

Name: _____

Blood Components and Blood Types

1. What is the name of the liquid component of blood? plasma
2. What are the three solid components of blood? wbc rbc platelets
3. What is the role of plasma?
transports rbc, wbc, platelets, nutrients, proteins, antibodies, hormones, waste
4. What is the protein present in red blood cells that allows for the transport of oxygen and carbon dioxide? hemoglobin

5. What is the other name given to the solid components of blood?

- | | |
|---------------------|---------------------------|
| a. Red blood cell | 1. Leucocyte |
| b. White blood cell | 2. Thrombocyte |
| c. Platelets | 3. Erythrocyte |

6. Blood components present different characteristics and functions. Complete the following sentences by writing the name of the constituent described.

Platelets	Red blood cells	White blood cells
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- a. The RBC are doughnut-shaped.
- b. The only blood cells that have a nucleus are the WBC.
- c. The platelets are not real cells but fragments of cells.
- d. The wbc play an important role in immunity.
- e. The Platelets are important for the coagulation of blood.
- f. The RBC are responsible for the transportation of oxygen and carbon dioxide.

7. What is the difference between an antigen and an antibody?

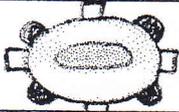
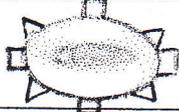
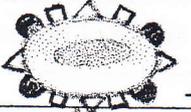
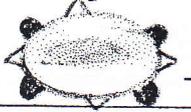
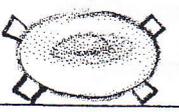
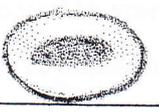
Antigen is -foreign substance (virus/bacteria)
antibodies - created by wbc to
neutralize antigen

8. Name the three antigens that can be present on the surface of a red blood cell. *(in relation to blood type)*
A, B, Rh

9. Name the three antibodies that can be present in the blood plasma (in relation to the blood types). Anti A Anti B Anti Rh

10. The antigens present at the surface of the red blood cells determine the blood type of a person. Within the ABO and Rhesus systems, what are the eight possible blood types?
A+ A- AB+ AB- B+ B- O+ O-

11. Complete the following table. Write the blood types, the antigens present at the surface of the red blood cells and the antigens present in the blood.

Blood types	Antigens present on red blood cells	Antibodies present in the blood
 <u>B+</u>	B Rh	A
 <u>B-</u>	B	A Rh
 <u>A+</u>	A Rh	B
 <u>A-</u>	A	B Rh
 <u>AB+</u>	A B Rh	none
 <u>AB</u>	A B	Rh
 <u>O+</u>	Rh	A + B
 <u>O-</u>	none	A B Rh

 = antigen A  = antigen B  = Rhesus factor

12. Complete the following table for blood compatibility (indicate with a X when it is compatible).

		Donor							
		A+	A-	B+	B-	AB+	AB-	O+	O-
Recipient	A+	X	X					X	X
	A-		X						X
	B+			X	X			X	X
	B-				X				X
	AB+	X	X	X	X	X	X	X	X
	AB-		X		X		X		X
	O+							X	X
	O-								X

13. To which blood type belongs a person who can give its blood to any recipient?
Explain your answer.

O- universal donor
no antigens on blood

14. To which blood type belongs a person who can receive blood from any blood type?
Explain your answer.

AB+ all the antigens
universal recipient
so no antibodies

15. You ask a person with an O- blood type to give blood and the person answers that there is not point for her to give blood because there is only 7% of O- blood type in Québec. What can you tell this person to make her change her mind?

O- is the universal donor & their blood type would be compatible with everybody's blood type so it is an important type to have in blood bank.

16. The active ingredient in Aspirine is acetylsalicylic acid. This substance can be found in the bark of white willows but can be synthesized in laboratories since the end of the 19e century. This substance is known for its efficiency to reduce pain and fever. We have also discovered that it acts on the platelets and reduce their efficiency to coagulate blood. Why do you think we ask people not to take aspirin before undergoing surgery?

Because it would ↓ platelet efficiency and it would not stop their bleeding during surgery