

# Blood: Composition, Functions, and Circulatory System

Biology · Answer Key · 22 Questions

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## 1. What is blood primarily composed of?

- A) Plasma and red blood cells
- B) Plasma and leukocytes
- C) Plasma and platelets
- D) Plasma and cellular components (morphotic elements)**

## 2. What percentage of blood volume does plasma constitute after centrifugation?

- A) Approximately 15%
- B) Approximately 30%
- C) Approximately 55%**
- D) Approximately 70%

## 3. Which component forms the lowest layer after blood centrifugation?

- A) Leukocytes
- B) Platelets
- C) Erythrocytes**
- D) Plasma

## 4. What is the main function of erythrocytes?

- A) Transporting nutrients
- B) Transporting oxygen and carbon dioxide**
- C) Fighting infections
- D) Clotting blood

## 5. What is the primary role of leukocytes?

- A) Transporting hormones
- B) Maintaining hydration
- C) Defending the body against pathogens**
- D) Carrying nutrients

## 6. Which blood components are fragments of bone marrow cells and are crucial for blood clotting?

- A) Erythrocytes
- B) Leukocytes
- C) Platelets**
- D) Plasma proteins

**7. What is the function of plasma?**

- A) Only transporting oxygen
- B) Transporting most substances, participating in immune responses and blood clotting**
- C) Forming the buffy coat
- D) Transporting only waste products

**8. What substance in plasma is essential for blood clotting?**

- A) Albumin
- B) Globulin
- C) Fibrinogen**
- D) Antibodies

**9. What does the hematocrit index measure?**

- A) The percentage of plasma in blood
- B) The percentage of leukocytes in blood
- C) The ratio of red blood cell volume to total blood volume**
- D) The concentration of platelets

**10. How does blood maintain proper hydration, pH, and body temperature?**

- A) Through the action of platelets
- B) Through the transport of oxygen by erythrocytes
- C) Through its regulatory function**
- D) By forming blood clots

**11. What is the primary function of the circulatory system?**

- A) Digesting food
- B) Transporting substances throughout the body**
- C) Producing hormones
- D) Filtering waste from the blood

**12. Which chamber of the heart receives deoxygenated blood from the body?**

- A) Left atrium
- B) Left ventricle
- C) Right atrium**
- D) Right ventricle

**13. What type of blood do arteries typically carry away from the heart in the systemic circulation?**

- A) Deoxygenated blood
- B) Oxygenated blood**
- C) Mixed blood
- D) Nutrient-rich blood

**14. What is the function of valves in the heart and blood vessels?**

- A) To pump blood
- B) To regulate blood pressure
- C) To ensure unidirectional blood flow**
- D) To exchange gases

**15. What are capillaries?**

- A) Large blood vessels that carry blood away from the heart
- B) Large blood vessels that carry blood towards the heart
- C) The smallest blood vessels where substance exchange occurs**
- D) Valves that prevent backflow

**16. What is blood clotting (coagulation)?**

- A) A process that increases blood flow
- B) A protective mechanism to prevent blood loss from damaged vessels**
- C) The removal of waste products from the blood
- D) The transport of oxygen

**17. What is hemophilia?**

- A) A condition where blood clots too easily
- B) A genetic disorder characterized by impaired blood clotting**
- C) A disease affecting red blood cell production
- D) A type of anemia

**18. What is a thrombosis?**

- A) Excessive bleeding
- B) The formation of a blood clot within a blood vessel**
- C) A rapid heart rate
- D) Low blood pressure

**19. What is a serological conflict?**

- A) A mismatch between blood types during transfusion, leading to agglutination**
- B) A conflict between white blood cells and pathogens
- C) A discrepancy in hormone levels
- D) An imbalance of electrolytes in the blood

**20. What determines a person's blood group in the ABO system?**

- A) The presence of Rh antigens on red blood cells
- B) The presence of specific antigens (A and B) on the surface of erythrocytes**
- C) The type of antibodies present in the plasma
- D) The amount of hemoglobin in red blood cells

**21. Individuals with blood group AB have which antigens and antibodies?**

- A) Antigens A and B; no antibodies**
- B) Antigen A; anti-B antibodies
- C) Antigen B; anti-A antibodies
- D) No antigens; anti-A and anti-B antibodies

**22. What is the Rh factor?**

- A) An antigen found in plasma
- B) An antigen found on the surface of red blood cells**
- C) An antibody that attacks red blood cells
- D) A protein involved in blood clotting