Name:

Date:

School:

Facilitator:

4.05 Virtual Blood Typing / Transfusion Lab Simulation Lab

## PRE-LAB

Using the lesson notes, complete this pre-lab section.

**1. Complete the table identifying antigens and antibodies by blood type.**

|  |  |  |
| --- | --- | --- |
| **Blood Type** | **Antigens Present on Cell Surface** | **Antibodies Present in Plasma** |
| Type A |  |  |
| Type B |  |  |
| Type O |  |  |
| Type AB |  |  |
| Type AB+ |  |  |

2. How many units of blood does the average adult have?  liters

3. A person’s blood type depends on the type of protein marker, called an , found on the cell membranes of the red blood cells.

4. Protein markers react with specific , which are proteins found in the immune system.

5. What happens if antibodies attach to antigens on the red blood cells?

6. Rh factor is another blood protein critical in making successful blood transfusions. If a person **does NOT have this protein,** is their blood type Rh- or Rh+?

## LAB SIMULATION SECTION

Go to the **Blood Typing Activity**. In this lab, you will learn how to type blood and choose the best blood match for a patient needing a transfusion.

7. **Read the information on the patient -** Summarize the problem in the box below.

|  |
| --- |
|  |

### Explore the Lab

Read the information on the lab. Match the items to their descriptions.

|  |  |
| --- | --- |
|  **8. Anti-Rh Serum** | **A**. A liquid containing proteins called antibodies that bind to Type A protein markers (called antigens) on red blood cells causing clumping of the blood if present.  |
|  **9. Anti-B Serum** | **B**. A liquid containing protein called antibodies that bind to Type B protein markers (called antigens) on red blood cells causing clumping of the blood if present. |
|  **10. Anti-A Serum** | **C**. The blood that needs to be typed  |
|  **11. Blood Samples** | **D**. A liquid containing proteins called antibodies that bind to Rh protein markers (called antigens) on red blood cells causing clumping of the blood if Rh antigens are present. |

12. Define agglutination.

13. Which antibody serum has antibodies to attach to Type A blood?

### Procedure

Follow the procedure and record your answers below.

|  |  |  |
| --- | --- | --- |
| **Person** | **Antibody serums showing agglutination** | **Blood type** |
| Patient |  |  |
| Donor 1 |  |  |
| Donor 2 |  |  |
| Donor 3 |  |  |

**14. Paste a screenshot of the “Choose a Donor” screen showing the blood types of the patient and all donors below.**

|  |
| --- |
|  |

### Conclude and Analyze

**15.** Which donor was the best donor for the patient? Explain why using complete sentences.

**16.** Which blood types could Donor 2 donate to? Explain why using complete sentences.

**17.** Which blood types could Donor 3 donate to? Explain why using complete sentences.

Answer the following using complete sentences.

**18**.Why is Type O negative blood known as the universal donor?

**19**. What might happen if someone with Type A received a transfusion of Type B blood?