



KENYATTA UNIVERSITY

**EXAMINATION FOR THE DEGREE OF BACHELOR OF SCIENCE IN
MEDICAL LABORATORY SCIENCES**

HML 113: SPECIMEN COLLECTION AND HANDLING

1ST SEMESTER 2022/2023

TIME: 2 HOURS

INSTRUCTIONS:

SECTION A: ANSWER ALL QUESTIONS: (4MARKS EACH)

1. Outline the measures that need to be observed so as to reduce injuries related to phlebotomy. (4 marks)
2. Prolonged tourniquet application during venipuncture can interfere with test results. Explain. (4 marks)
3. State FOUR reasons for canceling a laboratory test. (4 marks)
4. a) Outline TWO types of blood collection tubes for Hematology samples and the additives used in each. (2 marks)
b) State the tests carried on samples collected in the tubes mentioned above. (2 marks)
5. Explain the rationale of waste segregation in the phlebotomy section. (4 marks)

SECTION B: ANSWER ONLY ONE QUESTION (20 MARKS EACH)

6. Discuss:
- a) Types of specimens found in Microbiology section and the tests done on each. (10marks)
 - b) Factors related to specimen collection that can affect the test results in clinical chemistry section. (10 marks)
7. Describe the procedure of a successful blood collection by venipuncture. (20 marks)

SECTION C: Answer all the questions by indicating the correct answer on the answer booklet (1/2 marks each)

1. When instructing the patient to collect a sputum specimen, the medical assistant should tell the patient to:
 - A. Collect secretions from an evening coughing episode
 - B. Collect secretions from a first morning coughing episode
 - C. Allow saliva and mouth mucus to enter cup
 - D. Keep specimen at room temperature for the duration
2. Causes of pre-analytical errors in the clinical laboratory include?
 - A. Wrong timing during centrifuging of urine sample
 - B. Specimen collection tube not filled properly
 - C. Result reported on the wrong patient
 - D. Incorrect interpretation
3. Vacuum collection tube with additive/anticoagulant EDTA is used for:
 - A. Coagulation studies
 - B. Hematology studies
 - C. Serology tests
 - D. Clinical chemistry tests
4. Which of the following specimen types causes prolonged delay in pre-analytical specimen processing? :
 - A. Whole blood
 - B. Citrate plasma
 - C. Serum with silica activator
 - D. EDTA plasma

Reasons for ordering a laboratory test include?

- A. Diagnosis
 - B. Monitoring
 - C. Screening
 - D. All of the above
6. To minimize contamination of urine sample?
- A. Ask the client clean genital with clean water and soap
 - B. Take midstream urine sample
 - C. Don't take urine sample during ministration
 - D. All of the above
7. The ideal urine specimen collection for accurate diagnosis of urinary tract infection is?
- A. Clean void
 - B. Clean catch
 - C. Random urine collection
 - D. Time urine collection
8. Before obtaining a blood specimen on a child, you must do all of the following except?
- A. Establish a rapport with the child and the parent
 - B. Greet the child and the parent
 - C. Tell the child it won't hurt
 - D. Tell the child what to expect in assuring manner
9. For adults, which veins should be used for venipuncture?
- A. Veins located in the distal forearm or antecubital space
 - B. Veins located in the proximal forearm or antecubital space
 - C. The jugular vein
 - D. The femoral vein or antecubital space
10. For the debilitated persons, or those who may have sclerosed or fragile veins, what should you do for the venipuncture?
- A. Consult with a physician concerning the procedure
 - B. Take blood from the veins located in the proximal forearm or antecubital space
 - C. Use the jugular vein
 - D. Select the femoral vein

11. Veins from which group of people tend to collapse more easily; and, therefore, greater care may be needed to select and puncture the vein?
- A. Children.
 - B. Middle-aged people.
 - C. Elderly
 - D. Cancer patients
12. The syringe and needle for venipuncture must be dry to avoid ----- of the red blood cells.
- A. Hemolysis
 - B. Coagulation.
 - C. Contamination.
 - D. Hemoglobin reduction
13. To prevent an injection of air into the vein, which can be fatal, what must the technician do?
- A. Use a longer plunger than the syringe
 - B. Use a shorter plunger than the syringe
 - C. It makes no difference
 - D. The plunger must match the syringe
14. In tying the tourniquet, how far above the venipuncture site should it be secured?
- A. 1-2 inches
 - B. 4-5 inches
 - C. 3-4 inches
 - D. 5-6 inches
15. Besides inspecting and palpating to locate the desired vein for venipuncture, on what other two items should you focus?
- A. Direction of vein course and estimate its size and depth
 - B. Direction of vein course and estimate its length and color
 - C. Direction of vein course and estimate its position and elasticity
 - D. The vein's thickness, length, and size

The colour code of plastic bag for disposing of microbial laboratory culture waste is?

- A. Yellow
- B. Red
- C. Black
- D. Blue

17. During blood collection, when should the tourniquet be released?
- A. After the desired volume of blood has been drawn
 - B. Once blood starts flowing into the first tube / syringe
 - C. After 10 ml of blood has been drawn
 - D. After the needle has been drawn from the vein
18. When transferring blood specimen from the syringe into an evacuated tube, which one of the following explains correct technique?
- A. Remove the tube cap before transferring blood.
 - B. Hold the tube in hand and pierce the cap with needle.
 - C. Keep the tube on a rack, pierce cap with needle, and let blood flow into the tube automatically.
 - D. Remove cap, remove needle from syringe, and transfer blood into the tube.
19. Which chemical is the most commonly used as a fixative for pathological specimens?
- A. Picric acid
 - B. Mercuric chloride
 - C. Ethanol
 - D. Formaldehyde
20. Which way is the needle bevel supposed to be and how is it to be situated at time of entry?
- A. Bevel side down, parallel with, and alongside the vein
 - B. Bevel side up, adjunct with, and alongside the vein
 - C. Bevel side perpendicular to, and close to the vein
 - D. Bevel side up, parallel with, and alongside the vein