

## Chapter 2: From Hematopoiesis to the Complete Blood Count

### Multiple Choice

Identify the choice that best completes the statement or answers the question.

- \_\_\_ 1. What is the average M:E ratio for normal adult bone marrow?
- 1:3
  - 4:1
  - 1:4
  - 6:1
- \_\_\_ 2. The key organs involved in extramedullary hematopoiesis include the:
- Kidney and thymus
  - Lymph nodes and heart
  - Liver and spleen
  - Kidney and liver
- \_\_\_ 3. Which of these assays is the best test to assess the bone marrow's response to anemic stress?
- Hemoglobin value
  - MCV value
  - Reticulocyte count
  - Hematocrit
- \_\_\_ 4. Antibody-coated red cells that have their antibodies stripped away in the spleen usually reappear in the circulation as:
- Spherocytes
  - Microcytes
  - Acanthocytes
  - Burr cells
- \_\_\_ 5. A peripheral blood smear indicator of *ineffective* bone marrow response is:
- The presence of basophilic stippling
  - A lack of polychromasia
  - Higher numbers of nucleated red cells
  - An increased number of red cells
- \_\_\_ 6. A patient with the following values—RBC =  $4.01 \times 10^{12}/L$ , Hgb = 12.5 g/dL, and Hct = 37.2%—will most likely have which of the following RBC indices?
- MCV = 92.8 fL, MCH = 31.2 pg, MCHC = 33.6%
  - MCV = 92.8 fL, MCH = 33.6 pg, MCHC = 31.2%
  - MCV = 107.8 fL, MCH = 32.1 pg, MCHC = 33.6%
  - MCV = 132.2 fL, MCH = 32.1 pg, MCHC = 33.5%
- \_\_\_ 7. The hormone responsible for red blood cell development in the bone marrow is:
- Thyroxin
  - Insulin
  - Leukopoietin
  - Erythropoietin

- \_\_\_ 8. Which of the following sites is the most preferable site for bone marrow aspiration and biopsy in adults?
- Sternum
  - Iliac crest
  - Fibula
  - Vertebra
- \_\_\_ 9. A patient's hemoglobin is 12.3 g/dL. On the peripheral smear, the red cells appear normochromic, normocytic. The hematocrit value that correlates with these data is:
- 34%
  - 37%
  - 40%
  - 43%
- \_\_\_ 10. A Wright-stained smear of a patient with an elevated reticulocyte count should show:
- Polychromasia
  - Agglutination
  - Rouleaux
  - Microcytosis
- \_\_\_ 11. Erythropoietin is produced by the:
- Kidneys
  - Liver
  - Spleen
  - Thymus gland
- \_\_\_ 12. Bone marrow aspiration is usually required in conditions of:
- Anemia
  - Hypoxia
  - Leukemia
  - Hepatosplenomegaly
- \_\_\_ 13. Opsonizing antibodies produced by the spleen serve to:
- Strip the capsule from bacterial pathogens
  - Recycle erythrocyte byproducts
  - Aid in extramedullary hematopoiesis
  - Fight viral infection
- \_\_\_ 14. The spleen harbors \_\_\_ of the circulatory platelet mass.
- one-quarter
  - one-third
  - one-half
  - three-quarters
- \_\_\_ 15. Mature red blood cells leave the bone marrow and enter the circulation via the:
- Reticuloendothelial system
  - Osteoclasts
  - Spleen

- d. Bone marrow sinuses
- \_\_\_ 16. Correlation checks between the red blood cell count, the hemoglobin, and the hematocrit are significant parts of QA (quality assurance) in the hematology lab. These correlations are known as:
- a. Delta checks
  - b. The rules of three
  - c. Quality control
  - d. Analytical variables
- \_\_\_ 17. The \_\_\_\_\_ is one of the most stable parameters in a CBC.
- a. MCV
  - b. Hct
  - c. MCHC
  - d. MCH
- \_\_\_ 18. The CBC parameter that gives insight as to the amount of anisocytosis present in a specimen is:
- a. RDW
  - b. MCHC
  - c. MCV
  - d. Hgb

**True/False**

*Indicate whether the statement is true or false.*

- \_\_\_ 19. T cells are responsible for humoral immunity.
- \_\_\_ 20. Patients with moderate anemias (7 to 10 g/dL) may be asymptomatic.

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### Answer Section

#### MULTIPLE CHOICE

1. ANS: B                   PTS: 1
2. ANS: C                   PTS: 1
3. ANS: C                   PTS: 1
4. ANS: A                   PTS: 1
5. ANS: B                   PTS: 1
6. ANS: A                   PTS: 1
7. ANS: D                   PTS: 1
8. ANS: B                   PTS: 1
9. ANS: B                   PTS: 1
10. ANS: A                   PTS: 1
11. ANS: A                   PTS: 1
12. ANS: C                   PTS: 1
13. ANS: A                   PTS: 1
14. ANS: B                   PTS: 1
15. ANS: D                   PTS: 1
16. ANS: B                   PTS: 1
17. ANS: A                   PTS: 1
18. ANS: A                   PTS: 1

#### TRUE/FALSE

19. ANS: F                   PTS: 1
20. ANS: T                   PTS: 1