

Blood Histology — 30 Multiple Choice Questions (MCQs)

1. Blood is classified as what type of tissue?

- A. Epithelial tissue
- B. Connective tissue
- C. Muscular tissue
- D. Nervous tissue

Answer: B. Connective tissue

2. The non-living component of blood is called:

- A. Platelets
- B. Plasma
- C. Leukocytes
- D. Hemoglobin

Answer: B. Plasma

3. The most abundant plasma protein is:

- A. Fibrinogen
- B. Globulin
- C. Albumin
- D. Hemoglobin

Answer: C. Albumin

4. Albumin is primarily produced in the:

- A. Bone marrow
- B. Liver
- C. Spleen
- D. Pancreas

Answer: B. Liver

5. The buffy coat layer in centrifuged blood contains:

- A. Plasma
- B. Erythrocytes
- C. Leukocytes and platelets
- D. Albumin

Answer: C. Leukocytes and platelets

6. Normal hematocrit for males is approximately:

- A. 25–35%
- B. 36–48%
- C. 40–53%
- D. 60–70%

Answer: C. 40–53%

7. The main function of erythrocytes is to:

- A. Transport nutrients
- B. Defend against pathogens
- C. Transport oxygen and CO₂
- D. Initiate clotting

Answer: C. Transport oxygen and CO₂

8. The average diameter of a normal red blood cell is:

- A. 3 μm
- B. 5 μm
- C. 7.5 μm

D. 10 μm

Answer: C. 7.5 μm

9. The biconcave shape of erythrocytes helps to:

- A. Store nutrients
- B. Increase surface area for gas exchange
- C. Protect from bacteria
- D. Store enzymes

Answer: B. Increase surface area for gas exchange

10. Which protein provides elasticity and stability to the RBC membrane?

- A. Actin
- B. Spectrin
- C. Collagen
- D. Myosin

Answer: B. Spectrin

11. The hormone that stimulates red blood cell production is:

- A. Insulin
- B. Erythropoietin
- C. Hemoglobinase
- D. Albumin

Answer: B. Erythropoietin

12. Erythropoietin is secreted mainly by the:

- A. Spleen
- B. Bone marrow
- C. Kidneys
- D. Liver

Answer: C. Kidneys

13. Which blood type has no antigens on its red cell surface?

- A. Type A
- B. Type B
- C. Type AB
- D. Type O

Answer: D. Type O

14. The most common type of leukocyte is:

- A. Neutrophil
- B. Eosinophil
- C. Monocyte
- D. Basophil

Answer: A. Neutrophil

15. Neutrophils are specialized for:

- A. Parasitic infections
- B. Viral infections
- C. Bacterial infections
- D. Allergic reactions

Answer: C. Bacterial infections

16. A neutrophil nucleus typically has:

- A. One lobe
- B. Two lobes
- C. 2–5 lobes
- D. 6–10 lobes

Answer: C. 2–5 lobes

17. Eosinophils stain strongly with which dye?

- A. Methylene blue
- B. Hematoxylin
- C. Eosin
- D. Azure

Answer: C. Eosin

18. Basophil granules contain all the following except:

- A. Histamine
- B. Heparin
- C. Serotonin
- D. Eosinophilic chemotactic factor

Answer: C. Serotonin

19. The largest type of leukocyte is the:

- A. Neutrophil
- B. Eosinophil
- C. Monocyte
- D. Lymphocyte

Answer: C. Monocyte

20. Monocytes differentiate into:

- A. Plasma cells
- B. Macrophages
- C. Mast cells
- D. Erythrocytes

Answer: B. Macrophages

21. Lymphocytes are responsible for:

- A. Gas exchange
- B. Adaptive immunity
- C. Clotting
- D. Osmotic regulation

Answer: B. Adaptive immunity

22. Which lymphocyte secretes antibodies?

- A. Cytotoxic T cells
- B. Natural killer cells
- C. Plasma cells
- D. Helper T cells

Answer: C. Plasma cells

23. Helper T cells are identified by which surface marker?

- A. CD8
- B. CD3
- C. CD4
- D. MHC-II

Answer: C. CD4

24. Cytotoxic T cells recognize antigens bound to:

- A. MHC-I
- B. MHC-II
- C. Antibodies
- D. Immunoglobulins

Answer: A. MHC-I

25. B cells recognize antigens through:

- A. CD8 receptors
- B. T-cell receptors
- C. Immunoglobulins
- D. MHC-I molecules

Answer: C. Immunoglobulins

26. Natural killer cells are part of which type of immunity?

- A. Adaptive immunity
- B. Innate immunity
- C. Humoral immunity
- D. Passive immunity

Answer: B. Innate immunity

27. Platelets are fragments of which bone marrow cell?

- A. Megakaryocyte
- B. Myelocyte
- C. Lymphoblast
- D. Monoblast

Answer: A. Megakaryocyte

28. Platelets contain granules such as:

- A. Alpha, beta, and gamma
- B. Alpha, delta, and lambda
- C. Primary and secondary
- D. Azurophilic and specific

Answer: B. Alpha, delta, and lambda

29. The average lifespan of platelets is approximately:

- A. 1 day
- B. 5 days
- C. 10 days
- D. 30 days

Answer: C. 10 days

30. The process by which leukocytes leave the bloodstream to enter tissues is called:

- A. Chemotaxis
- B. Phagocytosis
- C. Diapedesis
- D. Opsonization

Answer: C. Diapedesis