

Name: _____ Block: _____ Date: _____

Biology 12 - Blood!

⇒ Part A: Definitions: Define the following terms, **IN YOUR OWN WORDS, IN AS FEW WORDS AS CLARITY ALLOWS.**

1. formed elements	
2. oxyhemoglobin	
3. reduced hemoglobin	
4. heme	
5. clotting	
6. platelets	
7. fibrinogen	
8. thrombin	
9. fibrin	
10. serum	
11. granulocytes	
12. agranulocytes	
13. antigens	
14. antibodies	
15. inflammatory reaction	
16. mononucleosis	
17. phagocytosis	
18. macrophages	
19. bradykinin	
20. histamine	
21. pus	
22. agglutination	
23. Rh factor	
24. fetal erythroblastosis	
25. blood	

Part B - Short Answers

- The smallest of the white cells is the _____, which has a _____ nucleus and makes _____.
- Oxygen is transported about the body in combination with _____.
- At the arterial side of a capillary, _____ aids the passage of water out of the blood. At the venous side, _____ brings about the passage of water into the blood.
- Small organic molecules such as glucose are transported in the _____ portion of blood.
- Blood clotting is dependent on both a formed element, _____, and two proteins in the blood, _____ and _____.

6. White cells are divided into the _____ and the _____; the latter have _____ in the cytoplasm.
7. Antibodies are protein molecules, which combine with _____.
8. Neutrophils function by _____ bacteria.
9. Blood type AB has _____ and _____ antigens on the red cells and _____ antibodies in the plasma.
10. An Rh-negative woman may form _____ that destroy her Rh-_____ baby's _____.
11. Fill in the following table:

Plasma Constituent	Function	Source
Water	Maintains blood _____ and _____ molecules	Absorbed from _____
Plasma Proteins a. Albumin b. Fibrinogen c. Globulins	All maintain blood _____ & _____ Fight _____	_____
Gases a. Oxygen b. CO ₂	_____ End product of _____	_____
Nutrients: Fats, glucose, amino acids, etc.	_____ for cells	Absorbed from _____
Salts	Maintain blood _____ / _____, aid _____	Absorbed from _____
Wastes	_____	_____
Hormones, vitamins etc.	_____	_____

12. Life cycle of red blood cells: The red cells, scientifically called _____, are made in the _____ . Upon maturation, they are small, biconcave disks that lack a _____, but they are filled with the complex protein called _____, which transports oxygen about the body. After about 120 days, the red cells are destroyed in _____ or _____.
13. Life cycle of white cells: Most white cells, scientifically called _____, are made in the _____, but lymphocytes are also made in the _____. White cells are divided into two types, the _____ and the _____. Leukocytes with many-lobed nuclei are called _____.
14. Fill in the following table with the contrasting word or phrase:

Neutrophil	Lymphocyte
Polymorphonuclear	_____
_____	agranular
Phagocytic	_____
_____	made in lymphoid tissue

15. The two ways that white cells fight infection are:

16. Blood clotting: These are the reactions that occur when blood clots. Put a check ✓ beside those substances that are always present in the blood. Put an X beside those substances that arise after blood begins the process of clotting. Put a star beside those substances that act as enzymes. Underline the words that indicate the actual clot.

_____	Platelets	_____	thromboplastin
_____	Prothrombin	_____	thrombin
_____	Fibrinogen	_____	fibrin threads

17. The capillaries are the most important part of the circulatory system because _____.

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18. Blood typing is based on antigen-antibody reaction, which takes place when an antigen is brought into contact with an antibody of the same type letter. The antigen-antibody reaction causes clumping or agglutination of the red cells. In the plasma, the antibodies present will not be of the same type letter as the antigen. Why not? _____

19. Fill in the following table:

Blood Type of Antigen	Antibody	Can Receive From	Can Donate To
A	B		
B	A		
AB	-		
O	a,b		

20. Which combination can lead to fetal erythroblastosis? Rh _____ mother and Rh _____ father.

21. Which of the following is NOT a blood protein? a) collagen b) prothrombin c) albumin d) fibrinogen e) globulin.

22. Plasma is a) the same as tissue fluid b) the liquid remaining after blood clots c) the liquid part of blood d) all of these

23. In which way is a neutrophil like a lymphocyte? a) they both produce antibodies b) they are both phagocytic c) they are both made in lymphoid tissue d) they both have a many-lobed nucleus e) they are both white cells f) all of these

24. Water leaves capillaries at their arterial ends because a) osmotic pressure gradients are in opposite directions b) blood pressure is greater than the osmotic pressure c) a gradient is established for passive diffusion d) osmotic pressure is always greater than blood pressure e) b and d

25. Water reenters capillaries at their venule ends because of a) active transport from interstitial fluid b) a protein concentration gradient c) increasing blood pressure d) increasing hemoglobin production

26. An Rh-positive fetus being carried by an Rh-negative mother a) develops antibodies to the mother's blood b) develops antigens to the mother's blood c) may have its red cells attacked by antibodies made by the mother d) may have its red cells attacked by antigens made by the mother

27. The agglutination of red blood cells occurs whenever a) appropriate antibodies bind with antigens on red cells b) a person receives a blood transfusion from someone with an incompatible blood type c) complementary antibodies combine d) blood cells are destroyed by leukocytes e) a and b