



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

22 NOVEMBER 2021

LECTURER: MR M. MUTENHERWA

DURATION: 5 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.
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Answer any ONE question

1. Describe the pathogenesis of hemolytic disease of the newborn (HDNB) to clearly demonstrate that it is a type II hypersensitivity. [100 marks]

2. Select either **one** primary immunodeficiency disease or **one** secondary immunodeficiency disease and discuss its pathogenesis, laboratory diagnosis, treatment and prevention. [100 marks]

3. **Fig** is a 34-year old Zimbabwean black male who was accused of fathering the daughter of a single mother female cross border vendor in 2014. **Table 1** below shows the ABO blood typing test results for the **Fig** case. The results are from a Paternity Laboratory in Bulawayo which collects blood samples and sublets to a Laboratory in South Africa to test the samples to resolve cases of disputed paternity.

Table 1: ABO Test Results of the Fig Paternity Case

	Mother	Child	Fig (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, **Fig**, could not have been the child's father. [70 marks]
- b) Explain the recommendations you would provide to the magistrate for this case to be concluded using evidence from the Paternity Laboratory? [30 marks]

End of paper