

Specific Examination Objectives

| Question Topic | Total | Average Difficulty |
|-------------------------|-------|--------------------|
| Blood Smear Examination | 1 | 1.00 |
| Cell Counts | 8 | 1.75 |
| Hemacytometer | 3 | 3.00 |
| Hematocrit | 2 | 1.50 |
| Hemoglobin | 15 | 1.73 |
| Hemolytic Anemia | 1 | 2.00 |
| Indices | 15 | 2.27 |
| Leukocyte Metabolism | 7 | 1.00 |
| RBCs | 5 | 2.20 |
| WBC Morphology | 1 | 2.00 |
| WBCs | 1 | 1.00 |

| Exam ID | Total Questions | Average Difficulty |
|------------------------|-----------------|--------------------|
| CLS 312/432 Lecture #3 | 59 | 1.86 |

On this examination, the student will be expected to:

1. [Level 2/Hematology/Cell Counts/431]
Given appropriate laboratory data, calculate results by applying the 'Times-3' rule.
2. [Level 2/Hematology/Cell Counts/440]
Given appropriate laboratory data, correct a WBC count for the presence of nucleated red blood cells.
3. [Level 1/Hematology/Cell Counts/442]
Explain what effects the presence of a cold agglutinin might have on the automated determination of red blood cell counts and RBC indices.
4. [Level 2/Hematology/Cell Counts/449]
State the conditions which might produce an elevated absolute eosinophil count.
5. [Level 1/Hematology/Cell Counts/460]
Explain the principle of the Coulter or 'impedance' method of cell counting and compare that method to the so called 'optical' method of cell counting.
6. [Level 1/Hematology/Cell Counts/468]
State the major source of error when using an automated cell counter.
7. [Level 2/Hematology/Cell Counts/469]
Explain the 'Times-3' rule.
8. [Level 3/Hematology/Cell Counts/476]
Given appropriate laboratory data, correct the WBC count for the presence of nucleated red blood cells.
9. [Level 3/Hematology/Hemacytometer/867]
Given appropriate laboratory data, calculate the results of a cell count done on a hemacytometer.
10. [Level 3/Hematology/Hemacytometer/868]
Given appropriate laboratory data, calculate the results of a cell count done on a hemacytometer.
11. [Level 3/Hematology/Hemacytometer/869]
Given appropriate laboratory data, calculate the results of a cell count done on a hemacytometer.

12. [Level 1/Hematology/Hematocrit/871]
State the expected results of the hematocrit determination in anemia.
13. [Level 2/Hematology/Hematocrit/877]
Given appropriate laboratory data, calculate results by applying the 'Times-3' rule.
14. [Level 2/Hematology/Hemoglobin/913]
Explain how lipemia might affect the results of a hemoglobin assay performed by the Cyanmethemoglobin Method.
15. [Level 3/Hematology/Hemoglobin/915]
Explain the significance of a change in a patient's hemoglobin values.
16. [Level 2/Hematology/Hemoglobin/924]
Explain the process by which conjugated bilirubin is passed to the intestine for excretion.
17. [Level 1/Hematology/Hemoglobin/930]
State the normal hemoglobin value for a newborn infant.
18. [Level 2/Hematology/Hemoglobin/931]
State why the cyanmethemoglobin method is the preferred method for hemoglobin determination.
19. [Level 2/Hematology/Hemoglobin/937]
Define 'haptoglobin'.
20. [Level 1/Hematology/Hemoglobin/953]
Define 'glucuronyl transferase'.
21. [Level 1/Hematology/Hemoglobin/961]
State the normal hemoglobin value of an adult male.
22. [Level 3/Hematology/Hemoglobin/962]
Explain the effects that hemolysis might have on the detection of urinary urobilinogen.
23. [Level 1/Hematology/Hemoglobin/964]
Define 'Drabkin's Solution'.
24. [Level 1/Hematology/Hemoglobin/966]
Define 'carboxyhemoglobin'.
25. [Level 2/Hematology/Hemoglobin/967]
State the major production site of urobilinogen.
26. [Level 2/Hematology/Hemoglobin/970]
Define 'bilirubin glucuronide'.
27. [Level 1/Hematology/Hemoglobin/974]
Explain the effects that a large amount of sulfhemoglobin would have on the measurement of hemoglobin by the Cyanmethemoglobin method.
28. [Level 2/Hematology/Hemoglobin/977]
Explain the principle of the cyanmethemoglobin determination.
29. [Level 2/Hematology/Hemolytic Anemia/1212]
Explain the effect the presence of large numbers of spherocytes would have on a calculated MCHC.
30. [Level 1/Hematology/Indices/1297]
Define 'MCV'.
31. [Level 2/Hematology/Indices/1298]
Given appropriate laboratory data, calculate the MCHC of a patient.

32. [Level 1/Hematology/Indices/1301]
State the expected results of the MCH in a patient having a normochromic, normocytic anemia.
33. [Level 2/Hematology/Indices/1304]
Correlate changes in the RBC Indices (MCV, MCH, MCHC) with the morphologic appearance of red blood cells on a Wright Stained blood smear.
34. [Level 2/Hematology/Indices/1306]
Correlate a decrease in the MCHC index with the morphologic appearance of red blood cells on a Wright Stained blood smear.
35. [Level 3/Hematology/Indices/1307]
State the effects which the presence of a cold agglutinin might have on calculated indices obtained on an automated cell counter.
36. [Level 3/Hematology/Indices/1308]
Correlate a patient's RBC indices values with their morphological appearance on a peripheral blood smear.
37. [Level 2/Hematology/Indices/1314]
Explain the effect that an incorrectly determined hematocrit value would have on a patient's calculated RBC indices.
38. [Level 3/Hematology/Indices/1321]
Given appropriate laboratory data, calculate the MCH value for a patient.
39. [Level 3/Hematology/Indices/1323]
Given appropriate laboratory data, calculate the RBC indices for a patient.
40. [Level 3/Hematology/Indices/1325]
Given appropriate laboratory data, calculate the MCH of a patient.
41. [Level 3/Hematology/Indices/1326]
Given appropriate laboratory data, calculate the MCV of a patient.
42. [Level 2/Hematology/Indices/1329]
State the expected results of the MCV in a patient having macrocytic anemia.
43. [Level 3/Hematology/Indices/1331]
Given appropriate laboratory data, calculate the MCHC of a patient.
44. [Level 1/Hematology/Indices/1332]
Explain the effect the presence of large numbers of spherocytes would have on a calculated MCHC.
45. [Level 1/Hematology/Leukocyte Metabolism/1681]
State the metabolic end product of the major pathway of leukocyte metabolism.
46. [Level 1/Hematology/Leukocyte Metabolism/1682]
State the primary source of blood glycogen.
47. [Level 1/Hematology/Leukocyte Metabolism/1683]
Explain why cytoplasmic basophilia decreases as a white blood cell matures.
48. [Level 1/Hematology/Leukocyte Metabolism/1684]
Identify the cell surface receptor on basophils that plays a major part in the development of Type I hypersensitivity reactions.
49. [Level 1/Hematology/Leukocyte Metabolism/1685]
Explain the effects that endogenous adrenal corticosteroids have on the peripheral blood eosinophil count.

50. [Level 1/Hematology/Leukocyte Metabolism/1686]
State the location of the production of WBC specific granules.
51. [Level 1/Hematology/Leukocyte Metabolism/1687]
Define 'Dohle Body'.
52. [Level 2/Hematology/RBCs/2453]
State the approximate percentage of erythrocytes that must be removed from the body every 24 hours by the cells of the reticuloendothelial system in a normal patient.
53. [Level 1/Hematology/RBCs/2461]
Define 'integral membrane protein'.
54. [Level 3/Hematology/RBCs/2465]
State the percentage of destruction of senescent RBCs that normally occurs via extravascular hemolysis.
55. [Level 2/Hematology/RBCs/2466]
Define hemopexin.
56. [Level 3/Hematology/RBCs/2474]
State the expected color of urine containing a high level of methemoglobin.
57. [Level 2/Hematology/WBC Morphology/2792]
Explain how B and T lymphocytes might be distinguished from one another utilizing flow cytometry.
58. [Level 1/Hematology/WBCs/2897]
State the dimensions of the Improved Neubauer Ruling on the counting chamber.
59. [Level 1/Immunology/Blood Smear Examination/2976]
Define anisocytosis.

Levels given in brackets at the beginning of the question objective indicate the level of difficulty for the actual question on this examination, NOT the level of difficulty for the stated objective. Levels of difficulty were developed using Bloom, et.al. Taxonomy of Educational Objectives. Also shown in the brackets are the Category of the question, the Topic of the question, and the number of the question in the database.

Explanation of Categories in the Cognitive Domain: (with Outcome-Illustrating Verbs)

Level 1: Recall

Knowledge of terminology; specific facts; ways and means of dealing with specifics (conventions, trends and sequences, classifications and categories, criteria, methodology); universals and abstractions in a field (principles and generalizations, theories and structures). Knowledge is (here) defined as the remembering (recalling) of appropriate, previously learned information.

* defines; describes; enumerates; identifies; labels; lists; matches; names; reads; records; reproduces; selects; states; views.

Level 2: Comprehension

Grasping (understanding) the meaning of informational materials.

* classifies; cites; converts; describes; discusses; estimates; explains; generalizes; gives examples; makes sense out of; paraphrases; restates (in own words); summarizes; traces; understands.

Level 3: Application

The use of previously learned information in new and concrete situations to solve problems that have single or best answers.

* acts; administers; articulates; assesses; charts; collects; computes; constructs; contributes; controls; determines; develops; discovers; establishes; extends; implements; includes; informs; instructs; operationalizes; participates; predicts; prepares; preserves; produces; projects; provides; relates; reports; shows; solves; teaches; transfers; uses; utilizes.

Taxonomy of educational objectives : the classification of educational goals ; / by a committee of college and university examiners ; Benjamin S. Bloom, editor [and others] IMPRINT New York : D. McKay Co., Inc., c1956-1964 (1971-72 printing) DESCRIPT. 2 v. in 1 : ill. ; 22 cm. NOTE Vol.2 by D.R. Krathwohl and others.

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