

BINDURA UNIVERSITY OF SCIENCE EDUCATION
BIOLOGICAL SCIENCES DEPARTMENT
BScBZH
APPLIED VIROLOGY (BZM 403) (2)

MAR 2023

EXAMINATION
2 HOURS (100 MARKS)

INSTRUCTIONS TO CANDIDATES

Answer FOUR questions. You MUST answer QUESTION 1 (Section A) and any THREE questions from section B. Each question carries 25 MARKS. Where a question contains sub-divisions, the mark value of each sub-division is given in brackets. Illustrate your answer where appropriate with large clearly labelled diagrams. You should not spend more than thirty minutes on each question.

SECTION A (COMPULSORY)

1. Give a detailed account of methods used in detection of viral protein and nucleic acids.

SECTION B

2. Write short notes on any **FIVE** of the following:
 - (a) Virus-induced cell fusion. (5 marks)
 - (b) Zika virus disease. (5 marks)
 - (c) Horizontal transmission. (5 marks)
 - (d) Viral replication curve. (5 marks)
 - (e) Concatamers. (5 marks)
 - (f) Cell tropism. (5 marks)
3. Discuss application of a **NAMED** single-stranded DNA virus in plant biotechnology.
4. (a) Describe characteristics of virally transformed cells. (10 marks)
(b) Outline the effects of inactivation of tumour suppressor proteins. (10 marks)
(c) Comment on capacity of viruses to induce host cell apoptosis. (5 marks)
5. Emergence of novel viruses is based on two independent mechanisms. Discuss.
6. (a) Describe the morphology and ultrastructure of retrovirus particles. (15 marks)
(b) Comment on antiviral drug targets in retroviruses. (10 marks)

END OF EXAMINATION QUESTION PAPER