



**WEST BENGAL STATE UNIVERSITY**  
B.Sc. Programme 6th Semester Examination, 2022

**MLBGDSE04T-MOLECULAR BIOLOGY (DSE2)**

Time Allotted: 2 Hours

Full Marks: 40

*The figures in the margin indicate full marks.  
Candidates should answer in their own words and adhere to the word limit as practicable.  
All symbols are of usual significance.*

1. Answer any **ten** questions from the following: 1×10 = 10
- (a) Name any two beneficial viruses.
  - (b) What are hybrid capsids?
  - (c) Define the term 'endemic'.
  - (d) Give an example of a virus that belongs to the Baltimore Class 4 family.
  - (e) Give two examples of non-enveloped viruses.
  - (f) What is herd immunity?
  - (g) What are satellite viruses?
  - (h) Name one DNA virus having reverse transcriptase.
  - (i) Name any two antiviral compounds.
  - (j) What do you mean by nosocomial infection?
  - (k) Write down the name of any virus that can be transmitted via fecal-oral route.
  - (l) What do you mean by a bacteriophage?
  - (m) Name any two plant viruses.
  - (n) What do you mean by 'plaques'?
  - (o) Name a virus that affects our nervous system upon infection.
2. Answer any **ten** questions from the following: 2×10 = 20
- (a) Give one example of a lytic phage and one example of a lysogenic phage.
  - (b) What are the different types of primers used for the replication of viral genome?
  - (c) Briefly explain the mode of transmission of HIV.
  - (d) Write down the symptoms of influenza. .
  - (e) Mention the properties of an ideal vaccine.
  - (f) What do you mean by incubation period?
  - (g) Is there any difference between Morbidity and Mortality? If yes what are the differences?

- (h) What do you mean by passive vaccination?
- (i) What is the difference between Attenuated vaccines and Inactivated vaccines?
- (j) What are temperate phages?
- (k) What do you mean by enzootic and epizootic infection?
- (l) Complete the sentences: —
  - (i) Epidemiology deals with \_\_\_\_\_.
  - (ii) Pandemic is \_\_\_\_\_.
- (m) Write down the symptoms of AIDS condition.
- (n) What are TP precursors? Write down their function.
- (o) Name two DNA viruses which replicate their genome in the cytosol.

3. Answer any *two* questions from the following: 5×2 = 10
- (a) What are the two repressor proteins of lambda phage? What are their functions? 1+2+2  
How does the lambda phage maintain its lytic cycle?
  - (b) What do you mean by the temporal regulation of gene expression in a bacteriophage? Can bacteriophages be used as therapeutic agents? Give reasons for your answer. Mention some (at least two) unique features of T4 phage. 2+1+2
  - (c) What do you mean by cytopathic effect? What are the different models of replication by which dsDNA genome of the virus replicate? 2+3
  - (d) Explain the different mechanisms of viral entry into the infected cell. What do you mean by period of infectivity? 4+1

**N.B. :** *Students have to complete submission of their Answer Scripts through E-mail / Whatsapp to their own respective colleges on the same day / date of examination within 1 hour after end of exam. University / College authorities will not be held responsible for wrong submission (at in proper address). Students are strongly advised not to submit multiple copies of the same answer script.*

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