

Candidate Reg Number.....



“Investing in Africa’s Future”

**COLLEGE OF HEALTH, AGRICULTURE & NATURAL SCIENCES
DEPARTMENT OF BIOMEDICAL AND LABORATORY SCIENCES**

BACHELOR OF MEDICAL LABORATORY SCIENCES HONOURS

END OF SEMESTER EXAMINATIONS

NSLS406: BLOOD BANK II

APRIL, 2026

LECTURER: PROFESSOR. EMMANUEL OBEAGU

DURATION: 3 HOURS

INSTRUCTIONS

1. Write your candidate number on the space provided on top of each page
 2. Answer **all** questions in sections A on the question paper.
 3. Answer **all** questions in section B on separate answer sheets provided.
 4. Answer any **3** questions in section C on separate answer sheets provided
 5. Mark allocation for each question is indicated at the end of the question
 6. Credit will be given for logical, systematic and neat presentations in sections B and C
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SECTION A (MULTIPLE CHOICE): 20 MARKS-

Instruction:

Answer all questions by encircling the correct response T for TRUE or F for FALSE for each statement in all the questions

Each Correctly Answered Question is 1 Mark

1. The minimum haemoglobin level required for male blood donors is:
A. 10.0 g/dl **T or F**
B. 11.0 g/dl **T or F**
C. 12.5 g/dl **T or F**
D. 14.0 g/dl **T or F**
2. The anticoagulant commonly used in blood collection bags is:
A. EDTA **T or F**
B. Heparin **T or F**
C. CPDA-1 **T or F**
D. Sodium citrate only **T or F**
3. Cryoprecipitate is rich in:
A. Albumin **T or F**
B. Factor VIII and fibrinogen **T or F**
C. Platelets **T or F**
D. Immunoglobulins **T or F**
4. A person with blood group O has which antibodies in plasma?
A. Anti-A **T or F**
B. Anti-B **T or F**
C. Anti-A and Anti-B **T or F**
D. None **T or F**
5. Haemolytic disease of the newborn is most commonly associated with:
A. ABO incompatibility **T or F**
B. Rh(D) incompatibility **T or F**
C. Kell incompatibility **T or F**
D. Duffy incompatibility **T or F**
6. The indirect antiglobulin test (IAT) is used in:
A. DAT testing **T or F**
B. Antibody screening **T or F**
C. Elution studies **T or F**
D. Blood grouping **T or F**
7. The gel card method is an example of:
A. Enzyme technique **T or F**
B. Solid phase assay **T or F**
C. Column agglutination technology **T or F**
D. Tube method **T or F**
8. TACO is best prevented by:
A. Slow transfusion and diuretics **T or F**

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- B. Using leukoreduced blood **T or F**
C. Washing red cells **T or F**
D. Using O-negative blood **T or F**
9. Anti-D immunoglobulin is given to:
A. Treat HDN **T or F**
B. Prevent maternal Rh sensitization **T or F**
C. Increase fetal Hb **T or F**
D. Treat anaemia **T or F**
10. Which infection is NOT routinely screened in blood donors?
A. HIV **T or F**
B. Hepatitis B **T or F**
C. Hepatitis C **T or F**
D. Tuberculosis **T or F**
11. The most common route of transfusion-transmitted malaria is:
A. Platelets **T or F**
B. Whole blood **T or F**
C. Plasma only **T or F**
D. Cryoprecipitate **T or F**
12. Platelets are stored at:
A. 2–6°C **T or F**
B. –20°C **T or F**
C. 20–24°C with agitation **T or F**
D. 37°C **T or F**
13. Once issued, blood should be transfused within:
A. 30 minutes **T or F**
B. 2 hours **T or F**
C. 4 hours **T or F**
D. 8 hours **T or F**
14. The most common cause of acute haemolytic transfusion reaction is:
A. Storage lesion **T or F**
B. Clerical error **T or F**
C. Alloimmunisation **T or F**
D. Bacterial contamination **T or F**
15. Leukoreduction primarily reduces risk of:
A. TRALI **T or F**
B. FNHTR and CMV transmission **T or F**
C. ABO incompatibility **T or F**
D. Bacterial sepsis **T or F**
16. The purpose of antibody titration in pregnancy is to:
A. Diagnose anaemia **T or F**
B. Monitor severity of maternal alloimmunization **T or F**
C. Screen donors **T or F**
D. Detect TTIs **T or F**
17. Which parameter is routinely checked before every donation to ensure donor safety?
A. Blood pressure only **T or F**
B. Body temperature **T or F**

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- C. Haemoglobin/haematocrit **T or F**
D. Blood glucose **T or F**
18. Which blood component is indicated for hypofibrinogenaemia?
A. Platelets **T or F**
B. Fresh frozen plasma **T or F**
C. Cryoprecipitate **T or F**
D. Albumin **T or F**
19. Anti-A and Anti-B antibodies are usually of which immunoglobulin class?
A. IgG **T or F**
B. IgA **T or F**
C. IgM **T or F**
D. IgE **T or F**
20. Which antibody is most commonly implicated in severe haemolytic disease of the newborn after anti-D?
A. Anti-Lea **T or F**
B. Anti-Kell **T or F**
C. Anti-Pl **T or F**
D. Anti-Lua **T or F**

SECTION B: 20 MARKS

Instruction: Answer all questions on separate answer sheets provided

1. State Five (5) mediators released in IgE-mediated allergic reactions **5 Marks**
2. Indicate five (5) the immunological defects in HIV infection **5 Marks**
3. Mention five (5) advantages of nucleic acid testing (NAT) over serology in TTI screening **5 Marks**
4. List five (5) reasons for maintaining accurate transfusion records **5 Marks**

SECTION C: 60 MARKS

Instruction: Answer any 3 questions from this section on separate answer sheets provided

1. Describe neonatal transfusion practices **20 Marks**
2. Discuss the pathogenesis, laboratory diagnosis, and prevention of haemolytic disease of the newborn (HDN) **20 Marks**
3. Give a detailed account of Antibody screening and identification in Blood Transfusion Science **20 Marks**
4. Critically analyse Type II hypersensitivity with reference to immune haemolytic anaemia and haemolytic disease of the newborn **20 Marks**
5. Explain mechanisms of immunodeficiency secondary to HIV infection **20 Marks**