

Histology MCQs/Blood and Hematopoiesis

1 Which function do have **azurophilic granules** in leukocytes?

- Derivatives of the smooth endoplasmic reticulum
- Derivatives of the cytoskeleton
- Cell inclusions
- Lysosomes

2 Diameter of **basophilic erythroblast** is:

- 6 to 8 μm
- 10 to 16 μm
- 20 μm
- 22 to 25 μm

3 Diameter of **megakaryocyte** is:

- 5 to 20 μm
- 20 to 50 μm
- 50 to 150 μm
- 150 to 1000 μm

4 Diameter of **myeloblast** is:

- 1 to 5 μm
- 5 to 10 μm
- 10 to 15 μm
- 15 to 20 μm

5 Diameter of **orthochromatophilic erythroblast** is:

- 6 to 8 μm
- 8 to 10 μm
- 10 to 18 μm
- 20 to 25 μm

6 Diameter of **proerythroblast** is:

- 20 μm
- 40 μm
- 60 μm
- 80 μm

7 What is a **differential blood count** (leucogram):

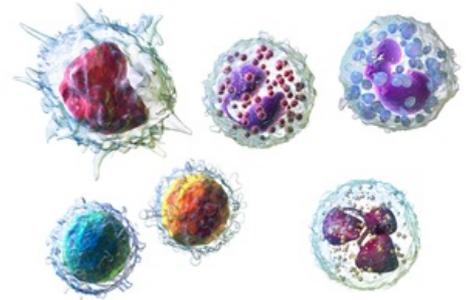
- Relative frequency of all formed blood elements
- Absolute number of all formed blood elements
- Relative frequency of white blood cells
- Absolute number of white blood cells

8 What are dimensions of an average **red blood cell**?

- Diameter 7.5 μm , maximal thickness 2.6 μm , thickness in the middle 0.8 μm
- Diameter 10 μm , maximal thickness 1.6 μm , thickness in the middle 0.1 μm
- Diameter 7.5 μm , maximal thickness 1.6 μm , thickness in the middle 0.8 μm
- Diameter 10 μm , maximal thickness 2.6 μm , thickness in the middle 0.1 μm

9 Except one, all below mentioned cells are differentiated monocytes. Which of them is **the exception**?

- Microglia
- Osteoclast
- Goblet cell



Kupfer's cell

10 How is called first morphologically distinguishable stage of development of **red blood cells**?

- Polychromatophilic erythroblast
- Orthochromatophilic erythroblast
- Basophilic erythroblast
- Proerythroblast

11 How many of **basophils** are in the blood?

- 0 to 1 % of all WBC's
- 3 to 5 % of all WBC's
- 20 to 30 % of all WBC's
- 60 to 70 % of all WBC's

12 How many of **eosinophils** are in the blood?

- 0 to 1 % of all WBC's
- 2 to 5 % of all WBC's
- 20 to 30 % of all WBC's
- 60 to 70 % of all WBC's

13 How many of **lymphocytes** are in the blood?

- 3 to 5 % of all WBC's
- 5 to 20 % of all WBC's
- 20 to 40 % of all WBC's
- 60 to 70 % of all WBC's

14 How many of **monocytes** are in the blood?

- 1 to 3 % of all WBC's
- 2 to 10 % of all WBC's
- 20 to 30 % of all WBC's
- 60 to 70 % of all WBC's

15 How many of **neutrophilic bands** are in the blood?

- 0 to 1 % of all WBC's
- 2 to 5 % of all WBC's
- 60 to 70 % of all WBC's
- 20 to 30 % of all WBC's

16 How many of **neutrophils** are in the blood?

- 0 to 1 % of all WBC's
- 3 to 5 % of all WBC's
- 20 to 30 % of all WBC's
- 60 to 70 % of all WBC's

17 How many **platelets** (trombocytes) are in the blood?

- 15 000 to 40 000 in mm^3
- 150 000 to 400 000 in mm^3
- 1.5 000 000 to 4 000 000 in mm^3
- 15 000 000 to 40 000 000 in mm^3

18 Which important compounds are inside specific granules of **basophils**?

- Heparine a histamine
- Kolagenases
- Defensins
- Lysozym

19 In which stage occur changes of nuclear morphology which are hallmark of **granulocytes**?

- Metamyelocyte
- Promyelocyte

- Myeloblaste
- Myelocyte

20 In which stage starts production of **specific granules**?

- Metamyelocyte
- Promyelocyte
- Myeloblaste
- Myelocyte

21 Which stage of development of red blood cells is last stage sensitive to erythropoietin (EPO)?

- Polychromatophilic erythroblast
- Orthochromatophilic erythroblast
- Basophilic erythroblast
- Proerythroblast

22 Life-span of the **red blood cell** is around:

- 3 to 5 days
- 50 days
- 80 days
- 120 days

23 Main difference between the blood plasma and serum is:

- Plasma does not contain proteins involved in blood clotting
- Serum does not contain proteins involved in blood clotting
- Plasma does not contain albumin and prealbumin
- Serum does not contain albumin and prealbumin

24 **Major basic protein** (MBP) is main part of specific granules of:

- All granulocytes
- Neutrophils
- Eosinophils
- Basophils

25 How is called pathological condition where red blood cells of pathological shapes are present?

- Poikilocytosis
- Anisocytosis
- Polycythaemia
- Anaemia

26 **Platelets** (trombocytes) are not assumed to be cells because:

- Bad formulation of the question, platelets are cells
- They are fragments of cytoplasm of the megakaryocyte
- It was stated so in the past
- They have no nuclei

27 Which of following statements about platelets **is not true**?

- alpha (α) granules contain proteins involved in blood clotting
- delta (δ) granules contain ATP, ADP, serotonin and calcium
- lambda (λ) granules contain hydrolytic enzymes
- mu (μ) granules contain myeloperoxidase

28 In which structure is first site of production of red blood cells in the embryo?

- Wall of the yolk sack
- Bone marrow
- Kidney
- Liver

29 The best definition of the **hematocrit** (HCT) is:

- Volume percentage of the blood occupied by formed blood elements
- Mass percentage of the blood occupied by formed blood elements
- Total volume of the blood occupied by formed blood elements
- Total mass of the blood occupied by formed blood elements

30 Which anions are the most common in the blood plasma?

- SO_4^{2-} a Cl^-
- H_2PO_4^- a HSiO_4^-
- Cl^- a HCO_3^-
- HCO_3^- a HSiO_4^-

31 Which cation has the highest concentration in the blood plasma?

- Ca^{2+}
- Mg^{2+}
- Na^+
- K^+

32 Which is a diameter of the **monocyte**?

- 6 to 8 μm
- 10 to 12 μm
- 12 to 20 μm
- 16 to 18 μm

33 Which is a diameter of the **neutrophil**?

- 6 to 8 μm
- 10 to 12 μm
- 12 to 20 μm
- 16 to 18 μm

34 What is a **leukocyte**?

- Activated white blood cell
- Quiescent white blood cell
- Immature white blood cell
- Any white blood cell

35 What is main function of **buffer systems** in the blood?

- Blood buffer is curiosity of biophysical chemistry, but it is out of physiological importance
- They are involved in regulation of pH on value related to the actual need of the organism
- They are involved in regulation of pH on strict value
- There is nothing like buffers inside the blood

36 Which hormone or cytokine simulates formation of **platelets**?

- Trombopoietin
- Erythropoietin
- Interleukin 6
- Vasopresin

37 Which hormone or cytokine simulates formation of **red blood cells**?

- Erythropoietin (Epo)
- Interleukin 1 (IL 1)
- Interleukin 6 (IL 6)
- Vasopresin

38 Which hormone or cytokine simulates maturation of **granulocytes**?

- SCF (stem cell factor)
- Interleukin 5 (IL 5)
- Angiotensin
- GM-CSF

39 Which of below mentioned cells **is not able** to undergo mitosis?

- Orthochromatophilic erythroblast
- Polychromatophilic erythroblast
- Bazophilic erythroblast
- Proerythroblast

40 Which of following cells is **the least differentiated**?

- Metamyelocyte
- Promyelocyte
- Myeloblast
- Myelocyte

41 Which of statements below describes **B lymphocytes** the best?

- B lymphocytes has nucleus composed of lobules
- B lymphocytes are precursors of plasma cells
- B lymphocytes has fagocytic activity
- B lymphocytes produce antibodies

42 Which of statements below describes **T lymphocytes** the best?

- We have different types of T lymphocytes according to their function
- Mature T lymphocytes are released from the bone marrow
- T lymphocytes has nucleus composed of lobules
- T lymphocytes are usually two-nucleated

43 Which statement about development of the **megakaryocyte** is correct?

- It is a result of both endomitosis and fusion of precursor cells, but endomitosis dominates
- It is a result of both endomitosis and fusion of precursor cells, but fusion dominates
- It is a result of endomitotic division of precursor cell
- It is a result of fusion of precursor cells

44 Which statement about **monocytes** is **false**?

- Except in very exceptional cases. they have a round nucleus
- They circulate in the peripheral blood few days only
- They can differentiate in macrophages
- They have 15 to 20 μm in diameter

45 Which type of tissue serves as a supportive structure for hematopoiesis in the bone marrow?

- Jelly-like connective tissue
- Reticular connective tissue
- Elastic connective tissue
- Connective tissue proper

Submit

Links

- List of all tests: Histology MCQs
- Portal:Histology