DUMPSARENA

# MEDICAL LABORATORY TECHNICIAN - MLT(ASCP)

## ASCP ASCP-MLT

**Version Demo**

**Total Demo Questions: 20**

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## QUESTION NO: 1

Cerebrospinal fluid has three main functions:

Protect brain and spinal cord from trauma.

Supply nutrients to nervous system tissue.

Remove waste products from cerebral metabolism.

Which of the following are functions of CSF? Please select all correct answers

**A.** Supply nutrients to nervous system tissue.

**B.** Regulate body metabolism.

**C.** Protect spinal cord from injury.

**D.** Remove waste products from cerebral metabolism.

**ANSWER: A C D**

## QUESTION NO: 2

The Westgard multi-rule 22S describes the scenario where two consecutive data points fall outside +2SD or -2SD. If this occurs, then the run must be rejected. This situation is most likely caused by a systematic error.

Which of the following describes the Westgard multi-rule 22S?

**A.** Two control data points are within ± 2s

**B.** One control data point falls outside +2s and a second point falls outside - 2s

**C.** Two consecutive data points fall outside +2SD or -2SD

**D.** Two consecutive data points fall inside +2s

**E.** Two points are within 2SD

**ANSWER: C**

## QUESTION NO: 3

Neutrophils, lymphocytes and macrophage/ monocytes can be found in all types of body fluid differentials. Bronchial cells can be found only in bronchial washings and BAL specimens. Mesothelial cells are found only in serous body fluids including pleural fluid, peritoneal fluid, and pericardial fluid.

Select the specific cells listed below that can be found in all types of body fluid.

**A.** Neutrophils

**B.** Macrophage/monocytes

**C.** Bronchial lining cells

**D.** Mesothelial cells

**E.** Lymphocytes

**ANSWER: A B E**

## QUESTION NO: 4

Troponin is a very specific biomarker that is released during cardiac injury or stress. CK is found not only in cardiac tissue, but also in muscle and brain tissue. LD levels can be elevated in cardiac events, tissue breakdown, and hemolysis. Myoglobin is elevated when muscle tissue is damaged and is not specific for the heart muscle.

Chemistry

Which one of the following is the MOST specific biochemical marker of myocardial infarction?

**A.** CK

**B.** LD

**C.** Troponin

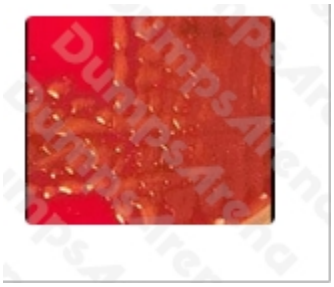
**D.** myoglobin

**ANSWER: C**

## QUESTION NO: 5

Assuming an alpha hemolytic reaction (not well seen in the image), viridans streptococcus and S. pneumoniae are the two possible responses. However, these colonies are far too mucoid for viridans streptococci; therefore, S. pneumoniae is the most likely choice. Also, the colonies are much too large and the hemolytic reaction is wrong for S. pyogenes or S. agalactiae.

A patient was admitted to the hospital recently with an obvious infection. A sputum specimen was submitted and the microbiologist inoculated it to sheep blood agar. Based on the colony morphology and the alpha hemolysis seen in the image to the right, the most likely identification is:



**A.** Streptococcus pneumoniae

**B.** viridans streptococcus

**C.** Streptococcus pyogenes

**D.** Streptococcus agalactiae

**ANSWER: A**

## QUESTION NO: 6

Ferritin and hemosiderin are considered storage forms of iron.

Which substance(s) is/are considered iron storage compounds?

**A.** hemosiderin

**B.** ferritin

**C.** hemoglobin

**D.** myoglobin

**ANSWER: A B**

## QUESTION NO: 7

Certain recipients have increased risk for developing TA-GVHD. They are:

Neonates less than 4 months of age

Fetuses

Recipients with a congenital or acquired immunodeficiency, such as bone marrow or stem cell recipients, and patients receiving chemotherapy

recipients of donor units from a blood relative

Which of the following patients are at risk for transfusion-associated graft versus host disease (TA-GVHD) and require irradiated cellular blood products? (Choose all that apply)

**A.** Neonates less than 4 months of age

**B.** Recipients of donor units known to be from a blood relative.

**C.** Patients with chronic anemias.

**D.** Patient receiving chemotherapy who are immunocompromised.

**E.** Patients with a history of allergic reactions.

**ANSWER: A B D**

## QUESTION NO: 8

Bicarbonate and Chloride form an exchanger to help regulate and buffer the body's pH.

The buffering capacity of blood is maintained by a reversible exchange process between bicarbonate and:

**A.** Sodium

**B.** Potassium

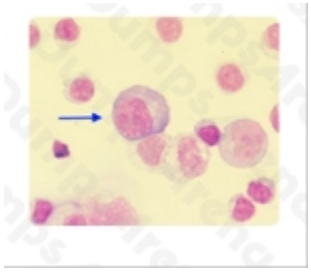
**C.** Calcium

**D.** Chloride

**ANSWER: D**

## QUESTION NO: 9

The cell depicted with the arrow in this image is an atypical (reactive) lymphocyte. These cells are common found in certain viral infections, especially infectious mononucleosis. Notice the larger size and abundant cytoplasm present in this lymphocyte. There is also apparent vacuoliation which is a key feature of atypical lymphocytes. The chromatin pattern of this cell as well as the overall shape, color and size rules out the monocyte, macrophage, and mesothelial cell choices.



A patient with an infectious mononucleosis infection presents in the emergency room. Physicians order a spinal tap which is immediately sent to the laboratory for review. Please identify the cell in the image below from this patient's cerebrospinal fluid sample.

**A.** Reactive Lymphocyte

**B.** Monocyte

**C.** Macrophage

**D.** Mesothelial Cell

**ANSWER: A**

## QUESTION NO: 10

In an alkaline medium, potassium ferricyanide oxidizes hemoglobin to methemoglobin. Further reaction with potassium cyanide produces cyanmethemoglobin which has a maximum absorbance at 540 nm. Color intensity is proportional to total hemoglobin concentration, which is how the hemoglobin levels are measured.

Hematology

In the hemoglobin methodology using potassium ferricyanide the following measurable reaction occurs:

**A.** carboxhemoglobin is formed

**B.** iron remains in the ferrous state

**C.** ferrous iron is oxidized to ferric iron to form methemoglobin

**D.** acid hematin is formed

**ANSWER: C**

## QUESTION NO: 11

Match each of the following:

1. Ratio of cellular area to total area in the bone marrow section.

2. Number of myeloid cells compared to nucleated erythroid cells.

3. Use low power to estimate their quantity and appearance.

4. Use Perls' Prussian blue stain.

**A.** Myeloid-erythroid ratio

**B.** Stored iron

**C.** Overall cellularity

**D.** Megakaryocytes

**ANSWER: A B C D**

## QUESTION NO: 12

An ultrarapid metabolizer (UM) would require a higher dose of a drug than an EM (a person with normal enzyme activity) since the UM eliminates the drug more quickly.

A CYP2D6 ultrarapid metabolizer (UM) would require _____ dose of an active drug (non-prodrug) that is metabolized by CYP2D6 than a CYP2D6 extensive metabolizer (EM).

**A.** a higher

**B.** a lower

**C.** the same

**ANSWER: A**

## QUESTION NO: 13

Match each of the descriptions with the appropriate magnification:

1. Color, Rouleau, Overall Slide Quality, Cell Distribution

2. Platelet estimates RBC-platelet-WBC morphology WBC differential RBC inclusions

3. Select area to examine, WBC estimate

**A.** 40X (Dry)

**B.** 10X

**C.** 100X (Oil)

**ANSWER: A B C**

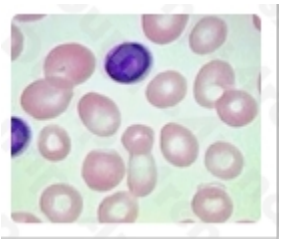
## QUESTION NO: 14

Hemolytic anemia, myelodysplasia, and liver disease may each fit this peripheral blood picture. Each of these conditions can display peripheral blood macrocytosis. It is easy to observe the overall larger size of the red blood cells in this image compared to the normal lymphocyte also present.

When macrocytes are present, they should be examined for their shape (round vs. oval), the hemoglobin content (central pallor), and whether or not there are any inclusions present in the cell.

Iron deficiency would not be the correct answer in this case, since this condition is associated with microcytosis instead.

The complete blood count was obtained from a patient recently admitted to the emergency room. The red blood cell indices obtained revealed an MCV of 115 femtoliters (fL) (normal range 80 - 90 fL). The patient met the criteria for a peripheral blood smear examination. A representative field is shown on the right.



Which of the following conditions may be indicated by the results seen on this peripheral blood smear?

**A.** Hemolytic anemia

**B.** Myelodysplasia

**C.** Iron deficiency

**D.** Liver disease

**ANSWER: A B D**

## QUESTION NO: 15

Match each of the following definitions associated with heart disease and heart failure to the term that it defines.

1. Congestive heart failure

2. Infarction

3. Ischemia

4. Angina

**A.** An inadequate blood supply that decreases availability of oxygen.

**B.** Chest pain caused by inadequate supply of oxygen to heart myocardium.

**C.** An area of tissue death that occurs due to lack of oxygen.

**D.** A left ventricular dysfunction resulting from aging, hypertension, atherosclerosis or muscle damage from an AMI or repeated AMIs.

**ANSWER: A B C D**

## QUESTION NO: 16

Alkaline phosphatase, or ALP, is present in kidneys, liver, intestines, bone, and the placenta. The liver makes the largest amount of ALP. Some of the conditions associated with increased levels of ALP include: damaged liver cells, rapid bone growth (during puberty), bone diseases, or a disease that affects how much calcium is in the blood (hyperparathyroidism), and vitamin D deficiency.

Chemistry

Isoenzymes of alkaline phosphatase occur in:

**A.** Kidney, bone, intestines, liver

**B.** Bone, brain, liver, pancreas

**C.** Liver, brain, spleen, intestines

**D.** Brain, kidney, intestines, bone

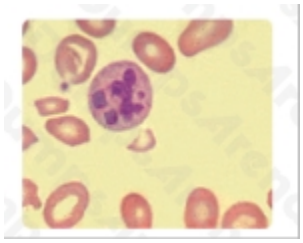
**ANSWER: A**

## QUESTION NO: 17

The intended response is Vitamin B12 and folate deficiencies. Each of these conditions lead to a megaloblastic production of the red blood cells in the bone marrow. Since vitamin B12 and folate are needed in order to produce a synchronous development of the nucleus with the cytoplasm in hematologic cells, oval-macrocytosis often occurs if these nutrients are not in adequate supply within the body. This can also affect neutrophils, allowing for the characteristic hypersegmented nucleus.

The photographic field contains several oval-macrocytes and a hypersegmented neutrophil with greater than 5 nuclear segments. Oval macrocytes are most commonly associated with pernicious anemia and malabsorption syndromes leading to vitamin B12 and folic acid deficiencies.

Clinical information relating to chronic infection, aplastic anemia, and other hematologic maligancies provide the context for the presence of the oval macrocyte.



Macrocytic erythrocytes and hypersegmented neutrophils are not present in thalassemias or in Pelger-Huet anomaly (hyposegmented neutrophils).

Conditions suggested by the macrocytes and the neutrophil in the photograph to the right include which of the following?

**A.** Thalassemia

**B.** Vitamin B12 deficiency

**C.** Pelger-Huet anomaly

**D.** Folate deficiency

**ANSWER: B D**

## QUESTION NO: 18

The laboratory is under the direction of a:

**A.** phlebotomist

**B.** pharmacist

**C.** medical assistant

**D.** pathologist

**ANSWER: D**

## QUESTION NO: 19

Measures Light scatter by particles - Nephelometer

Measures change in vapor pressure - Osmometer

Measures amount of electricity passing between two electrodes - Coulometry

Measures absorbance of light at a specific wavelength - Spectrophotometer

Lab operations

Matching

1. Measures Light scatter by particles

2. Measures change in vapor pressure

3. Measures amount of electricity passing between two electrodes

4. Measures absorbance of light at a specific wavelength

**A.** Coulometry

**B.** Nephelometer

**C.** Spectrophotometer

**D.** Osmometer

**ANSWER: A B C D**

## QUESTION NO: 20

This drawing depicts beta thalassemia minor B+/B. In Beta thalassemia minor B+/B, one beta gene locus is partially deleted or inactive.


Hematology

This drawing depicts which beta chain genotype ?

**A.** Beta thalassemia minor

**B.** Beta thalassemia intermedia

**C.** Beta thalassemia major

**D.** Delta-beta thalassemia minor

**ANSWER: A**