



# MERU UNIVERSITY OF SCIENCE AND TECHNOLOGY

P.O. Box 972-60200 – Meru-Kenya

Tel: +254(0) 799 529 958, +254(0) 799 529 959, + 254 (0) 712 524 293,

Website: [info@must.ac.ke](mailto:info@must.ac.ke) Email: [info@must.ac.ke](mailto:info@must.ac.ke)

---

## University Examinations 2022/2023

SECOND YEAR SECOND SEMESTER EXAMINATION FOR THE DEGREE OF MASTER  
OF SCIENCE IN MOLECULAR BIOLOGY

### SZE 5150: MOLECULAR VIROLOGY

DATE: APRIL 2023

TIME: 3 HOURS

---

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

---

#### QUESTION ONE (20 MARKS)

- a) Outline four differences between viroids and prions (4 marks)
- b) Describe the viral genome (4 marks)
- c) Highlight any four viral mutants and how they can be developed in the laboratory (4 marks)
- d) Outline the process of generating primary viral culture cells from suspected infected animal cell (5 marks)
- e) Describe any three viral symmetry giving one example in each case (3 marks)

#### QUESTION TWO (20 MARKS)

Discuss any two advantages and disadvantages of various PCR based methods used in identification and quantification of viral particles (20 marks)

#### QUESTION THREE (20 MARKS)

Discuss merits and demerits of transgenic control of plant virus (20 marks)

**QUESTION FOUR (20 MARKS)**

Discuss processes of nucleic acid replication based on David Baltimore virus classification criteria (20 marks)