Name:_____ Dr. Reichler's Bio 311D Spring 2009 pre-exam 3 mini-quiz (4/3)

1) Is the way the non-specific immune system excludes viruses significantly different from how it excludes bacteria?

2) Why are the majority of B-cells in your body never activated?

3) How do antibodies eliminate pathogens from the body?

4) How do changes in B-cell DNA explain how each B-cell can make a unique antibody?

5) Would someone with an HIV infection be more susceptible to infection by bacteria or another virus?

6) What are two reasons that even though a vaccine was administered, it might not give protection against a pathogen.

7) One of the controversial aspects of the HPV vaccine is that it is recommended to give the HPV vaccine to 11-12 year-old girls. Why is it necessary to give the vaccine at this age?

(answers below)

1. *No, pathogens are excluded by skin and hairs/mucus and/or killed by stomach acids.*

2. *Each B-cell produces a different, random antibody, but most of these antibodies never recognize an antigen, and thus the B-cells are not activated.*

3. *Antibodies mark pathogens for destruction by white blood cells.*

4. *Much of the antibody gene is removed and the remaining parts that code for the variable region are spliced together to make a unique amino acid sequence.*

5. *Virus, T-cells are infected by, and killed by, HIV, and T-cells are effective against viruses but not bacteria.*

6. *The person's B-cells may not function correctly and/or they may not have a B-cell tht recognizes the pathogen. The pathogen might change so it is no longer recognized by the memory B-cells.*

7. *Since HPV is a STD, the vaccine is most effective when administered before the subjects become sexually active.*