

Master of Science (M.Sc.) Semester—IV (CBCS) (Microbiology) Examination

VIROLOGY (VIR)

Paper—I (Compulsory)

Time : Three Hours]

[Maximum Marks : 80

Note : ALL questions are compulsory and carry equal marks.

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|--|----|
| 1. Discuss the classification of viruses as per 8 th Report of ICTV-2005. | 16 |
| OR | |
| (a) Give a brief account of origin and evolution of viruses. | 8 |
| (b) Describe various types of viral nucleic acids with suitable examples. | 8 |
| 2. Describe the structural organization and lysogenic cycle of Lambda (λ) phage. | 16 |
| OR | |
| Discuss in detail life cycle of Muphage. | 16 |
| 3. Discuss the structure, life cycle and pathogenicity of Rhabdovirus. | 16 |
| OR | |
| (a) Discuss laboratory diagnosis of HIV virus. | 8 |
| (b) Describe life cycle of influenza virus. | 8 |
| 4. Describe the structure and mechanism of Ganciclovir, Delvidine and Saquinavir. | 16 |
| OR | |
| (a) Describe haemadsorption inhibition method for virus detection. | 8 |
| (b) Discuss the structure and mechanism of Amantadine and Indinavir. | 8 |
| 5. Write notes on : | |
| (a) Helical symmetry in viruses | 4 |
| (b) Bacteriophage typing | 4 |
| (c) Potato virus | 4 |
| (d) Type of IFN. | 4 |

Master of Science (M.Sc.) (Microbiology) Semester—IV (C.B.S.) Examination

VIROLOGY (VIR)

Compulsory Paper—2

Time : Three Hours]

[Maximum Marks : 100

Note :— **ALL** questions are compulsory and carry equal marks.

1. Describe the genetic classification of viruses with suitable examples. 20

OR

- Describe the chemical composition of viruses with suitable examples. 20
2. Describe the structural organization and life cycle of M13 phage. 20

OR

- Describe the lysogenic cycle of Lambda phage. 20
3. Discuss the pathogenesis and laboratory diagnosis of Influenza virus. 20

OR

- Describe the life cycle of Herpes virus. 20
4. Discuss the mechanism of action of Interferons. 20

OR

- Describe the structure and mechanism of Ganciclovir, Efavirenz and Ritonavir. 20
5. Write short notes on :
 - (a) Origin of Viruses 5
 - (b) Structure of T4 phage 5
 - (c) HIV 5
 - (d) Principle of RIA. 5

NRT/KS/19/2903

Master of Science (M.Sc.) Semester—IV (C.B.C.S.) (Microbiology) Examination

VIROLOGY (VIR)

Compulsory Paper—1

Paper—I

Time : Three Hours]

[Maximum Marks : 80

Note :— (1) All questions are compulsory and carry equal marks.

(2) Give diagrams wherever necessary.

1. Give a comprehensive account of different methods of Assays of Viruses. 16

OR

Describe the diversity of Viral capsids and envelops. 16

2. Describe the structural organization and life cycle of $\phi \times 174$ virus. 16

OR

Write a detail note on :—

(a) M13 virus. 8

(b) One step growth curve. 8

3. Discuss the life cycle, pathogenesis and laboratory diagnosis of Hepatitis viruses. 16

OR

Write in detail :

(a) Laboratory diagnosis of AIDS. 8

(b) TMV and its genetic organization. 8

4. Write in detail about :—

(a) Interferons and their antiviral effects. 8

(b) Immunofluorescence method for viral diagnosis. 8

OR

Describe in detail the antiviral drugs which are non-nucleoside RT inhibitors. 16

5. Write notes on :—

(a) Icosahedral symmetry.

(b) Bacteriophage typing.

(c) Cauliflower mosaic virus.

(d) Complement fixation test. 4×4=16

Master of Science (M.Sc.) Semester—IV (Microbiology) (C.B.C.S.) Examination

VIROLOGY (VIR)

Paper—I
(Compulsory)

014

014 [Maximum Marks : 80]

Time : Three Hours]

N.B. :— (1) All questions are compulsory and carry equal marks.
(2) Draw well labelled diagram wherever necessary.

1. ✓ Discuss structure and chemical composition of viruses with suitable examples. 16
OR 16
Describe genetic classification of viruses with suitable examples. 16
2. ✓ Describe in detail the structural organization and life cycle of T₄ phage infecting E.Coli. 16
OR 16
Describe in detail life cycle of M₁₃ phage. 16
3. Write notes on :—
(a) ✓ Laboratory diagnosis of herpes virus. 8
(b) ✓ Life cycle of Tobacco Mosaic virus. 8
OR
Give a detail account on pathogenicity and laboratory diagnosis of Hepatitis-B virus infection. 16
4. ✓ Write a descriptive note on mechanism of induction and molecular basis of antiviral activity of interferon. Add a note on types of interferon. 16
OR
Describe structure and mechanism of action of :
(a) Amantadine
(b) Ritonavir. 8
5. Write short notes on :—
(a) ✓ Size and shape of viruses 8
(b) ✓ Structure of Mu phage 4
(c) ✓ Structure of HIV 4
(d) ✓ Principle of Radioimmunoassays. 4

014

Master of Science (M.Sc.) Fourth Semester Choice Based Credit System
(CBCS) (Microbiology) Examination
VIROLOGY (VIR)
(Compulsory Paper—1)
Paper—1

Time : Three Hours]

[Maximum Marks : 80

N.B. :—All questions are compulsory and carry equal marks.

1. Describe genetic classification of viruses with suitable examples.

OR

10-11
16

2. Give a comprehensive account of different methods of Assays of viruses.

16

2. Describe in detail the structural organization and life cycle of T4 phage infecting E.Coli.

16

OR

Write a detail note on :—

06

8

8

16

- (a) One step growth curve

8

8

16

- (b) Structural organization of $\phi \times 174$ virus.

3. Give a detailed account on pathogenicity and laboratory diagnosis of Herpes virus infection.

OR

Write in detail :—

- (a) TMV and its genetic organization

8

- (b) Orthomyxo viruses

8

4. Describe in detail the antiviral drugs that are non-nucleoside RT inhibitors.

16

OR

Write in detail about :—

- (a) Saquinavir and Ritonavir

8

- (b) Structure and mechanism of action of stavudine

8

5. Write notes on :—

- (a) Icosahedral Symmetry

4

- (b) Bacteriophage typing

4

- (c) Papova virus

4

- (d) Mode of action of Vidarabine

4