**Immune System Web-based homework**

Name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Date: \_\_\_\_\_\_\_\_

Watch the Bozeman video on The Immune System and answer the following questions.

<http://www.youtube.com/watch?v=z3M0vU3Dv8E>

1. Describe what a virus, such as small pox, does in a human body.
2. Mr. Anderson compares the defense of a castle to the defense of a human body. Complete the following chart of that analogy. Mention three specific parts of the castle and the parts of the human body that correspond and explain why they are similar.

|  |  |  |
| --- | --- | --- |
| Part of Castle | Part of Human Body | Explanation of why they are similar |
|  |  |  |
|  |  |  |
|  |  |  |

1. What are 4 ways that skin defends the body from infection? Is this a specific or a nonspecific defense?
2. What is an “antigen”?
3. How was the name “antigen” derived? Carefully draw an antibody and its antigen. Explain how and antibody works to protect the body and explain how the structure of an antibody relates to its function.
4. Explain what it means for a person to have specific immunity to an antigen.
5. What are lymphocytes and what are the two major classes of lymphocytes?
6. In what part of the body are each type created?
7. Explain the humoral response. What causes this type of response? What kinds of cells and chemicals are involved? Explain the functions of each of these cells and chemicals.
8. Explain the cell-mediated response. What causes this type of response? What kinds of cells are involved? Explain the functions of each of these cells.
9. What is the role of a macrophage in the immune response?
10. What specific kind of cell is attacked by HIV? Why is this so damaging to the immune system? Be specific.
11. Give three examples of cell-cell communication in the immune response to an antigen.
12. Explain how a person can be infected by a disease pathogen and not know it.
13. How do viruses and bacteria get around the immune system?

**Go to this web page that further explains the difference between primary and secondary immune response:**

<http://tle.westone.wa.gov.au/content/file/969144ed-0d3b-fa04-2e88-8b23de2a630c/1/human_bio_science_3b.zip/content/004_internal_defence/page_09.htm>

1. Complete the chart:

|  |  |  |
| --- | --- | --- |
|  | **Primary Immune Response** | **Secondary Immune Response** |
| When does this response occur? (first or subsequent infection) |  |  |
| How long does it take for the body to respond to the antigen? |  |  |
| What immune cells are involved? How? |  |  |
| Does the body usually display symptoms of being “sick”? |  |  |