

[This question paper contains 4 printed pages.]

6096

Your Roll No.

B.Sc. (H) Microbiology / III Sem. B

Paper – MIHT-304

Virology

Time : 3 Hours

Maximum Marks : 75

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

*Attempt any **Five** questions.*

All questions carry equal marks.

1. (a) Differentiate between the following :
 - (i) Pr P and Pr Psc
 - (ii) Virusoids and Satellite viruses (2×2=4)
 - (b) Discuss the capsid symmetry of viruses giving suitable examples. (4)
 - (c) Discuss the characters and mode of replication of viroids. (4)
 - (d) Explain the theories of viral origin. (3)
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2. (a) What do you understand by Diploid cell strains ? How they are developed and what is their significance ? How do they differ from cell lines. (5)

P.T.O.

- (b) Discuss the general methodology of purification of plant viruses. (5)
- (c) Differentiate between persistent and non-persistent transmission of viruses. (5)
3. (a) Give one example each of the virus belonging to the following families : **(any seven)**
- (i) Paramyxoviridae
 - (ii) Adenoviridae
 - (iii) Filoviridae
 - (iv) Tospoviridae
 - (v) Germiniviridae
 - (vi) Bromoviridae
 - (vii) Myoviridae
 - (viii) Reoviridae (1×7=7)
- (b) What are the salient features of the following viruses : **(any four)**
- (i) Retrovirus
 - (ii) Arenavirus
 - (iii) TMY
 - (iv) Influenza virus
 - (v) HBV (2×4=8)

4. (a) Comment upon the following :

(i) The base composition varies considerably in different viruses some even contain abnormal bases. (2)

(ii) In many bacteriophages containing dsDNA, circularization takes place within the host cell by their characteristic terminal ends. (4)

(b) Discuss the regulation of gene expression in phage λ . (6)

(c) Explain the lysogeny in lambda phage. (3)

5. (a) Name the receptors sites of following viruses :

(i) Polio

(ii) HIV

(iii) Influenza

(iv) T_4 (1×4=4)

(b) Discuss the replication of following viruses :

(i) Retroviruses

(ii) ssDNA viruses (4×2=8)

(c) Comment upon the assembly, maturation and release of viruses taking a suitable example. (3)

6. (a) Give three examples of oncogenic DNA viruses. (3)
- (b) Discuss the following : (any one)
- (i) Cellular oncogenes
 - (ii) Tumour Suppressor genes (2)
- (c) Give the mode of action of any one of the following :
- (i) Acyclovir
 - (ii) AZT (2)
- (d) Discuss the molecular mechanism of interferon induced antiviral resistance. (4)

OR

What are subunit vaccines ? How are they made ?

- (e) Discuss the role of viruses in gene therapy. (4)