Phlebotomy – Order of Draw Practice Test (Sample)

Study Guide

Everything you need from our exam experts!

Questions

1. When using a butterfly needle, which tube should be drawn before a light blue tube?

A. SST

B. Green

C. Pink

D. Gray

2. What does BUN represent in blood tests?

A. Blood urea nitrogen

B. Body urinalysis network

C. Baseline urinary nitrogen

D. Blood universal number

3. Which type of tube contains both gel activator and lithium heparin?

A. light blue tube

B. mint/light green PST

C. gray top tube

D. red top tube

4. What additive is found in a dark green top tube?

A. sodium citrate

B. sodium fluoride and potassium oxalate

C. sodium heparin

D. gel activator

5. In the context of blood collection, what does the term "antiglycolytic" refer to?

A. A substance that promotes glucose breakdown

B. A substance that inhibits glucose breakdown

C. A substance that facilitates blood coagulation

D. A substance that enhances red cell lysis

6. In which type of tube is Lithium Heparin found?

- **A. PST**
- **B. EDTA**
- **C. Serum separator**
- **D. None of the above**

7. Which tubes are sent to Microbiology for testing?

- **A. Plain red tube**
- **B. SST**
- **C. Blood Culture Tubes**
- **D. Pink tube**

8. What characteristic distinguishes serum from plasma?

- **A. serum is thicker**
- **B. serum is the liquid after clotting**
- **C. serum contains anticoagulants**
- **D. serum is yellow in color**

9. Which mineral is represented by the symbol K in blood tests?

- **A. Potassium**
- **B. Phosphorus**
- **C. Calcium**
- **D. Sodium**

10. What is potassium oxalate primarily used for?

- **A. Enhancing glycolysis**
- **B. Binding calcium**
- **C. Inhibiting glucose breakdown**
- **D. Preventing blood coagulation**

Answers

1. A
2. A
3. B
4. C
5. B
6. A
7. C
8. B
9. A
10. B

Explanations

1. When using a butterfly needle, which tube should be drawn before a light blue tube?

A. SST

B. Green

C. Pink

D. Gray

When using a butterfly needle for blood collection, the order of draw is crucial to prevent cross-contamination of additives between tubes. The light blue tube contains sodium citrate, an anticoagulant that requires proper blood-to-additive ratios for accurate testing. To maintain the integrity of the sample, it is important to draw any tubes with clot activators or gel barriers before the light blue tube. The SST (serum separator tube) typically contains a clot activator and is used for serum testing. By drawing the SST first, the blood can clot appropriately before a centrifuge is used, ensuring that the serum can be separated without any contamination that could affect coagulation testing in the light blue tube. This order helps ensure clinically accurate results while adhering to the recommended protocol. The other tubes mentioned, which may have various additives, can potentially compromise the citrate's anticoagulation properties if drawn before the light blue tube. Therefore, following this order of draw is essential for accurate laboratory results.

2. What does BUN represent in blood tests?

A. Blood urea nitrogen

B. Body urinalysis network

C. Baseline urinary nitrogen

D. Blood universal number

BUN stands for Blood Urea Nitrogen, which is a key measurement in blood tests that assesses kidney function. Urea is a waste product formed in the liver when protein is broken down. It then enters the bloodstream and is typically filtered out by the kidneys, so measuring the levels of urea nitrogen in the blood provides important information about how well the kidneys are working. High levels of BUN can indicate that the kidneys are not functioning effectively or that there are issues affecting kidney health, such as dehydration or significant kidney disease. Conversely, low levels may suggest overhydration or malnutrition. Understanding the role of BUN in diagnosing kidney function is crucial for healthcare providers in evaluating patients' health and directing further testing or treatment if necessary. The other options provided do not accurately describe what BUN represents in this context.

3. Which type of tube contains both gel activator and lithium heparin?

A. light blue tube

B. mint/light green PST

C. gray top tube

D. red top tube

The mint/light green tube, also known as the plasma separator tube (PST), is designed to contain both a gel separator and lithium heparin. The lithium heparin acts as an anticoagulant, preventing blood from clotting, while the gel provides a barrier that separates the serum or plasma from the blood cells after centrifugation. This combination allows for the collection of plasma samples that can be used for various laboratory tests, particularly when rapid processing is required. Other types of tubes do not contain both elements. The light blue tube is typically used for coagulation tests and contains sodium citrate as an anticoagulant, but it does not have a gel separator. The gray top tube is used for glucose testing and may contain sodium fluoride and potassium oxalate but not lithium heparin or a gel. The red top tube is used for serum tests and usually does not have any additives, although some variations may contain a clot activator but not lithium heparin. Thus, the mint/light green tube is distinct in its composition and functionality within the order of draw.

4. What additive is found in a dark green top tube?

A. sodium citrate

B. sodium fluoride and potassium oxalate

C. sodium heparin

D. gel activator

The dark green top tube contains sodium heparin as its additive. This anticoagulant works by inhibiting thrombin and factor Xa, which are crucial in the coagulation cascade. As a result, sodium heparin is effective in preventing the formation of blood clots in the sample, making it suitable for various tests that require plasma, such as certain chemistry panels and in situations where immediate analysis is necessary. Sodium citrate, found in light blue top tubes, is used for coagulation studies but not found in dark green tubes. Sodium fluoride and potassium oxalate are additives in gray top tubes, primarily used for glucose testing to preserve the sample and inhibit glycolysis. Gel activators, common in tubes with a gold or red/gray mottled top, serve to separate serum from clotted blood but are not associated with dark green top tubes. Understanding these distinctions is essential for mastering the order of draw and ensuring accurate laboratory results.

5. In the context of blood collection, what does the term "antiglycolytic" refer to?

A. A substance that promotes glucose breakdown

B. A substance that inhibits glucose breakdown

C. A substance that facilitates blood coagulation

D. A substance that enhances red cell lysis

The term "antiglycolytic" refers to a substance that inhibits glucose breakdown. In the context of blood collection, antiglycolytic agents are added to blood collection tubes to prevent glycolysis, which is the metabolic process where glucose is broken down by cells into pyruvate or lactate. This is important because glycolysis can lead to a decrease in glucose levels in the sample, potentially resulting in inaccurate test results, especially for glucose measurement. By inhibiting this process, antiglycolytic agents help to preserve the glucose concentration in the blood sample for more reliable laboratory analysis.

6. In which type of tube is Lithium Heparin found?

A. PST

B. EDTA

C. Serum separator

D. None of the above

Lithium Heparin is an anticoagulant used in blood collection tubes to prevent clotting during the testing process. It is specifically found in the Plasma Separator Tubes (PST), which are the tubes designed to collect plasma for various laboratory tests. The PST contains a gel that separates the plasma from the formed elements of blood after centrifugation, allowing for easy collection of the plasma for analysis. In contrast, EDTA tubes are primarily used as an anticoagulant for hematology tests and do not contain Lithium Heparin. The serum separator tubes, while also used for specimen collection, typically contain a different type of additive, such as a clot activator or a gel for serum separation, but not specifically Lithium Heparin. Therefore, the tube that contains Lithium Heparin is the Plasma Separator Tube, making the identification of this tube necessary for phlebotomy practice and proper specimen handling.

7. Which tubes are sent to Microbiology for testing?

A. Plain red tube

B. SST

C. Blood Culture Tubes

D. Pink tube

The correct choice is the blood culture tubes because they are specifically designed to detect the presence of microorganisms in a patient's blood. These tubes contain culture media that promote the growth of bacteria or fungi, allowing healthcare professionals to identify infections that may be present in the bloodstream. Blood cultures are a critical tool in diagnosing septicemia and other systemic infections. In the context of the other options, plain red tubes and SST (serum separator tubes) are used for collecting serum samples for various chemistry and serology tests, but they do not support the growth of microorganisms and thus are not utilized in microbiological testing. The pink tube primarily serves for blood bank testing and is not intended for microbiology studies. Therefore, blood culture tubes are uniquely suited for the specific needs of microbiological analysis.

8. What characteristic distinguishes serum from plasma?

A. serum is thicker

B. serum is the liquid after clotting

C. serum contains anticoagulants

D. serum is yellow in color

Serum is distinguished from plasma primarily by its origin following the blood coagulation process. After blood is drawn and allowed to clot, the liquid that separates from the clot is known as serum. This is in contrast to plasma, which is the liquid component of blood that remains when an anticoagulant is added to prevent clotting. Serum does not contain clotting factors, which are removed when the blood clots and the clot is then removed. This means that serum lacks fibrinogen and other coagulation proteins that are abundant in plasma, making it less viscous and free-flowing. This characteristic of serum being the liquid that remains after clotting plays a pivotal role in various laboratory tests and analyses where clotting factors might interfere with the results. The other options describe various aspects of serum but do not accurately define the fundamental characteristic that distinguishes it from plasma. For instance, serum is not necessarily thicker than plasma; while it does often appear yellow due to the presence of bilirubin or other pigments, color can vary. Finally, serum does not contain anticoagulants since it is derived from clotted blood, while plasma contains these agents to prevent coagulation.

9. Which mineral is represented by the symbol K in blood tests?

A. Potassium

B. Phosphorus

C. Calcium

D. Sodium

The symbol "K" in blood tests represents potassium. This designation comes from the Latin word "kalium," which is the source of the chemical symbol. Potassium is an essential electrolyte in the body, playing a critical role in maintaining proper fluid balance, muscle contractions, and nerve signaling. It is particularly important for heart function, as it helps regulate heartbeats. In blood tests, measuring potassium levels is vital for assessing a patient's overall health, especially for those with conditions that can affect kidney function or electrolyte balance. Since potassium levels can significantly influence muscle and nerve function, it is crucial to monitor them during various medical treatments. The presence of potassium in the blood is often part of a standard metabolic panel, which helps healthcare providers readjust treatments and monitor patients' cardiovascular health.

10. What is potassium oxalate primarily used for?

A. Enhancing glycolysis

B. Binding calcium

C. Inhibiting glucose breakdown

D. Preventing blood coagulation

Potassium oxalate is primarily used for preventing blood coagulation. In the context of blood collection and laboratory testing, potassium oxalate serves as an anticoagulant that binds calcium ions in the blood. The binding of calcium is crucial because calcium plays an essential role in the coagulation cascade, activating various clotting factors that lead to the formation of a clot. By effectively chelating calcium, potassium oxalate helps ensure that the blood remains in a liquid state, which is vital for accurate laboratory analysis and diagnostic testing. The use of potassium oxalate is particularly important in situations where the preservation of blood components is needed for testing, such as in certain biochemical assays. Its role in preventing coagulation is critical for obtaining reliable results from samples that need to be analyzed without the interference of clot formation.