

[This question paper contains 4 printed pages.]

1450

Your Roll No.

B.Sc. (Hons.)/II

A

MICROBIOLOGY – Paper VI

(Virology)

(Admissions of 2004 and after)

Time : 3 Hours

Maximum Marks : 60

*(Write your Roll No. on the top immediately
on receipt of this question paper.)*

Attempt any five questions.

All questions carry equal marks.

1. Define the following terms with suitable examples
(any 8)
 - (a) Vertical transmission
 - (b) Myco viruses
 - (c) Overlapping genes
 - (d) Systemic infection
 - (e) Diploid cell line

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1450

2

(f) Hypersensitive response

(g) Tumor suppressor gene

(h) Apoptosis

(i) Alternate splicing

(j) Cell attachment protein (1½×8=12)

2. (a) List the contributions of the following : **(any four)**

(i) Fredrick Twort

(ii) Robert C. Gallo

(iii) T.O. Diener

(iv) Max Delbrück

(v) J. Salk (1½×4=6)

(b) What are ambisense viruses ? Give an example.
How do they replicate ? (4)

(c) What are nucleoside analogues ? Give an example. (2)

3. (a) Discuss the mode of action of Interferons. (4)

(b) Elaborate the term PTGS and discuss its mechanism and applications. (5)

1450

3

- (c) What do you understand by the term "quasiequivalence"? Discuss its types with examples. (3)
4. Differentiate between the following (any four)
- (a) Virusoid and defective particle
 - (b) Systemic spread of plant and animal viruses
 - (c) Filoviridae and Flaviviridae
 - (d) Oncogenesis by any DNA and any RNA virus
 - (e) Retrovirus and retroid elements (3×4=12)
5. (a) What is phage display technique? Who gave this technique? Discuss its applications. (5)
- (b) Elaborate the term ISEM and discuss its significance in virology. (4)
- (c) Explain the difference between antigenic shift and antigenic drift with example. (3)
6. (a) Write the salient features of the genomes of the following viruses
- (i) Influenza virus

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1450

4

(ii) T4 phage

(iii) Caulimovirus

(3×3=9)

(b) Differentiate between DNA vaccine and subunit vaccine. (3)

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