

Microbiology Lab 3051 (Spring 2016)
Mid-Term Laboratory Exam
Study Guide
Labs 1 - 5

Objectives:

1. Know the parts of the microscope and their functions.
2. Know how to use the microscope (adjusting for proper viewing, getting an image in focus, using oil immersion) and how to take care of a microscope.
3. Describe aseptic technique and understand why it is important.
 - a. Aseptic Technique: sterilize inoculating loop by holding it over flame of Bunsen burner → flame mouth of tube → insert loop → remove loop → flame mouth → cap tube
 - b. Insures that no contaminating organisms are introduced into culture materials when the latter are inoculated or handled in some manner.
 - c. Insures that organisms are being handled do not contaminate the handler or others who may be present.
4. Compare and contrast how to make a bacterial smear from liquid media and solid media.
 - a. Liquid Media – two loopfuls of liquid containing organisms are placed in the center of the “target circle” → organisms are dispersed over entire area of “target circle” → the smear is allowed to dry at room temperature → slide is passed through flame several times to heat-kill and fix organisms to slide.
 - b. Solid Media – two loopfuls of water are placed in center of “target circle” → a very small amount of organisms is dispersed with inoculating loop in water over entire area of “target circle” → the smear is allowed to dry at room temperature → slide is passed through flame several times to heat-kill and fix organisms to slide.
5. Explain the importance of heat fixing and air-drying specimens on slides.
 - a. Heat-fixing
 - b. Air-drying
6. Distinguish between acidic and basic dyes and when to use each.
 - a. Basic dyes – dyes that have cationic chromophores
 - b. Acidic dyes – dyes that have anionic chromophores
7. Describe simple staining and what bacterial characteristics can be observed using this technique.
 - a. Simple staining – the use of a single stain to color a bacterial cell
 - b. Works well on bacteria that have color-bearing ions (chromophores) and are positively charged.
8. Recognize the different bacterial morphologies.
 - a. Bacilli – rods
 - i. Coccobacillus
 - ii. Bacilli
 - iii. Fusiform
 - b. Cocci – spherical
 - c. Spirals – curved rods
9. Understand the distribution of bacteria in our world.
 - a.
10. Compare and contrast gram-positive and gram-negative cells (what colors they stain using the Gram stain and how cell wall structure determines how they stain).

Microbiology Lab Midterm Study Guide

Cynthia Littlejohn



Microbiology Lab Midterm Study Guide:

Cornell University Courses of Study Cornell University,1992 *Critical Thinking and Reasoning* Daniel Fasko, Jr.,Frank Fair,2020-10-12 The Partnership for 21st Century Skills states that critical thinking encompasses skills that students and professionals will need to succeed in their careers school and life The demand for critical thinkers will increase in the future to meet the demands of world wide problems Educators need to show students how to eliminate errors such as biases in their reasoning and to be effective decision makers To do this teachers and leaders in schools and businesses need to provide an atmosphere conducive to developing critical thinking skills and dispositions Meeting this challenge is the goal of the chapters collected in *Critical Thinking and Reasoning* This book begins with experts laying out their best current understanding of the skills and attitudes critical thinking requires Next the relationship between critical thinking and the psychology of development and learning is explored to understand better how to develop critical thinkers from childhood to adulthood But how can we best teach for critical thinking How can we incorporate into the classroom the challenges presented in the workplace This book provides several extensive examples of current practices from the elementary level through the secondary level to the university level of how to stimulate critical thinking skills and dispositions **Index Medicus** ,2002 Vols for 1963 include as pt 2 of the Jan issue Medical subject headings [Japan English Publications in Print](#) ,1998 **Government Reports Announcements & Index** ,1992 [Government reports annual index](#) ,199?

MICROBIOLOGY LAB MANUAL. JANICE. SPESHOCK,2024 [General Microbiology Lab Manual](#) Littlejohn,2015-01-12 **Microbiology Lab Manual** Roger Lightner,Joshua Burns,2020-06-10 **Microbiology** Roger Lightner,2017-12-20 **Microbiology Lab Manual** Werner Williams,2017-07-31 **Laboratory Applications in Microbiology: A Case Study Approach** Barry Chess,2008-09-17 *Laboratory Applications in Microbiology A Case Study Approach* uses real life case studies as the basis for exercises in the laboratory This is the only microbiology lab manual focusing on this means of instruction an approach particularly applicable to the microbiology laboratory The author has carefully organized the exercises so that students develop a solid intellectual base beginning with a particular technique moving through the case study and finally applying new knowledge to unique situations beyond the case study

Microbiology Laboratory Manual Joe Maciaszek,Maura Driscoll,Monica Strzempko,2008-01-22 **General Microbiology** Cynthia Littlejohn,2018-11-09 *Basic and Practical Microbiology Lab Manual (Preliminary Edition)* Mette Ibba,Katherine Elasky,2016-08-15 *Microbiology Lab Manual* ,2018 **Molecular Microbiology Laboratory** Walt Ream,Bruce Geller,Katherine Field,2012-08-31 *Intends to teach principles and techniques of molecular biology and microbial ecology to upper level undergraduates majoring in the life sciences and to develop students scientific writing skills This title exposes students to the molecular based techniques It provides faculty with an accessible resource for teaching protocols* WorldCat **Microbiology Lab Manual** John Harley,2010-02-01 *Laboratory Exercises in Microbiology* 8 e has been

prepared to accompany Prescott's Microbiology 8e written by new authors Joanne Willey, Linda Sherwood, and Christopher Woolverton. Like the text, the laboratory manual provides a balanced introduction to laboratory techniques and principles that are important in each area of microbiology. **Microbiology: Pearson New International Edition** James G.

Cappuccino, Natalie Sherman, 2013-10-03 Versatile, comprehensive, and clearly written, this competitively priced laboratory manual can be used with any undergraduate microbiology text and now features brief clinical applications for each experiment. MasteringMicrobiology quizzes that correspond to each experiment and a new experiment on hand washing. Microbiology A Laboratory Manual is known for its thorough coverage, descriptive and straightforward procedures, and minimal equipment requirements. A broad range of experiments helps to convey basic principles and techniques. Each experiment includes an overview, an in-depth discussion of the principle involved, easy-to-follow procedures, and lab reports with review and critical thinking questions. Ample introductory material and laboratory safety instructions are provided.

Molecular Microbiology Laboratory Elsevier Science & Technology, Walt Ream, 2004-06 Molecular Microbiology Laboratory is designed to teach molecular biology techniques to upper-level undergraduates majoring in the life sciences. An extremely detailed lab preparation manual for teaching assistants accompanies the lab book and contains a general discussion of scientific writing and critical reading, as well as detailed instructions for preparation and peer review of lab reports. Each experimental unit is accompanied by a number of additional writing exercises based upon primary journal articles. The studies in these articles employ the techniques that the students are learning in the lab exercises, which reinforces their understanding of the material. These are techniques that students in any biological science will need to know, making this manual applicable to any life science curriculum. Key Features: Not a typical cookbook lab exercise, offers students the excitement and intellectual challenge of characterizing true unknowns. They could discover a new species. Success rate greater than 85% for the entire experiment, even with very inexperienced students. The ONLY manual that incorporates writing exercises into the curriculum. Co-authored by Dr. Janine Trempy, one of four senior editors of the Journal of Microbiology Education, published by the American Society for Microbiology.

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