1. **A patient with a decreased number of red blood cells would be most likely to have disorders with which of the following:**
2. antibody production
3. oxygen delivery to tissues
4. clot formation
5. bacterial infections
6. arterial tension

**2. Select the statements about red blood cells that are incorrect:**

1. mature red blood cells lack nuclei
2. red blood cells contain hemoglobin
3. deoxyhemoglobin carries oxygen
4. red blood cells lack mitochondria
5. red blood cells have Golgi system

**3. The precursor of all lines of blood cells is the:**

1. myeloblast
2. hemocytoblast
3. proerythroblast
4. progranulocyte
5. lymphoblast

**4. When red blood cells are worn out, part of their components are recycled while others are disposed. Select the INCORRECT statement about destruction of red blood cells.**

1. the greenish pigment, biliverdin, is recycled to the bone marrow.
2. iron is carried to the bone marrow by a protein called transferrin.
3. biliverdin and bilirubin impart color to bile.
4. macrophages in the liver and spleen destroy worn out red blood cells.
5. red cells are destroyed by intact heart valves

**5. Which dietary component(s) is/are needed for DNA synthesis, and thus greatly influence the production of red blood cells:**

1. calcium
2. iron
3. vitamin B12 and folic acid
4. protein
5. lipids

**6. Which type of anemia is the most common:**

1. aplastic anemia
2. pernicious anemia
3. hemolytic anemia
4. iron deficiency anemia
5. posthemorrhagic

**7. The type of white blood cell that often arrives at the site of infection first, and contains granules that stain light purple is a:**

1. basophil
2. eosinophil
3. neutrophil
4. monocyte
5. histiocyte

**8. The largest cells in the blood that leave the bloodstream to become macrophages are the:**

1. eosinophils
2. monocytes
3. basophils
4. neutrophils
5. epitheliocyte

**9. A person with eosinophilia is most likely suffering from:**

1. allergies
2. anemia
3. intestinal parasites
4. diabetes
5. syphilis

**10. Which blood cell can be described as being a biconcave disc:**

1. platelet
2. neutrophil
3. eosinophil
4. erythrocyte
5. macrophage

**11. What is the term for erythrocytes of various sizes:**

1. anisocytosis
2. poikilocytosis
3. anemias
4. polycythemias
5. thalassemia

**12. Name macrocytic normochromic anemias:**

1. pernicious anemia
2. sideroblastic anemia
3. folate deficiency anemia
4. iron deficiency anemia
5. sickle cell anemia

**13. Large erythrocytes with normal hemoglobin concentrations are characteristic for:**

1. normocytic-normochromic anemia
2. microcytic-hypochromic anemia:
3. macrocytic normochromic anemia
4. macrocytic hypochromic anemia
5. microcytic hyperchromic anemia

**14. Deficiency of vitamin B-12 and folate acid cause anemia, bacause:**

1. stem cells are unable to differentiate into erythrocytes
2. erythrocytes have malformed hemoglobin molecules
3. erythrocytes have a shorter life span and die prematurely
4. erythrocytes have decreased O2 carrying capacity
5. erythrocytes have increased O2 carrying capacity

**15. Which of the following diseases may be associated with anemia:**

1. chronic renal failure
2. hepatic failure
3. gastric cancer
4. chronic leukemia
5. all of the listed

**16. Identify histological subtypes of Hodgkin's disease:**

1. immunoblastic
2. nodular sclerosis
3. mixed cellularity
4. eosinophilic
5. lymphoblastic predominance

**17. Which type of leukemia is characterized by diffuse leukemic infiltration in the liver along sinusoids:**

1. chronic lymphocytic leukemia
2. acute eritromieloblastic leukemia
3. acute lymphoblastic leukemia
4. chronic myeloid leukemia
5. chronic erythroleukemia

**18. Highlight neoplastic diseases of the hematopoietic tissues with systemic manifestations:**

1. Hodgkin's disease with nodular sclerosis
2. Hodgkin's disease with lymphocyte depletion
3. leukemias
4. leucoderma
5. Hodgkin's disease with mixed cellularity

**19. Acute lymphoblastic leukemia:**

1. disease of children
2. disease of adults
3. is associated with generalized lymphadenopathy
4. prognosis depends on phenotype and karyotype
5. treatment depends on phenotype and karyotype

**20. The following forms of chronic leukemia can be distinguished:**

1. myelocytic leukemia
2. undifferentiated leukemia
3. lymphocytic leukemia
4. lymphoblastic leukemia
5. monocytic leukemia

**21. Depending on the degree of blood cell maturity leukemias is classified in:**

1. leukopenic
2. acute
3. aleukemic
4. chronic
5. leukemic
6. **Acute myeloid leukemia:**
7. has divers origin
8. disease of children
9. disease of adults
10. relapse is rare
11. relapse is frequent

**23. Chronic lymphocytic leukemia:**

1. usually occurs in children
2. usually occurs in middle-aged and elderly
3. develop of the T-lymphopoiesis syastem
4. develop of the B-lymphopoiesis system
5. has relatively long benign course

**24. Characteristic signs of acute lymphoblastic leucosis:**

1. afects children and adolescents
2. is resistant to chemotherapy
3. atrophy of the spleen
4. leukemic infiltrates in thymus and anterior mediastinum
5. tumor cells belong to T-system of lymphopoiesis

**25. Histological diagnosis criteria for Hodgkin's lymphoma:**

1. mixed cellularity
2. Reed-Sternberg cells
3. diffuse fibrosis
4. lymphocytes proliferation
5. hystiocytes proliferation

**26. Which of the following statements regarding multiple myeloma are correct:**

1. flat bones are mostlly affected
2. tumor cells secrete pathological immunoglobulins
3. tumor cells are T-cell derived;
4. AL- amyloidosis is the most common complication
5. is epidemic process

**27. Which of the listed criteria are associated to multiple myeloma:**

1. renal failure
2. hypercalcemia
3. T-cell proliferation
4. tumor cells secrete paraproteins
5. myocardial infarction.

**28. Which of the following listed statements regarding Hodgkin disease are correct:**

1. massive hepatomegaly;
2. mixed cellularity
3. lymphocytes depletion
4. nodular sclerosis
5. diffuse sclerosis.

**29. Leukemia are characterised by:**

1. generalized lymphadenopathy
2. cerebral abscess
3. leukemic infiltration of parenchymal organs
4. splenomegaly
5. myocardial infarction.

**30. Hemolytic anemia due to extravascular hemolysis is characterized by:**

1. hepatomegaly
2. erythremia
3. splenomegaly
4. hyperemia
5. jaundice

**31. Iron deficient anemia can be caused by:**

1. insufficient absorption of iron
2. increased iron resorption
3. as a result of gastric or duodenal resection
4. as a result of appendectomy
5. hemorrhages

**32. Which of the following are etiologic types of hemolytic anemia:**

1. pernicious anemia
2. toxic anemia
3. infectious anemia
4. post transfusion anemia
5. B-12 deficiency anemia

**33. Anemia can be caused by:**

1. hemorrhage
2. erythremia
3. insufficient erythropoiesis of the bone marrow
4. physiologic hemolysis of erythrocytes
5. pathological hemolysis of erythrocytes

**34. Hereditary deficiency of fundic gastric glands can lead to:**

1. post-hemorrhagic anemia
2. pernicious anemia
3. Biermer's disease
4. hemolytic anemia
5. dishormonal anemia

**35. By evolution posthemorrhagic anemia can be:**

1. intravascular anemia
2. acute anemia
3. extravascular anemia
4. chronic anemia
5. vitamin B-12 deficiency anemia

**36. Intravascular hemolytic anemia is caused by:**

1. toxins
2. poisons
3. extensive burns
4. blood transfusion
5. insufficiency of somatotropin

**37. Morphological characteristics of aplastic anemia:**

1. hypocellular bone marrow
2. hypercellular bone marrow
3. increased amount of adipose tissue
4. increased number of megaloblasts
5. decreased amount of adipose tissue

**38. After a hearty but not fatal hemorrhage the following changes occur:**

1. bone marrow become yellow
2. bone marrow become red
3. megaloblastic hematopoiesis
4. extramedulary hematopoiesis
5. reticulocytosis

**39. B-12 deficiency anemia is:**

1. posthemorrhagic
2. megaloblastic
3. leukoanemic
4. hyperchromic
5. hypochromic

**40. Deficient anemia may develop due to insufficiency of:**

1. iron
2. vitamin B-12
3. vitamin C
4. vitamina K
5. folic acid

**41. Iron deficiency anemia develops in the following condition:**

1. teeth extraction
2. gastric resection
3. mastectomy
4. intestinal resection
5. nephrectomy
6. **All of the following statements are true regarding lymphomas, EXCEPT:**
7. Hodgkin's lymphoma arises in the bone marrow
8. the malignant cell of Hodgkin's lymphoma is the Reed-Sternberg cell
9. the most common form of Hodgkin's lymphoma – nodular sclerosis
10. follicular lymphoma is B-cell lymphoma
11. the malignant cell of Hodgkin's lymphoma is the Langhans cell