



**KISII UNIVERSITY**  
**UNIVERSITY EXAMINATIONS**

**SECOND YEAR EXAMINATION FOR THE AWARD OF THE DEGREE OF  
BACHELOR OF SCIENCE IN BIOMEDICAL SCIENCES AND TECHNOLOGY  
SECOND SEMESTER 2021/2022  
[JUNE-SEPTEMBER, 2022]**

**BMED 234: VIROLOGY**

**STREAM: Y2S2**

**TIME: 2 HOURS**

**DAY: FRIDAY, 9:00 – 11:00 AM**

**DATE: 09/09/2022**

**INSTRUCTIONS**

- 1. Do not write anything on this question paper.**
- 2. Answer ALL questions in Section A and any TWO from Section B.**

**SECTION A: (40 MARKS)**

**ANSWER ALL QUESTIONS IN THIS SECTION**

1. Outline five genome properties used by the international committee for taxonomy of viruses to classify viruses. (5marks)
2. Describe the experiment carried out by **Dmitri Iwanowski** that led to the discovery of viruses. (5marks)
3. With a sketch diagram of a bacteriophage illustrate a generalized structure of a viral particle. (5marks)
4. a) Briefly differentiate with examples localized and disseminated viral infections. (2marks)  
b) Explain the various modes of viral transmissions in humans. (3marks)
5. Describe mechanisms through which viruses evade the host immune response. (5marks)

6. a) Give a detailed account on the application of ELISA technique in diagnosis of viral infections. (2marks)
- b) Outline three steps of the Polymerase Chain Reaction (PCR) technique in viral diagnosis (3marks)
7. a) Describe cytopathologic effects(CPE) used to demonstrate viral growth in primary cell cultures. (2marks)
- b) With specific examples of viruses explain the sites in embryonated chicken egg used for cultivation of viruses. (3marks)
8. A patient is confirmed to have HIV in the hospital. Explain briefly the advice you will give to the patient on management of the condition. (5marks)

### **SECTION B (30 MARKS)**

**Answer any two questions from this section. All questions carry equal marks**

9. A young teenage boy was bitten by a dog and developed a paralytic complication after 3months. Laboratory investigation revealed Rabies virus infection. Discuss the pathogenesis, diagnosis and management of this infection. (15marks)
10. A 40-year-old woman who has underlying condition is admitted to hospital with severe respiratory symptoms. A Covid-19 diagnosis done using PCR confirmed the test. Discuss the transmission, clinical signs and management of the infection. (15marks)
11. In one of the Kenyan Informal Settlement Schemes, young children were developing paralytic conditions. Scientific investigations revealed a viral infection with a Picornaviridae family virus. Explain how you will carry out Laboratory diagnosis to determine the specific virus causing this infection, its transmission and pathogenesis. (15marks)