

M.Sc. Examination, 2019
Semester-II
Biotechnology
Course : VIII
(Virology)

Time : 3 Hours

Full Marks : 40

Questions are of value as indicated in the margin.

Answer Question No.1 and **any three** from the rest.

1. Answer **any five** questions : 2×5=10
 - i) Give the structure and function of a pro-drug.
 - ii) Show with example the structural symmetry of viruses.
 - iii) Describe Lassa Virus.
 - iv) Plant viral disease transmission
 - v) How does a viral growth differ from bacterial growth?
 - vi) Which one of the infection routes is most often involved in the neonatal transmission of hepatitis B virus?
 - vii) Why do retroviruses convert their genome to DNA (using reverse transcriptase) and then transcribe it back into viral RNA (and translate that into viral proteins).
 - viii) What causes the viral plaques that appear on a bacterial lawn to stop growing larger?
 2. Compare Plant virus life cycle with animal virus life cycle. What are the classical symptoms of plant virus? 6+4=10
 3. How do viruses cause disease? Explain acute and persistent infection with example. Define and explain latency with suitable example. 2+4+4=10
 4. Name and describe the major shapes of nucleocapsids of viruses. For each one, describe a specific virus that is an example. What are advantages, if any, of each shape? Include discussion of viral envelopes. 2+3+3+2=10
 5. Classify Myxoviruses with examples. What is the genomic nature of Influenza virus? Describe the basic structure of Influenza virus. Write down the roles of Hemagglutinin and Neuraminidase. 2+2+3+3=10
 6. Short notes on **any four** of the following : 2.5×4=10
 - i) Blue tongue virus
 - ii) Viroids
 - iii) Prions
 - iv) Nuclear entry to virus
 - v) Baltimore classification
 - vi) Infectious mononucleosis
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