



MERU UNIVERSITY OF SCIENCE AND TECHNOLOGY

P.O. Box 972-60200 – Meru-Kenya

Tel: +254(0) 799 529 958, +254(0) 799 529 959, + 254 (0) 712 524 293,

Website: info@must.ac.ke Email: info@must.ac.ke

University Examinations 2023/2024

THIRD YEAR SECOND SEMESTER EXAMINATION FOR THE DEGREE OF BACHELOR
OF SCIENCE IN MEDICAL LABORATORY

HML 3321: PHLEBOTOMY AND INFECTION CONTROL

DATE: APRIL 2024

TIME: 2 HOURS

INSTRUCTIONS:

- (i) The paper consists of **Three** Sections
 - (ii) Section A: Multiple Choice Questions
 - (iii) Section B: Short Answer Questions
 - (iv) Section C: Long Answer Questions
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SECTION A - MCQs

1. What ancient civilization is credited with the earliest recorded use of bloodletting, which is a practice related to phlebotomy?
 - a) Ancient Greece
 - b) Ancient Egypt
 - c) Mesopotamia
 - d) Indus valley civilization
 - e) Roman empire
2. The primary goal of waste segregation in effective waste management involves?
 - a) Minimizing recycling efforts
 - b) Simplifying waste collection

- c) Increasing landfill usage
 - d) Enhancing waste combustion
 - e) Reducing overall waste volume
3. What is a common consequence of using a smaller gauge needle than recommended for blood collection?
- a) Haemolysis
 - b) Haemostasis
 - c) Hypertension
 - d) Haemoglobinuria
 - e) All of the above
4. Why is proper phlebotomy technique important in healthcare system?
- a) To prevent contamination of blood samples
 - b) To enhance patient comfort during blood collection
 - c) To minimize the risk of hematoma formation
 - d) To ensure accurate diagnostic test results
 - e) To promote efficient laboratory workflow
5. The parameter commonly analyzed using arterial blood samples in the laboratory setting
- a) Hemoglobin A1c
 - b) Bilirubin
 - c) The pH levels
 - d) Troponin
 - e) Creatinine
6. Identify the information included when seeking patient consent for blood collection
- a) The patient's dietary preferences
 - b) The patient's favourite colours
 - c) The potential risks and benefits of the procedure
 - d) The healthcare provider's personal preferences
 - e) The expected duration of the blood draw

7. The grey-top tube contains the following as a preservative and anticoagulant respectively
- a) Sodium chloride and potassium oxalate
 - b) Potassium oxalate and sodium chloride
 - c) Sodium citrate and potassium oxalate
 - d) Potassium oxalate and sodium fluoride
 - e) Sodium fluoride and Potassium oxalate
8. Haematoma
- a) Is a blood clot
 - b) Is infection of the blood
 - c) Is blood platelet disorder
 - d) Is the thin blood capillaries
 - e) Is bleeding into the tissues under the skin
9. The following personal protective equipment is specifically designed to protect against airborne infections in healthcare settings?
- a) Goggles
 - b) N95 respirator
 - c) Face shield
 - d) Surgical mask
 - e) Latex gloves
10. Which of the following diseases is typically transmitted through direct contact with infected bodily fluid
- a) Hepatitis C
 - b) Influenza
 - c) Tuberculosis
 - d) Chickenpox
 - e) None of the above
11. The key objective of OSHA in Kenya is?
- a) Promoting unhealthy work environments
 - b) Reducing employee benefits
 - c) Enforcing stringent labour laws

- d) Ensuring workplace safety and health
 - e) Advocating for longer working hours
12. What do you understand by the word nosocomial infection?
- a) Infections resulting from foodborne pathogens
 - b) Infections transmitted through air
 - c) Infections acquired in a healthcare setting
 - d) Infections caused by contaminated water
 - e) All of the above
13. The following is the step, typically performed first during the doffing process for healthcare workers wearing full PPE
- a) Removing gloves
 - b) Removing gown
 - c) Washing hands
 - d) Removing mask
 - e) Removing goggles
14. Why is the median cubital vein often preferred for venipuncture in phlebotomy?
- a) It is less painful for the patient
 - b) It is located near the wrist
 - c) It is less prone to collapse
 - d) It is the closer to the heart
 - e) It is deep seated vein
15. Crucial factor to be considered for maintaining the quality of a blood specimen during collection is?
- a) Patient's age
 - b) Ambient temperature
 - c) Collection tube colour
 - d) Length of the needle
 - e) Speed of centrifugation
16. Select the correct order of steps for venous blood collection using a standard evacuated tube system

- a) Apply tourniquet, cleanse the site, insert needle, remove tourniquet, collect blood
- b) Cleanse the site, insert needle, apply tourniquet, collect blood, remove the tourniquet
- c) Apply tourniquet, insert needle, collect blood, remove tourniquet, cleanse the site
- d) Cleanse the site, apply tourniquet, insert needle, remove tourniquet, collect blood
- e) Inset needle, apply tourniquet, collect blood, remove tourniquet, cleanse the site

17. For which laboratory test is lithium heparinized blood commonly used?

- a) Full hemogram
- b) Blood glucose
- c) Prothrombin time test
- d) Electrolyte panel
- e) None of the above

18. If blood is not mixed properly after collection

- a) Haemolysis occurs
- b) Contamination occurs
- c) Mislabeling occurs
- d) Nothing occurs
- e) Clot formation occurs

19. What information is typically included in the Safety Data Sheets (SDS) for chemicals used in phlebotomy?

- a) Patients' demographics
- b) Manufacturer's contact details
- c) Employee work schedules
- d) Hazardous properties and precautions
- e) Medication dosages

20. What crucial information is typically included on a test request form for phlebotomy?

- a) Patient's identification details and demographics

- b) The phlebotomist's personal preferences
- c) Patient's shoe size
- d) Phlebotomist's favourite meal
- e) Date of the phlebotomy appointment

SECTION B (40 MARKS). - ATTEMPT ALL QUESTIONS

1. Outline the plain tube in blood collection (5 marks)
2. Explain the responsibilities of a phlebotomist (5 marks)
3. (a) Define standard operating procedures (SOPs) in phlebotomy (1 mark)
(b) Name any four (4) contents of SOPs in phlebotomy (4 marks)
4. Name ten (10) pathogens which can be acquired during phlebotomy (5 marks)
5. Explain five (5) ways on how you can break the chain of infection (5 marks)
6. Name ten (10) items you may need to do venipuncture (5 marks)
7. Define a susceptible host and explain four (4) examples of this kind of host (5 marks)
8. Explain in five (5) ways how malpractice in phlebotomy can impact our lives (5 marks)

SECTION C (40 MARKS) — ATTEMPT ANY TWO QUESTIONS

1. Discuss ten (10) adverse effects which may occur during or after phlebotomy (20 marks)
2. You are a competent medical laboratory officer who is practicing. What ten (10) ethical issues will you adhere to as you collect blood from patients? (20 marks)
3. Describe waste management in the phlebotomy laboratory (20 marks)