



QUALIFICATION : BACHELOR of MEDICAL LABORATORY SCIENCES	
QUALIFICATION CODE: 08BMLS	LEVEL: 6
COURSE: IMMUNOHAEMATOLOGY	COURSE CODE: IMH621S
DATE: JANUARY 2024	SESSION: 1
DURATION: 3 HOURS	MARKS: 100

SECOND OPPORTUNITY / SUPPLEMENTARY: QUESTION PAPER

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MODERATOR: *Ms Vanessa Tjijenda*

INSTRUCTIONS:

1. Answer all questions on the separate answer sheet.
2. Please write neatly and legibly.
3. Do not use the left side margin of the exam paper. This must be allowed for the examiner.
4. No books, notes and other additional aids are allowed.
5. Mark all answers clearly with their respective question numbers.

PERMISSIBLE MATERIALS:

1. Non-Programmable Calculator

ATTACHMENTS:

1. None

This paper consists of 5 pages including this front page

QUESTION 1

[10]

Evaluate the statements in each numbered section and select the most appropriate answer or phrase from the given possibilities. Write the appropriate letter next to the number of the statement/phrase.

1.1 Identify the scenario that would lead to permanent deferral of donors:

(1)

- (A) Received hepatitis B immune globulin shot
- (B) A patient with high blood pressure that is under control
- (C) An HIV patient with excellent CD4 and viral load results
- (D) A pregnant patient

1.2 Which ABO discrepancy best explains the following results?

(1)

Forward Typing		Reverse Grouping	
Anti-A	Anti-B	A1 Cells	B cells
4	0	0	0

- (A) Subgroup of A
- (B) Mixed field reactions
- (C) Immunocompromised patient
- (D) These results are correct

1.3 Which of the following identifiers are not crucial for compatibility testing?

(1)

- (A) Sex
- (B) Name
- (C) Hospital number
- (D) Date of Birth

1.4 Which of the following is a manifestation of delayed haemolytic reaction?

(1)

- (A) Renal failure
- (B) Unexplained decrease in haemoglobin
- (C) Active bleed
- (D) Hives on skin

1.5 A 25-year-old female was rushed to the hospital after a motor vehicle accident, she needs emergency red cell concentrate however, the stocks at the blood bank are running low. What is the best blood group to issue her?

(1)

- (A) Fully crossmatched group specific
- (B) O+
- (C) O-
- (D) AB-

1.6 The method employed in removing IgG antibodies coating the red cells is known as: (1)

- (A) Elution
- (B) Haemagglutination
- (C) Neutralization
- (D) Adsorption

1.7 The enzyme technique would be useful in separating which of the following multiple antibody combinations? (1)

- (A) Anti-Jk(a) and Anti-Jk(b)
- (B) Anti-D and Anti-Fy(a)
- (C) Anti-C and Anti-C
- (D) Anti-K and Anti-Le(a)

1.8 Select the appropriate blood product for a leukemic patient with anaemia: (1)

- (A) Normal RBCs
- (B) Frozen RBCs
- (C) Washed RBC
- (D) Leukodepleted RBC

1.9 Identify the appropriate technique used to type for weak D. (1)

- (A) Indirect Antiglobulin Test
- (B) Direct Antiglobulin Test
- (C) Gel Technique
- (D) Solid phase

1.10 Identify the best product used to treat Idiopathic Thrombocytopenic Purpura? (1)

- (A) Plasma
- (B) Platelet
- (C) Cryoprecipitate
- (D) Whole blood

QUESTION 2 [10]

Indicate whether the following scenarios should lead to permanent deferral (PD), temporal deferral (TD) or acceptance (A) of donor.

2.1 A 28-year-old male had a blood transfusion the past 12 months. (1)

2.2 A 69-year-old healthy male. (1)

2.3 A 36-year-old male who appeared to have one too many beers. (1)

2.4 A 19-year-old female on antibiotic treatment for acne. (1)

- 2.5 Healthy 49-year-old with a large scar from a burn from childhood. (1)
- 2.6 A 27-year-old female living with leukaemia who wants to donate for a good cause. (1)
- 2.7 A 50-year-old male who previously had syphilis during his youth. (1)
- 2.8 A 18 year old enthusiastic high school learner with a weight of 48 kg. (1)
- 2.9 A 35-year-old female with a very healthy pregnancy. (1)
- 2.10 A 59-year-old female with well control diabetes. (1)

SECTION B: SHORT AND LONG ANSWER QUESTIONS [53 MARKS]

QUESTION 3 [20]

- 3.1 Tabulate five serological differences between IgG and IgM. (10)
- 3.2 Briefly define the following antibody/antigen reactions.
- 3.2.1 Haemagglutination (2)
 - 3.2.2 Sensitization (2)
 - 3.2.3 Haemolysis (2)
 - 3.2.4 Neutralization (2)
 - 3.2.5 Precipitation (2)

QUESTION 4 [21]

- 4.1 Lectins are important in distinguishing blood groups. Identify the three (3) types of lectins used and their uses. (6)
- 4.2 Explain the phenomena of Duffy null phenotype in avoiding invasion of the malaria parasite. (4)
- 4.3 Identify six causes of false positives of Indirect Antiglobulin Tests (IAT). (6)
- 4.4 List at least five properties of whole blood collected for transfusion. (5)

QUESTION 5 [12]

- 5.1 Red cell products can further be processed into special red cell products. Discuss the different red cell products, their indications and how they are processed. (12)

SECTION C: LONG ANSWER AND SCENARIO BASED QUESTIONS [27 MARKS]

QUESTION 6 [15]

- 6.1 There are some physiological events that take place in the body during immune mediated haemolytic reactions which aggravate the severity of the reactions. Explain these events. (15)

QUESTION 7

[13]

The following are ABO/Rh and phenotyping results of a patient:

ABO						
Anti-A	Anti-B	A1 cells	A2 cells	B cells	O cells	
0	0	0	0	0	0	
Rh						
Anti-D	Anti-C	Anti-E	Anti-c	Anti-e	Control	
3+	3+	3+	3+	3+	0	
Lewis		Other				
Anti-Le ^b	Anti-Le ^b	Anti-H	Anti-K	Anti-k	Anti-Lu ^a	DAT
0	0	3+	0	0	0	0

- 7.1 Interpret the ABO results. (7)
- 7.2 Mention two possible causes for the ABO anomalous results observed. (2)
- 7.3 Explain how you would proceed to issue blood to the patient. (3)

END OF QUESTION PAPER [100 MARKS]