



(University of Choice)

**MASINDE MULIRO UNIVERSITY OF  
SCIENCE AND TECHNOLOGY  
(MMUST)**

MAIN CAMPUS

**UNIVERSITY EXAMINATIONS  
2021/2022 ACADEMIC YEAR**

**SECOND YEAR SECOND SEMESTER EXAMINATIONS**

**FOR THE DEGREE  
OF  
BACHELOR OF MEDICAL LABORATORY SCIENCES &  
BACHELOR OF MEDICAL BIOTECHNOLOGY**

**COURSE CODE:** BML 224

**COURSE TITLE:** BLOOD TRANSFUSION

**DATE:** 19/04/2022

**TIME:** 8.00 A.M. – 10.00 A.M.

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**INSTRUCTIONS TO CANDIDATES**

This paper is divided into three sections, **A B** and **C**, carrying respectively: Multiple Choice Questions (**MCQs**), Short Answer Questions (**SAQs**) and Long Answer Questions (**LAQs**). Answer ALL questions.

TIME: 2 Hours

MMUST observes ZERO tolerance to examination cheating

This Paper Consists of 4 Printed Pages. Please Turn Over.

**SECTION A: MULTIPLE CHOICE QUESTIONS (20 marks)**

- Q1. Which is the most common blood type among Kenyans?  
a) Blood group A+  
b) Blood group B+  
c) Blood group O-  
d) Blood group O+
- Q2. Which of following may not have caused Rh-negative mothers sensitization to Rh-positive blood:  
a) Previous pregnancy with Rh-negative baby  
b) A childhood blood transfusion  
c) Rh-negative child of Rh-positive mother  
d) A second trimester abortion
- Q3. Fresh plasma is the component of choice in the management of:  
a) Factor V deficiency  
b) Factor VII deficiency  
c) Hemophilia  
d) Factor X deficiency
- Q4. The risk of transfusing blood containing hepatitis B surface antigen as compared to blood negative for this is:  
a) Increased  
b) Decreased  
c) Increased only in patients who have not previously transfused  
d) Identical
- Q5. Massive transfusion of stored whole blood has been shown not to be associated with:  
a) Change in Acid-Base balance  
b) Hypermagnesemia  
c) Hypocalcemia and hyperkalemia  
d) Clotting deficiencies
- Q6. Platelet transfusion should be given:  
a) When the platelet count is less than 20000  
b) When the patient bleeding and the platelet count less than 20000 due to hypoplasia  
c) In cases of drug purpura  
d) In DIC
- Q7. Advantage of blood donation to donor are:  
a) Reduce iron in the body  
b) Free medical checkup  
c) Decrease heart disease  
d) All of the above
- Q8. Blood group testing  
a) Can establish maternity  
b) Can exclude maternity  
c) Can occasionally establish paternity  
d) Can exclude paternity

- Q9. One unit of fresh blood rises haemoglobin concentration by?
- 0.1g
  - 1g
  - 2g
  - 2.2g
- Q10. Standard confirmatory test for syphilis is?
- VDRL test
  - RPR test
  - TPHA test
  - Kahn test
- Q11. Which of the following are not alternatives to transfusion?
- Preoperative autologous donation
  - Erythropoietin
  - Intraoperative conservation techniques
  - Blood substitutes
- Q12. Cryoprecipitate
- Should be irradiated
  - Is rich in Factor IX
  - Is rich in Fibrinogen and Factor VIII
  - Is the preferred treatment for coagulation factor deficiencies
- Q13. Which of the following is not an immunological reactions of blood transfusion?
- Anaphylactic
  - Allergic
  - Circulatory overload
  - Leak agglutinin
- Q14. Transfusion associated Graft-versus-Host Disease
- Is responsive to steroids
  - Manifests within 48 hours of transfusion
  - The national blood transfusion services maintain a national registry
  - Can affect patients with depressed T-cell immunity
- Q15. What is the common risk of donating blood?
- Viral infection
  - Bacterial infection
  - Low blood pressure
  - None of the above
- Q16. During blood donation, the removal of blood components is called?
- Apheresis
  - Plasmapheresis
  - Cytapheresis
  - Leucapheresis
- Q17. Which of the following is not a quality control procedure of blood bank equipment?
- Maintenance of centrifuge and water bath
  - Checking centrifuge speed and actual revolution per minute using tachometer
  - Monitoring water bath temperature for detection of antibody
  - Adjusting of centrifuge while separating plasma

Q18. What are the common risks of donating blood?

- a) Contract common viruses
- b) Bacterial infection
- c) Low blood pressure
- d) None of the above

Q19. How much blood usually is donated at a time?

- a) 950 ml
- b) 946 ml
- c) 1000 ml
- d) 473 ml

Q20. Acute hemolytic transfusion reactions:

- a) Are rarely fatal
- b) May be prevented by pre-treatment with corticosteroid
- c) Are best treated with automated red cell exchange
- d) Are usually due to clerical error

**SECTION B: SHORT-ANSWER QUESTIONS (40 MARKS)**

- Q1. State the types of blood bags, additives and their uses (8 marks).
- Q2. List any 8 early (<24 hours) reactions of blood transfusion (8 marks).
- Q3. Outline the criteria for blood donor selection (8 marks).
- Q4. State the general rules to resolve ABO discrepancies (8 marks).
- Q5. List and state uses of any four blood bank reagents (8 marks).

**SECTION C: LONG-ANSWER QUESTION (60 MARKS)**

- Q1. Describe the outcomes of complement activation in blood banking (20 marks)
- Q2. Discuss the indications for transfusion, and storage of any ten blood products (20 marks).
- Q3. Describe blood transfusion services organization in Kenya (20 marks).