

# Technical Curricula

*Objectives are derived from the recommendations of the ASCP Board of Registry Technical Curricula document. All letter references are to the Knowledge/Ability criteria listed in those documents which are found at: [http://www.ascp.org/bor/directors/tech\\_mt/](http://www.ascp.org/bor/directors/tech_mt/)*

*Following the completion of CLS 311 (Immunology), CLS 312 (Hematology), and CLS 322 (Clinical Hematology), as applicable, the student will be able to accomplish each of the objectives outlined below:*

*updated 12/12/2007*

## Hematology/Hemostasis

### Topic

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#### Activated Clotting Time

B - The student has observed this procedure.

A - Student is able to describe procedures for specimen collection, handling, storage, and preparation.

B - Student is able to discuss the physiologic theory for the procedure.

C - Student can state the principles of method(s).

D - Student can evaluate the disease manifestations/clinical correlations of the procedure.

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#### Alkali Denaturation Test for Hgb F

B - The student has observed this procedure.

A - Student is able to describe procedures for specimen collection, handling, storage, and preparation.

B - Student is able to discuss the physiologic theory for the procedure.

C - Student can state the principles of method(s).

D - Student can evaluate the disease manifestations/clinical correlations of the procedure.

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#### Automated Cell Counters

I-D Student can operate the instrument proficiently and is able to perform in job setting after employee orientation.

I-A Student will be able to describe the essential components of the instrument.

## Hematology/Hemostasis

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#### **Automated Cell Counters**

- I-B Student will be able to state the principles of operation of the instrument.
  - I-C Student will describe the preventative maintenance procedures necessary for the instrument.
  - I-D Student recognizes unexpected results and either takes corrective action or refers to supervisor.
  - I-E Student can differentiate and resolve technical, instrument, or physiologic causes of unexpected results.
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#### **Automated Platelet Counts**

- D - The student can perform the procedure proficiently and is able to perform in job setting after employee orientation.
  - A - Student is able to describe procedures for specimen collection, handling, storage, and preparation.
  - B - Student is able to discuss the physiologic theory for the procedure.
  - C - Student can state the principles of method(s).
  - D - Student can evaluate the disease manifestations/clinical correlations of the procedure.
  - E - Student can differentiate/resolve technical, instrument, physiologic causes of problems or unexpected test results.
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#### **Automated RBC Counts**

- D - The student can perform the procedure proficiently and is able to perform in job setting after employee orientation.
  - A - Student is able to describe procedures for specimen collection, handling, storage, and preparation.
  - B - Student is able to discuss the physiologic theory for the procedure.
  - C - Student can state the principles of method(s).
  - D - Student can evaluate the disease manifestations/clinical correlations of the procedure.
  - E - Student can differentiate/resolve technical, instrument, physiologic causes of problems or unexpected test results.
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## Hematology/Hemostasis

### *Topic*

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#### **Automated Stainers**

- I-D Student can operate the instrument proficiently and is able to perform in job setting after employee orientation.
  - I-A Student will be able to describe the essential components of the instrument.
  - I-B Student will be able to state the principles of operation of the instrument.
  - I-C Student will describe the preventative maintenance procedures necessary for the instrument.
  - I-D Student recognizes unexpected results and either takes corrective action or refers to supervisor.
  - I-E Student can differentiate and resolve technical, instrument, or physiologic causes of unexpected results.
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#### **Automated White Blood Cell Count**

- D - The student can perform the procedure proficiently and is able to perform in job setting after employee orientation.
  - A - Student is able to describe procedures for specimen collection, handling, storage, and preparation.
  - B - Student is able to discuss the physiologic theory for the procedure.
  - C - Student can state the principles of method(s).
  - D - Student can evaluate the disease manifestations/clinical correlations of the procedure.
  - E - Student can differentiate/resolve technical, instrument, physiologic causes of problems or unexpected test results.
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#### **Automated White Blood Cell Differential**

- I-D Student can operate the instrument proficiently and is able to perform in job setting after employee orientation.
- I-A Student will be able to describe the essential components of the instrument.
- I-B Student will be able to state the principles of operation of the instrument.
- I-C Student will describe the preventative maintenance procedures necessary for the instrument.
- I-D Student recognizes unexpected results and either takes corrective action or refers to supervisor.

## Hematology/Hemostasis

### *Topic*

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#### **Automated White Blood Cell Differential**

I-E Student can differentiate and resolve technical, instrument, or physiologic causes of unexpected results.

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#### **Bleeding Time**

C - Student has performed this procedure satisfactorily on practice specimens but may require additional experience.

A - Student is able to describe procedures for specimen collection, handling, storage, and preparation.

B - Student is able to discuss the physiologic theory for the procedure.

C - Student can state the principles of method(s).

D - Student can evaluate the disease manifestations/clinical correlations of the procedure.

E - Student can differentiate/resolve technical, instrument, physiologic causes of problems or unexpected test results.

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#### **Bone Marrow Evaluation**

B - The student has observed this procedure.

A - Student is able to describe procedures for specimen collection, handling, storage, and preparation.

B - Student is able to discuss the physiologic theory for the procedure.

C - Student can state the principles of method(s).

D - Student can evaluate the disease manifestations/clinical correlations of the procedure.

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#### **Carboxyhemoglobin**

A - No ability to perform this procedure is required.

A - Student is able to describe procedures for specimen collection, handling, storage, and preparation.

B - Student is able to discuss the physiologic theory for the procedure.

C - Student can state the principles of method(s).

## Hematology/Hemostasis

### *Topic*

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#### **Carboxyhemoglobin**

D - Student can evaluate the disease manifestations/clinical correlations of the procedure.

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#### **CD4**

A - No ability to perform this procedure is required.

B - Student is able to discuss the physiologic theory for the procedure.

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#### **CD8**

A - No ability to perform this procedure is required.

B - Student is able to discuss the physiologic theory for the procedure.

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#### **Chloroacetate Esterase Stain**

B - The student has observed this procedure.

A - Student is able to describe procedures for specimen collection, handling, storage, and preparation.

B - Student is able to discuss the physiologic theory for the procedure.

C - Student can state the principles of method(s).

D - Student can evaluate the disease manifestations/clinical correlations of the procedure.

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#### **Clot Retraction**

C - Student has performed this procedure satisfactorily on practice specimens but may require additional experience.

A - Student is able to describe procedures for specimen collection, handling, storage, and preparation.

B - Student is able to discuss the physiologic theory for the procedure.

C - Student can state the principles of method(s).

D - Student can evaluate the disease manifestations/clinical correlations of the procedure.

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## Hematology/Hemostasis

### *Topic*

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**Cytocentrifuge** C - Student has performed this procedure satisfactorily on practice specimens but may require additional experience.

I-A Student will be able to describe the essential components of the instrument.

I-B Student will be able to state the principles of operation of the instrument.

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**Dithonite Tube Test** C - Student has performed this procedure satisfactorily on practice specimens but may require additional experience.

A - Student is able to describe procedures for specimen collection, handling, storage, and preparation.

B - Student is able to discuss the physiologic theory for the procedure.

C - Student can state the principles of method(s).

D - Student can evaluate the disease manifestations/clinical correlations of the procedure.

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**Electromechanical Clot Det. (Fibrometer)** I-C Student can operate the instrument satisfactorily with practice specimens but may require additional experience.

I-A Student will be able to describe the essential components of the instrument.

I-B Student will be able to state the principles of operation of the instrument.

I-C Student will describe the preventative maintenance procedures necessary for the instrument.

I-D Student recognizes unexpected results and either takes corrective action or refers to supervisor.

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**Factor Assays** B - The student has observed this procedure.

A - Student is able to describe procedures for specimen collection, handling, storage, and preparation.

B - Student is able to discuss the physiologic theory for the procedure.

## Hematology/Hemostasis

### *Topic*

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#### **Factor Assays**

- C - Student can state the principles of method(s).
  - D - Student can evaluate the disease manifestations/clinical correlations of the procedure.
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#### **Factor V Leiden**

- C - Student has performed this procedure satisfactorily on practice specimens but may require additional experience.
  - A - Student is able to describe procedures for specimen collection, handling, storage, and preparation.
  - B - Student is able to discuss the physiologic theory for the procedure.
  - C - Student can state the principles of method(s).
  - D - Student can evaluate the disease manifestations/clinical correlations of the procedure.
  - E - Student can differentiate/resolve technical, instrument, physiologic causes of problems or unexpected test results.
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#### **Fibrinogen**

- D - The student can perform the procedure proficiently and is able to perform in job setting after employee orientation.
  - A - Student is able to describe procedures for specimen collection, handling, storage, and preparation.
  - B - Student is able to discuss the physiologic theory for the procedure.
  - C - Student can state the principles of method(s).
  - D - Student can evaluate the disease manifestations/clinical correlations of the procedure.
  - E - Student can differentiate/resolve technical, instrument, physiologic causes of problems or unexpected test results.
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#### **Flow Cytometer**

- I-B Student has observed this instrument or method.
- I-A Student will be able to describe the essential components of the instrument.
- I-B Student will be able to state the principles of operation of the instrument.

## Hematology/Hemostasis

### *Topic*

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#### **Fluorescent Spot Test for PK deficiency**

A - No ability to perform this procedure is required.

B - Student is able to discuss the physiologic theory for the procedure.

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#### **Folate**

B - The student has observed this procedure.

A - Student is able to describe procedures for specimen collection, handling, storage, and preparation.

B - Student is able to discuss the physiologic theory for the procedure.

C - Student can state the principles of method(s).

D - Student can evaluate the disease manifestations/clinical correlations of the procedure.

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#### **G6PD-deficiency Fluorescent Spot Test**

A - No ability to perform this procedure is required.

B - Student is able to discuss the physiologic theory for the procedure.

D - Student can evaluate the disease manifestations/clinical correlations of the procedure.

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#### **Ham's Acidified Serum Test**

B - The student has observed this procedure.

A - Student is able to describe procedures for specimen collection, handling, storage, and preparation.

B - Student is able to discuss the physiologic theory for the procedure.

C - Student can state the principles of method(s).

D - Student can evaluate the disease manifestations/clinical correlations of the procedure.

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## Hematology/Hemostasis

### *Topic*

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#### **Haptoglobin**

B - The student has observed this procedure.

A - Student is able to describe procedures for specimen collection, handling, storage, and preparation.

B - Student is able to discuss the physiologic theory for the procedure.

C - Student can state the principles of method(s).

D - Student can evaluate the disease manifestations/clinical correlations of the procedure.

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#### **Hematocrit (spun)**

D - The student can perform the procedure proficiently and is able to perform in job setting after employee orientation.

A - Student is able to describe procedures for specimen collection, handling, storage, and preparation.

B - Student is able to discuss the physiologic theory for the procedure.

C - Student can state the principles of method(s).

D - Student can evaluate the disease manifestations/clinical correlations of the procedure.

E - Student can differentiate/resolve technical, instrument, physiologic causes of problems or unexpected test results.

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#### **Hemoglobin**

D - The student can perform the procedure proficiently and is able to perform in job setting after employee orientation.

A - Student is able to describe procedures for specimen collection, handling, storage, and preparation.

B - Student is able to discuss the physiologic theory for the procedure.

C - Student can state the principles of method(s).

D - Student can evaluate the disease manifestations/clinical correlations of the procedure.

E - Student can differentiate/resolve technical, instrument, physiologic causes of problems or unexpected test results.

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## Hematology/Hemostasis

### *Topic*

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#### **Hemoglobin Electrophoresis**

B - The student has observed this procedure.

A - Student is able to describe procedures for specimen collection, handling, storage, and preparation.

B - Student is able to discuss the physiologic theory for the procedure.

C - Student can state the principles of method(s).

D - Student can evaluate the disease manifestations/clinical correlations of the procedure.

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#### **Latex D-Dimer Assay**

C - Student has performed this procedure satisfactorily on practice specimens but may require additional experience.

A - Student is able to describe procedures for specimen collection, handling, storage, and preparation.

B - Student is able to discuss the physiologic theory for the procedure.

C - Student can state the principles of method(s).

D - Student can evaluate the disease manifestations/clinical correlations of the procedure.

E - Student can differentiate/resolve technical, instrument, physiologic causes of problems or unexpected test results.

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#### **Latex FDP Assay**

D - The student can perform the procedure proficiently and is able to perform in job setting after employee orientation.

A - Student is able to describe procedures for specimen collection, handling, storage, and preparation.

B - Student is able to discuss the physiologic theory for the procedure.

C - Student can state the principles of method(s).

D - Student can evaluate the disease manifestations/clinical correlations of the procedure.

E - Student can differentiate/resolve technical, instrument, physiologic causes of problems or unexpected test results.

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## Hematology/Hemostasis

### *Topic*

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#### **Leukocyte Alkaline Phosphatase Stain**

B - The student has observed this procedure.

A - Student is able to describe procedures for specimen collection, handling, storage, and preparation.

B - Student is able to discuss the physiologic theory for the procedure.

C - Student can state the principles of method(s).

D - Student can evaluate the disease manifestations/clinical correlations of the procedure.

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#### **Manual Differential with Morphology**

D - The student can perform the procedure proficiently and is able to perform in job setting after employee orientation.

A - Student is able to describe procedures for specimen collection, handling, storage, and preparation.

B - Student is able to discuss the physiologic theory for the procedure.

C - Student can state the principles of method(s).

D - Student can evaluate the disease manifestations/clinical correlations of the procedure.

E - Student can differentiate/resolve technical, instrument, physiologic causes of problems or unexpected test results.

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#### **Manual Platelet Counts (Unopette)**

D - The student can perform the procedure proficiently and is able to perform in job setting after employee orientation.

A - Student is able to describe procedures for specimen collection, handling, storage, and preparation.

B - Student is able to discuss the physiologic theory for the procedure.

C - Student can state the principles of method(s).

D - Student can evaluate the disease manifestations/clinical correlations of the procedure.

## Hematology/Hemostasis

### *Topic*

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#### **Manual Platelet Counts (Unopette)**

E - Student can differentiate/resolve technical, instrument, physiologic causes of problems or unexpected test results.

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#### **Manual White Blood Cell Count**

D - The student can perform the procedure proficiently and is able to perform in job setting after employee orientation.

A - Student is able to describe procedures for specimen collection, handling, storage, and preparation.

B - Student is able to discuss the physiologic theory for the procedure.

C - Student can state the principles of method(s).

D - Student can evaluate the disease manifestations/clinical correlations of the procedure.

E - Student can differentiate/resolve technical, instrument, physiologic causes of problems or unexpected test results.

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#### **Microhematocrit Centrifuge**

I-D Student can operate the instrument proficiently and is able to perform in job setting after employee orientation.

I-A Student will be able to describe the essential components of the instrument.

I-B Student will be able to state the principles of operation of the instrument.

I-C Student will describe the preventative maintenance procedures necessary for the instrument.

I-D Student recognizes unexpected results and either takes corrective action or refers to supervisor.

I-E Student can differentiate and resolve technical, instrument, or physiologic causes of unexpected results.

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#### **Mixing Studies**

C - Student has performed this procedure satisfactorily on practice specimens but may require additional experience.

A - Student is able to describe procedures for specimen collection, handling, storage, and preparation.

B - Student is able to discuss the physiologic theory for the procedure.

## Hematology/Hemostasis

### *Topic*

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#### **Mixing Studies**

- C - Student can state the principles of method(s).
  - D - Student can evaluate the disease manifestations/clinical correlations of the procedure.
  - E - Student can differentiate/resolve technical, instrument, physiologic causes of problems or unexpected test results.
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#### **Myeloperoxidase Stain**

- B - The student has observed this procedure.
  - A - Student is able to describe procedures for specimen collection, handling, storage, and preparation.
  - B - Student is able to discuss the physiologic theory for the procedure.
  - C - Student can state the principles of method(s).
  - D - Student can evaluate the disease manifestations/clinical correlations of the procedure.
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#### **Non Specific Esterase Stain**

- B - The student has observed this procedure.
  - A - Student is able to describe procedures for specimen collection, handling, storage, and preparation.
  - B - Student is able to discuss the physiologic theory for the procedure.
  - C - Student can state the principles of method(s).
  - D - Student can evaluate the disease manifestations/clinical correlations of the procedure.
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#### **Osmotic Fragility**

- B - The student has observed this procedure.
- A - Student is able to describe procedures for specimen collection, handling, storage, and preparation.
- B - Student is able to discuss the physiologic theory for the procedure.
- C - Student can state the principles of method(s).

## Hematology/Hemostasis

### *Topic*

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#### **Osmotic Fragility**

D - Student can evaluate the disease manifestations/clinical correlations of the procedure.

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#### **Partial Thromboplastin Time**

D - The student can perform the procedure proficiently and is able to perform in job setting after employee orientation.

A - Student is able to describe procedures for specimen collection, handling, storage, and preparation.

B - Student is able to discuss the physiologic theory for the procedure.

C - Student can state the principles of method(s).

D - Student can evaluate the disease manifestations/clinical correlations of the procedure.

E - Student can differentiate/resolve technical, instrument, physiologic causes of problems or unexpected test results.

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#### **Periodic Acid-Schiff Stain**

B - The student has observed this procedure.

A - Student is able to describe procedures for specimen collection, handling, storage, and preparation.

B - Student is able to discuss the physiologic theory for the procedure.

C - Student can state the principles of method(s).

D - Student can evaluate the disease manifestations/clinical correlations of the procedure.

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#### **Photo-optical Clot Detection**

I-D Student can operate the instrument proficiently and is able to perform in job setting after employee orientation.

I-A Student will be able to describe the essential components of the instrument.

I-B Student will be able to state the principles of operation of the instrument.

I-C Student will describe the preventative maintenance procedures necessary for the instrument.

## Hematology/Hemostasis

### *Topic*

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#### **Photo-optical Clot Detection**

I-D Student recognizes unexpected results and either takes corrective action or refers to supervisor.

I-E Student can differentiate and resolve technical, instrument, or physiologic causes of unexpected results.

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#### **PK-deficiency Fluorescent Spot Test**

A - No ability to perform this procedure is required.

B - Student is able to discuss the physiologic theory for the procedure.

D - Student can evaluate the disease manifestations/clinical correlations of the procedure.

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#### **Plasma Hemoglobin**

B - The student has observed this procedure.

A - Student is able to describe procedures for specimen collection, handling, storage, and preparation.

B - Student is able to discuss the physiologic theory for the procedure.

C - Student can state the principles of method(s).

D - Student can evaluate the disease manifestations/clinical correlations of the procedure.

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#### **Plasminogen Assay**

A - No ability to perform this procedure is required.

B - Student is able to discuss the physiologic theory for the procedure.

D - Student can evaluate the disease manifestations/clinical correlations of the procedure.

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#### **Platelet Aggregometer**

I-B Student has observed this instrument or method.

I-A Student will be able to describe the essential components of the instrument.

## Hematology/Hemostasis

### *Topic*

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#### **Platelet Aggregometer**

I-B Student will be able to state the principles of operation of the instrument.

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#### **Platelet Estimate From Blood Smear**

D - The student can perform the procedure proficiently and is able to perform in job setting after employee orientation.

A - Student is able to describe procedures for specimen collection, handling, storage, and preparation.

B - Student is able to discuss the physiologic theory for the procedure.

C - Student can state the principles of method(s).

D - Student can evaluate the disease manifestations/clinical correlations of the procedure.

E - Student can differentiate/resolve technical, instrument, physiologic causes of problems or unexpected test results.

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#### **Platelet Neutralization Procedure**

A - No ability to perform this procedure is required.

B - Student is able to discuss the physiologic theory for the procedure.

D - Student can evaluate the disease manifestations/clinical correlations of the procedure.

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#### **Protein C**

A - No ability to perform this procedure is required.

B - Student is able to discuss the physiologic theory for the procedure.

C - Student can state the principles of method(s).

D - Student can evaluate the disease manifestations/clinical correlations of the procedure.

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#### **Protein S**

A - No ability to perform this procedure is required.

## Hematology/Hemostasis

### *Topic*

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#### **Protein S**

- B - Student is able to discuss the physiologic theory for the procedure.
  - C - Student can state the principles of method(s).
  
  - D - Student can evaluate the disease manifestations/clinical correlations of the procedure.
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#### **Prothrombin Time**

- D - The student can perform the procedure proficiently and is able to perform in job setting after employee orientation.
  
  - A - Student is able to describe procedures for specimen collection, handling, storage, and preparation.
  - B - Student is able to discuss the physiologic theory for the procedure.
  
  - C - Student can state the principles of method(s).
  
  - D - Student can evaluate the disease manifestations/clinical correlations of the procedure.
  - E - Student can differentiate/resolve technical, instrument, physiologic causes of problems or unexpected test results.
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#### **Prussian Blue Stain**

- B - The student has observed this procedure.
  
  - A - Student is able to describe procedures for specimen collection, handling, storage, and preparation.
  - B - Student is able to discuss the physiologic theory for the procedure.
  
  - C - Student can state the principles of method(s).
  
  - D - Student can evaluate the disease manifestations/clinical correlations of the procedure.
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#### **Quantitative G6PD Assay**

- A - No ability to perform this procedure is required.
  
- B - Student is able to discuss the physiologic theory for the procedure.
  
- D - Student can evaluate the disease manifestations/clinical correlations of the procedure.

## Hematology/Hemostasis

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#### **Red Blood Cell Inclusions**

D - The student can perform the procedure proficiently and is able to perform in job setting after employee orientation.

A - Student is able to describe procedures for specimen collection, handling, storage, and preparation.

B - Student is able to discuss the physiologic theory for the procedure.

C - Student can state the principles of method(s).

D - Student can evaluate the disease manifestations/clinical correlations of the procedure.

E - Student can differentiate/resolve technical, instrument, physiologic causes of problems or unexpected test results.

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#### **Red Blood Cell Indices**

D - The student can perform the procedure proficiently and is able to perform in job setting after employee orientation.

A - Student is able to describe procedures for specimen collection, handling, storage, and preparation.

B - Student is able to discuss the physiologic theory for the procedure.

C - Student can state the principles of method(s).

D - Student can evaluate the disease manifestations/clinical correlations of the procedure.

E - Student can differentiate/resolve technical, instrument, physiologic causes of problems or unexpected test results.

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#### **Red Blood Cell Morphology**

D - The student can perform the procedure proficiently and is able to perform in job setting after employee orientation.

A - Student is able to describe procedures for specimen collection, handling, storage, and preparation.

B - Student is able to discuss the physiologic theory for the procedure.

C - Student can state the principles of method(s).

D - Student can evaluate the disease manifestations/clinical correlations of the procedure.

## Hematology/Hemostasis

### *Topic*

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#### **Red Blood Cell Morphology**

E - Student can differentiate/resolve technical, instrument, physiologic causes of problems or unexpected test results.

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#### **Reticulocyte Count (Manual)**

D - The student can perform the procedure proficiently and is able to perform in job setting after employee orientation.

A - Student is able to describe procedures for specimen collection, handling, storage, and preparation.

B - Student is able to discuss the physiologic theory for the procedure.

C - Student can state the principles of method(s).

D - Student can evaluate the disease manifestations/clinical correlations of the procedure.

E - Student can differentiate/resolve technical, instrument, physiologic causes of problems or unexpected test results.

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#### **Scattergrams**

C - Student has performed this procedure satisfactorily on practice specimens but may require additional experience.

A - Student is able to describe procedures for specimen collection, handling, storage, and preparation.

B - Student is able to discuss the physiologic theory for the procedure.

C - Student can state the principles of method(s).

D - Student can evaluate the disease manifestations/clinical correlations of the procedure.

E - Student can differentiate/resolve technical, instrument, physiologic causes of problems or unexpected test results.

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#### **Sudan Black Stain**

B - The student has observed this procedure.

A - Student is able to describe procedures for specimen collection, handling, storage, and preparation.

B - Student is able to discuss the physiologic theory for the procedure.

## Hematology/Hemostasis

### *Topic*

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#### **Sudan Black Stain**

- C - Student can state the principles of method(s).
  - D - Student can evaluate the disease manifestations/clinical correlations of the procedure.
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**Sugar Water Test** B - The student has observed this procedure.

- A - Student is able to describe procedures for specimen collection, handling, storage, and preparation.
  - B - Student is able to discuss the physiologic theory for the procedure.
  - C - Student can state the principles of method(s).
  - D - Student can evaluate the disease manifestations/clinical correlations of the procedure.
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#### **Tartrate-resistant Acid Phosphatase**

- B - The student has observed this procedure.
  - A - Student is able to describe procedures for specimen collection, handling, storage, and preparation.
  - B - Student is able to discuss the physiologic theory for the procedure.
  - C - Student can state the principles of method(s).
  - D - Student can evaluate the disease manifestations/clinical correlations of the procedure.
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#### **TdT Stain**

- B - The student has observed this procedure.
- A - Student is able to describe procedures for specimen collection, handling, storage, and preparation.
- B - Student is able to discuss the physiologic theory for the procedure.
- C - Student can state the principles of method(s).

## Hematology/Hemostasis

### *Topic*

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#### **TdT Stain**

D - Student can evaluate the disease manifestations/clinical correlations of the procedure.

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#### **Thrombin Clotting Time**

C - Student has performed this procedure satisfactorily on practice specimens but may require additional experience.

A - Student is able to describe procedures for specimen collection, handling, storage, and preparation.

B - Student is able to discuss the physiologic theory for the procedure.

C - Student can state the principles of method(s).

D - Student can evaluate the disease manifestations/clinical correlations of the procedure.

E - Student can differentiate/resolve technical, instrument, physiologic causes of problems or unexpected test results.

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#### **Tissue Thromboplastin Inhibition Test**

A - No ability to perform this procedure is required.

B - Student is able to discuss the physiologic theory for the procedure.

D - Student can evaluate the disease manifestations/clinical correlations of the procedure.

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#### **Vitamin B12**

B - The student has observed this procedure.

A - Student is able to describe procedures for specimen collection, handling, storage, and preparation.

B - Student is able to discuss the physiologic theory for the procedure.

C - Student can state the principles of method(s).

D - Student can evaluate the disease manifestations/clinical correlations of the procedure.

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#### **WBC Artifacts and Inclusions**

D - The student can perform the procedure proficiently and is able to perform in job setting after employee orientation.

## Hematology/Hemostasis

### *Topic*

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#### **WBC Artifacts and Inclusions**

- A - Student is able to describe procedures for specimen collection, handling, storage, and preparation.
  - B - Student is able to discuss the physiologic theory for the procedure.
  
  - C - Student can state the principles of method(s).
  
  - D - Student can evaluate the disease manifestations/clinical correlations of the procedure.
  - E - Student can differentiate/resolve technical, instrument, physiologic causes of problems or unexpected test results.
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#### **WBC Estimate from the Blood Smear**

- D - The student can perform the procedure proficiently and is able to perform in job setting after employee orientation.
  
  - A - Student is able to describe procedures for specimen collection, handling, storage, and preparation.
  - B - Student is able to discuss the physiologic theory for the procedure.
  
  - C - Student can state the principles of method(s).
  
  - D - Student can evaluate the disease manifestations/clinical correlations of the procedure.
  - E - Student can differentiate/resolve technical, instrument, physiologic causes of problems or unexpected test results.
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#### **WBC Morphology w/Differential**

- D - The student can perform the procedure proficiently and is able to perform in job setting after employee orientation.
  
- A - Student is able to describe procedures for specimen collection, handling, storage, and preparation.
- B - Student is able to discuss the physiologic theory for the procedure.
  
- C - Student can state the principles of method(s).
  
- D - Student can evaluate the disease manifestations/clinical correlations of the procedure.

## Hematology/Hemostasis

### *Topic*

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#### **WBC Morphology w/Differential**

E - Student can differentiate/resolve technical, instrument, physiologic causes of problems or unexpected test results.

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#### **Westergren Sedimentation Rate**

D - The student can perform the procedure proficiently and is able to perform in job setting after employee orientation.

A - Student is able to describe procedures for specimen collection, handling, storage, and preparation.

B - Student is able to discuss the physiologic theory for the procedure.

C - Student can state the principles of method(s).

D - Student can evaluate the disease manifestations/clinical correlations of the procedure.

E - Student can differentiate/resolve technical, instrument, physiologic causes of problems or unexpected test results.

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