

**Microbiology 2400
Study Guide #13
Winter Semester 2008
E. Hoffman**

LABORATORY SECTION

Students: Given the extend of laboratory questions asked on study guide #11, there are no questions for this portion of this study guide.

LECTURE SECTION

Chapter 13

1. A short time was spent discussing the bird flu (influenza) virus. When reading about this virus, designations such as H5N1 are encountered. The H and N designations refer to specific ___ (lipids, proteins, etc.) that are found in the envelopes of these viruses. What do the H and N stand for? What do the numbers stand for?
2. Currently, almost all of the infections of living organisms due to H5N1 involve what kinds of living organisms?
3. At the present time, there have only been a handful of reported cases of “bird flu” among humans. The bulk of these cases have involved individuals who have worked closely with ____. Generally, of this infected group of people, what is the mortality rate?
4. What is the concern, at the present time, with “bird flu” for a public health standpoint?
5. Human influenza viruses are ___ (RNA or DNA) viruses and are different from the general diagram that you were introduced to in what major respect?
5. In the discussion of the HIV virus, it was noted that the virus is an RNA virus. Following the penetration phase and uncoating step, the viral RNA directs the synthesis of the corresponding DNA via the use of what enzyme? This DNA once formed can then insert itself into the ___ information of man, at which time it is referred to as a ____. This genetic information, if it becomes active, can then direct the synthesis of additional ___ particles.
6. In the course of the discussion of HIV, your attention was called to a class of compounds known as protease inhibitors. What is a protease? Why are protease inhibitors useful in attempting to prevent the replication of the virus in an infected cell?

7. In discussing cellular defenses against viruses, it was noted that alteration of the ____ of the cell would be one way for a cell to defend itself against viral invasion. Your attention was also called to a class of enzymes known as restriction endonucleases. These enzymes have the ability to detect and destroy ____.
8. Your attention was also called to a class of chemical messengers known as the interferons. This group of small proteins can act to alter cells to prepare to defend themselves against ____ invasion.
9. In discussing the effect of viruses on cells, several effects were noted. You should be able to briefly describe the following:
- a. Lysis
 - b. Transformation
 - c. Flower break
 1. What happens here (use tulip as your example)
 2. This condition was used to illustrate what general effect of viruses on cells
 - d. Giant cells
 1. What happens here
10. What are viroids? At the present time, viroid based diseases are known to occur in ____.
11. You were introduced to 3 general approaches to cultivate viruses. What were those approaches?