"Investing in Africa's Future"

COLLEGE OF HEALTH, AGRICULTURE AND NATURAL SCIENCES

DEPARTMENT OF BIOMEDICAL AND LABORATORY SCIENCES

BACHELOR OF MEDICAL LABORATORY SCIENCES HONOURS DEGREE

NSLS 406: TRANSFUSION SCIENCE AND IMMUNOLOGY II

END OF SEMESTER FINAL EXAMINATIONS (SPECIAL)

3 JUNE 2021

LECTURER: MR M. MUTENHERWA

DURATION: 7 HOURS

INSTRUCTIONS

1. Write your candidate number on your answer sheets.
2. Answer any **one** question of your choice from the given three questions.
3. Each full question carries 100 marks.
4. Submit your answer scripts as word documents.
5. Use the following specifications in your answer scripts:
   Font: Times New Roman
   Font size: 12
   Line spacing: 2.0
6. Credit will be given for logical, systematic and neat presentations.

Answer any ONE question

1. Describe the pathogenesis of ABO and Rh hemolytic disease of the newborn to illustrate that it is a type II hypersensitivity. [100 marks]

2. Discuss the pathogenesis, laboratory diagnosis, treatment and prevention of Chediak-Higashi Syndrome and Job`s Syndrome. [100 marks]

3. **Pia** is a 27 years old Malawian white male who was accused of fathering the daughter of a single mother female soccer player in 2016. Table 1 below shows the ABO blood grouping test results for the **Pia** case. The results are from a Paternity Laboratory in Lilongwe.

Table 1: ABO Test Results of the Pia Paternity Case

	Mother	**Child**	**Pia (Alleged father)**
Blood types (phenotypes)	A	B	O
Possible genotypes	AO or AA	BO or BB	O/O
Child`s maternal marker	-	O or A	-
Child`s paternal marker	-	B	-

a) Applying ABO blood group antigens and Mendelian genetic principles, testify that alleged father, **Pia**, could not have been the child's father. [70 marks]

b) Explain the recommendations you would propose to the magistrate for this case to be concluded using Transfusion Science and Immunology technical expertise? [30 marks]

End of paper