Name:

Date:

School:

Facilitator:

3.06 Immunity Response Scenarios

# SCENARIO 1

**Read the scenario and complete the questions that follow. Use the notes from the lesson to help with completing these questions. Pay attention to charts and tables in the lesson.**

**SCENARIO:** Your relative, who is 4 years old, just received an MMR (measles/mumps/rubella) vaccine at the doctor’s office.

1. **True or False**: This child will become ill with the measles and mumps in 1 week.

2. What type of immunity will this vaccine provide: Active or Passive?

3. Will this type of immunity be considered artificial or natural?

a. Explain your answer: (3 points)

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# SCENARIO 2

**Read the scenario and complete the questions that follow. Use the notes from the lesson to help with completing these questions. Pay attention to charts and tables in the lesson.**

**SCENARIO:** You are a nurse treating a young boy who has been bitten by a wild raccoon. The raccoon was captured and sent off to the State Health Department for rabies testing. The laboratory results will not be back for 2 weeks. Because of this, the physician chooses to treat for rabies and orders the rabies immunoglobulin injection for immediate protection and the rabies vaccine for long-term protection.

4. What is the advantage of the immunoglobulin injection over the vaccine? (3 points)

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5. What type of immunity will the **immunoglobulin injection** induce: Naturally Active, Artificially Active, Naturally Passive, or Artificially Passive?

6. What type of immunity will **the vaccine** induce: Naturally Active, Artificially Active, Naturally Passive, or Artificially Passive?

# SCENARIO 3

**Read the scenario and complete the questions that follow. Use the notes from the lesson to help with completing these questions. Pay attention to charts and tables in the lesson.**

**SCENARIO:** Your friend contracted the flu and tested positive for the influenza virus during her doctor visit 3 weeks ago. She is now symptom-free and has returned to school feeling healthy.

7. **True or False**: Her recovery from the flu was due to her immune system fighting the pathogen through the innate immune response.

8. Describe 3 differences in cell-mediated and humoral immune responses of the adaptive immune system. (2 points each)

a.

b.

c.

**9. True or False: Your friend now has immunity to all kinds of influenza virus types and will not get the flu again because of this.**

10. **True or False**: Your friend developed antibodies to help destroy the influenza virus.

**11. Yes or No: Would this type of immunity be the same as the immunity a newborn acquires from maternal milk while breast feeding?**

a. Explain: (3 points)

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# SCENARIO 4

**Read the scenario and complete the questions that follow. Use the notes from the lesson to help with completing these questions. Pay attention to charts and tables in the lesson.**

**SCENARIO:** Your friend is injured in a car accident and has a laceration (or cut) on her arm. She is transported to the emergency room to receive treatment for the laceration. The physician orders her to be given a tetanus toxoid to protect against tetanus bacteria that could have entered the wound. This will cause an active immune response.

12. Knowing that the tetanus toxoid vaccine has a small amount of tetanus antigens that your friend has not been exposed to before, would her immune response be a primary or secondary response?

13. If she were given a tetanus vaccine (composed of tetanus antigens) again in 10 years, would her immune response be a primary or secondary response?

14. What role do memory cells play in a secondary immune response? (3 points)

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**15. Which immune response, primary or secondary, is being described: antibody production begins in 4 days, peak levels are attained in 5 days, and stay at high levels for a long period of time?**

**16. True or False: When the innate immune system fails to control the pathogens, the adaptive system comes into action. The response of the adaptive immune system is a primary response when it is the first time the cells have encountered the pathogen and a secondary response when the cells have responded to the pathogen in the past.**