

**Microbiology 2730
Study Guide #6
Winter Semester 2008
E. Hoffman**

LABORATORY SECTION

These questions relate to some of your laboratory meetings.

1. During the course of my comments on the negative stain, your attention was drawn to bacterial species that can be described as pleomorphic or monomorphic. What do these terms refer to?
2. You had the opportunity to view *Treponema pallidum*. This bacterium is the causative agent of human ____.
3. The above mentioned bacterium does have an overall “spiral shape” but does have an anatomy considerably different that a simple spiral shaped bacterium such as *Rhodospirillum rubrum*. It belongs to a group of bacteria known as the _____. These bacteria move without the use of flagella. These bacteria move through their environment by the movement of their so-called _____.
4. Your textbook indicates that there are 3 recognized stages of syphilis. What are they? According to your textbook, can the fetus be infected before birth with this bacterium.
5. Your textbook contends that syphilis is a tempting target for eradication efforts for two reasons. What are they? (see page 66)

LECTURE SECTION

1. If an object, fluid, or gas is sterile, what does this imply?
2. As you should remember, some time was spent discussing the so-called 12D treatment given certain canned food products. This treatment is an attempt to insure that the produce is free of the bacterium, which causes what dangerous condition? You should be able to explain the logic behind the 12 D treatment protection.

3. A few comments were made concerning how one might try to insure that your sterilization attempts were in fact doing the “job” in a situation such as a hospital environment. What were the two approaches that I noted?
4. One of the major approaches to sterilizing materials involves the use of heat. In class, you were introduced to 3 general means by which heat can be used. What were these approaches?
5. Which of the above mentioned approaches do you use in laboratory when you sterilize your inoculating loops or needles?
6. Dry heat involves using some type of ____ (equipment name) to essentially bake your materials in order to sterilize them.
7. Moist heat can be used in several different ways. Probably the most common approach involves the use of steam under pressure. The device that is commonly employed in this approach is called the ____.
8. How do the temperatures and times required from dry heat sterilization compare to those involving moist heat sterilization?
9. You were introduced to the process of Tyndallization or fractional sterilization. What type of heat is used in the process? You should be able to describe what action the initial steaming has, the storage phase, and the resteam process. This process has its uses when you are dealing with what types of objects or fluids?
10. Another entirely different approach to the sterilization of materials makes use of chemical agents. Probably the most common substance used to chemically sterilize materials is _____. This substance is used in an autoclave-like instrument known as a _____.
11. Chemical sterilization is used in some circumstances to sterilize materials that can't be placed into an autoclave because of their sensitivity to _____. In addition to these types of materials, the other situation in which chemical sterilization would be very useful would involve the sterilization of _____.
12. Another technique that can be applied to both fluids and gases involves the use of _____ to sterilize.
13. Generally speaking, very _____ microbes provide the greatest problems if you are trying to filter sterilize a material. What major group of microbes would present the greatest challenge to the filter sterilization process?
14. You were introduced to 2 general types of filters. What were they?

15. You were introduced to the concept of adsorption in reference to filter sterilization. What happens when a material is adsorbed? What type of filter would have the greatest difficulty with this phenomenon?

15. Lastly, you were introduced to the use of radiation to sterilize materials. There are 4 forms of radiation that are commonly used for the purpose of sterilization. What are they? Which one of the forms has very little ability to penetrate into materials? Which of the forms is generally considered to have marked penetration ability?

16. If you are discussing any kind of antimicrobial agent, the term, mode of action is applicable. What is meant by this term? What is the mode of action of germicidal wavelengths of UV radiation?