

**MERU UNIVERSITY OF SCIENCE AND TECHNOLOGY**

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**University Examinations 2015/2016**

THIRD YEAR, FIRST SEMESTER EXAMINATION FOR BACHELOR OF SCIENCE IN CROP PROTECTION

**SBT 2419: VIROLOGY**

**DATE: NOVEMBER, 2015 TIME:** $2 $**HOURS**

**INSTRUCTIONS:** *Answer question* ***one COMPULSORY*** *and any other* ***two*** *questions.*

**QUESTION ONE – (30 MARKS)**

1. What properties distinguish viruses form other micro-organisms? (3 Marks)
2. Briefly describe three theories related to the origin of viruses. What are the problems associated with each of the theories. (6 Marks)
3. Explain the following terms; (5 Marks)
4. Viron
5. Capsomere
6. Describe any three types of viral capsid symmetry. (3 Marks)
7. How is the attachment of a virus to a cell mediated? What is the main factor in determining the susceptibility of a cell to infection by a virus. (2 Marks)
8. Explain two mechanisms of virus entry into a host cell and the mechanisms of virus release from a cell. (4 Marks)
9. State the difference between a productive and abortive virus infection. How does an abortive infection affect a cell? (4 Marks)
10. Explain what is meant by positive sense versus negative sense strand especially in regard to ssRNA viruses. (3 Marks)

**QUESTION TWO (20 MARKS)**

Discuss the virus replication cycle. (20 Marks)

**QUESTION THREE (20 MARKS)**

Discuss gene replication in small double stranded DNA genome viruses. (20 Marks)

**QUESTION FOUR (20 MARKS)**

Discuss RNA and its role in the control of plant viruses. (20 Marks)