.
4. What is microscopic resolution? What does it mean when a microscope has a resolution of 0.2 nm?
5. Why is the resolution of an electron microscope better than the resolution of a compound light microscope?
6. Why do we stain bacteria?
7. Why is fixing necessary for most staining procedures?
8. What is the difference between an acid dye and a base dye? Why does a basic stain color a cell?
9. What type of staining procedure is used to observe the bacteria's size, shape, and capsules?
10. What are the three types of staining techniques? What is the purpose of each technique?
11. What is the significance of differential staining?
12. How is the Gram stain used to differentiate between two important type of bacteria?
13. What are the steps in preparing a Gram stain? What does this technique tell us about the microbe if the procedure is positive or negative?
14. What types of bacteria are indicated by the acid-fast stain? What is characteristic of the bacteria that allow the acid-fast stain to color the bacteria?
15. What type of structures can be identified using special stains?