

This question paper contains 3 printed pages]

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S. No. of Question Paper : 986

Unique Paper Code : 253301

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Name of the Paper : Virology (MIHT-304)

Name of the Course : B.Sc. (Hons.) Microbiology

Semester : III

Duration : 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) Write briefly about the following (any *seven*) :

2×7=14

- (i) Bipartite virus
- (ii) Proto-oncogene
- (iii) Cell attachment protein
- (iv) Late protein
- (v) Virusoid
- (vi) Mimivirus
- (vii) Phycodna virus
- (viii) Cohesive ends
- (ix) Unusual bases.

(b) Name any *two* prion diseases.

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P.T.O.

2. (a) Comment on the contributions of Renato Delbecco and Robert C Gallo. 2
- (b) Why are viruses considered to be acellular organisms ? 2
- (c) Draw well labelled diagram of an enveloped virus with segmented genome and helical symmetry. 3
- (d) Diagrammatically explain one step multiplication curve of bacteriophages. 3
- (e) Briefly discuss the principle of phage display technique. 2
- (f) What is the basis of Baltimore's classification of viruses. 3
3. (a) Diagrammatically depict the replication of Adenovirus OR Hepatitis B virus. 6
- (b) Give the salient features of the genome of the following viruses (any *two*) : $3 \times 2 = 6$
Retrovirus, TMV, phiX174.
- (c) Comment on the replication of viroids. 3
4. (a) Differentiate between any *three* of the following : $3 \times 4 = 12$
- (i) Persistent and acute infection
- (ii) Differential and density gradient centrifugation
- (iii) PrPC and PrPsc
- (iv) Ambisense and positive sense RNA genome.
- (b) Name any *three* oncogenic DNA viruses. 3
5. (a) Differentiate among recombinant protein vaccine and DNA vaccine. 4
- (b) Discuss the mode of action of Interferons. 5

- (c) Comment on the entry of enveloped virus in the host cell. 3
- (d) Diagrammatically depict the assembly of T4 phages. 3
6. (a) Explain the mode of action of Oseltamavir and AZT. 4
- (b) Differentiate between phage lambda and P1 lysogeny. 4
- (c) Discuss co-evolution theory of viral origin. 3
- (d) Name the family to which the following viruses belong (any *eight*) : 4

Rubella virus, Mumps virus, Hepatitis A virus, Maize streak virus, M13 phage, Potato virus Y, chicken pox virus, Ebola virus, Dengue virus.