



WEST BENGAL STATE UNIVERSITY

B.Sc. Honours 4th Semester Examination, 2020

MCBACOR09T-MICROBIOLOGY (CC9)

VIROLOGY

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*

Answer Question No. 1 is compulsory and answer any *four* questions from the rest

1. Answer any *four* questions from the following: 2×4 = 8
 - (a) What is icosahedron? Give one example of bacteriophage having icosahedral head.
 - (b) What is concatemer?
 - (c) What is burst size?
 - (d) What do you understand by segmented genome? Give example.
 - (e) What is capsid?
 - (f) Draw a hypothetical one step growth curve for bacteriophage.
 - (g) What is the uniqueness of hepatitis B virus genome?

2. (a) How does CII-CIII association help in lysogenization of lambda phage into the *E.coli* chromosome? 3
 - (b) What is the role of CRO in the life cycle of lambda phage? 3
 - (c) In S⁻ mutant of lambda phage, what would be the physical abnormalities? 2

3. (a) How can you show that viral envelop is originated from host? 3
 - (b) How does T4 phage protect its own DNA from phage coded exonucleases? 3
 - (c) Suppose you want to isolate bacteriophage of *E.coli* from cow dung, what would be the experimental procedure? 2

4. (a) How can you classify viruses? Represent the Baltimore classification scheme with example of polio virus. 2+3
 - (b) Why RNA viruses are more prone to mutations and much virulent than DNA viruses? 3

5. (a) What are the mechanisms of action of amantadine? Where these drugs are used? 3+2
(b) In which cases acyclovir is prescribed? 1
(c) What are Retroid viruses? 2
6. (a) What is vaccine? How viral vaccines are developed? 2+3
(b) Why is it difficult to produce vaccine against influenza virus? 2
(c) What was the first vaccine developed in the world? 1
7. (a) What are LTRs? Mention the significance of LTR. 4
(b) How does SV40 promote cellular transformation? 2
(c) What are the properties of the genome of picorna virus? 2
8. (a) What is the difference between antigenic drift and shift? 4
(b) What is the VPg? What is its function? 2
(c) What is peplomer? 2
9. (a) Describe briefly the genome structure of adeno virus with a suitable diagram. 4
(b) State the differences between transducing and non transducing retro viruses. 3+1
Give example of one viral oncoprotein and mention its function.

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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