

**BOWEN UNIVERSITY, IWO**  
**COLLEGE OF AGRICULTURE, ENGINEERING, AND SCIENCE**  
**MICROBIOLOGY PROGRAMME**  
**2022/2023 FIRST SEMESTER EXAMINATION**  
**MCB 417: VIROLOGY AND TISSUE CULTURE**  
**(THEORY OF PRACTICAL)**

Answer ALL questions.

**Time allowed: 1hr 15 mins**

1. (a) If you are given an aliquot (0.1mL) of Influenza virus antigen, briefly describe how you will cultivate it in an embryonated Hen's egg **(7 marks)**  
(b) List six essential components of Polymerase Chain Reaction **(3 marks)**
  
2. Name the type of test/technique you will use to approach the following and describe their principle:
  - (i) Monitoring of the presence of antibodies to HIV proteins at different stages of infection **(2 marks)**
  - (ii) Detection of HIV nucleic acid in the blood of a 2-month-old baby **(2 marks)**
  - (iii) Suspected acute measles virus infection **(2 marks)**
  
3. If a virus suspension (0.1ml) from dilutions of  $10^{-1}$ ,  $10^{-2}$ ,  $10^{-3}$ ,  $10^{-4}$  and  $10^{-5}$  each was inoculated into ten mice and 10, 10, 6, 2, and 0 mice respectively died. Calculate the titre of the virus using Reed and Muench method **(9 marks)**

**(25 marks)**