

Name: \_\_\_\_\_  
Biology 111, Monday lab, time: \_\_\_\_\_

## IMMUNITY WORKSHEET

Choose the **one best answer** for each of the 20 questions below. This assignment is due in one week, on March 24, and will not be accepted past this date.

- Any foreign material that can get inside your body and make you sick is called a
  - T cell
  - pathogen
  - phagocyte
  - non-specific response
  
- Which of the following is **not** an example of a surface barrier that prevents pathogens from entering the body:
  - skin
  - mucous
  - tears
  - inflammation
  
- T cells are:
  - made in bone marrow but mature in the thymus
  - made in the thymus but mature in bone marrow
  - made and mature in bone marrow
  - made and mature in the thymus
  
- Antibiotic resistance occurs quickly because:
  - Evolution occurs rapidly because a new generation of bacteria can be generated every 20 minutes.
  - Some people do not take the full course of antibiotics, promoting the growth of stronger bacteria.
  - Bacteria can swap bits of DNA with each other, meaning that dangerous bacteria can acquire resistant DNA from other strains of bacteria.
  - All of the above.
  
- Which of the following offers **long-term protection** against a specific **virus**?
  - antibiotics
  - passive immunity vaccination
  - active immunity vaccination
  - none of the above

6. One type of immune system malfunction is called **autoimmunity**; this is when the immune system for some reason attacks your own body in the same way it would normally attack an antigen.

Which of the following is **not** an example of an autoimmune disorder:

- a. rheumatoid arthritis
- b. lupus
- c. multiple sclerosis
- d. AIDS

7. The development of vaccinations began when Edward Jenner noticed that \_\_\_\_\_.

- a. rats were always present when people contracted bubonic plague
- b. people who had earlier exposure cowpox did not develop smallpox
- c. people who drank water from a particular public water pump developed cholera
- d. bacteria removed from a sick animal would cause the same illness if injected into a healthy animal

8. An antigen is \_\_\_\_\_.

- a. any molecule that the body recognizes as foreign
- b. the DNA or RNA of an infective pathogen
- c. an alternate term for an MHC complex
- d. the collection of circulating proteins which kill or tag microbes

9. Nonspecific immunity includes \_\_\_\_\_.

- a. the skin and epithelial linings like those in the lung
- b. macrophages
- c. lymphocytes and neutrophils
- d. the liver and spleen

Not commonly considered to be helpful, \_\_\_\_\_ is a defensive response that

\_\_\_\_\_.

- a. all of the choices
- b. sneezing, expels irritants from the nasal cavity
- c. mucous, traps microbes in a sticky fluid
- d. diarrhea, flushes microbes from the intestines

11. Memory cells play a vital immune role \_\_\_\_\_.
- when you are first exposed to a pathogen
  - when you are exposed to a disease for the second time
  - in non-specific immunity
  - in the primary immune response
12. Cytotoxic T cells protect the body by \_\_\_\_\_.
- making antibodies that float free in the body fluids
  - activating the complement system
  - secreting toxic substances that destroy pathogens
  - phagocytizing invaders
13. Your cells have a unique MHC (major histocompatibility complex). Directions for producing MHCs come from \_\_\_\_\_.
- the thymus
  - the bone marrow
  - inherited DNA
  - the helper T-cells
14. How is inflammation helpful?
- it inhibits bacterial growth
  - it limits mobility and facilitates rest of an injured structure
  - it improves the availability of nutrients to improve the repair process
  - all of the choices
15. Over time, antigen receptor diversity within a population \_\_\_\_\_.
- decreases because less fit individuals die and their genes are removed from the gene pool
  - increases because the elements that form the receptor genes spontaneously rearrange
  - decreases because receptor patterns that are not used are selected against
  - increases because each new generation is born of parents that survived childhood diseases

16. Which of the following develops after the primary immune response?
- complement proteins
  - macrophages
  - memory cells
  - antigens
17. Activated complement brings about the death of a microbe when it \_\_\_\_\_.
- organizes into a membrane pore and causes lysis of the cell
  - activates a chemotactic response in certain phagocytic cells
  - mediates interactions between immune cells
  - all of the choices
18. There are many types of immune system cells. The cell that produces antibodies is the \_\_\_\_\_.
- macrophage
  - phagocyte
  - T lymphocyte
  - B lymphocyte
19. Which of the following provides long-term immunity?
- memory cells
  - cytotoxic T cells
  - antigens
  - complement proteins
20. The enzymes present within the AIDS virus \_\_\_\_\_.
- dissolve the membrane of the target cell to facilitate entry
  - build proteins that will assemble into new AIDS viruses
  - build DNA from RNA, a process called reverse transcription
  - break down sugars to produce ATP needed for viral replication