

THE TAMIL NADU DR. M.G.R. MEDICAL UNIVERSITY

[AHS 1022]

OCTOBER 2022

Sub. Code: 9130

**M.Sc. MOLECULAR VIROLOGY
SECOND YEAR (From 2009-2010 & 2020-2021 onwards)
PAPER III – RECENT ADVANCES IN MOLECULAR VIROLOGY**

Q.P. Code : 289130

Time: Three hours

Answer ALL Questions

Maximum: 100 Marks

I. Elaborate notes on: (2 x 20 = 40)

1. Discuss in detail the classes of antiviral drugs with mechanism of action. Add a note on drug resistance.
2. Write in detail about Phylogenetic analysis and tree construction. Add a note on foot printing.

II. Write Short Notes on: (10x6 = 60)

1. Cytokines.
2. Vaccine delivery system.
3. Hybridization techniques.
4. Antisense RNA.
5. FASTA.
6. Data mining tools.
7. COVID vaccine trials.
8. RT PCR.
9. Sequence alignment.
10. Flow cytometry.

THE TAMIL NADU DR. M.G.R. MEDICAL UNIVERSITY

[AHS 1023]

OCTOBER 2023

Sub. Code: 9130

**M.Sc. MOLECULAR VIROLOGY
SECOND YEAR (From 2020-2021 onwards)
PAPER III – RECENT ADVANCES IN MOLECULAR VIROLOGY**

Q.P. Code: 289130

Time: Three hours

Answer ALL Questions

Maximum: 100 Marks

I. Elaborate notes on:

(2 x 20 = 40)

1. Discuss in detail about the recent advances in antiviral vaccines. Add a note on future challenges in development of vaccines against viral diseases.
2. Write in detail about the basic methodology and application of sequencing in molecular virology. Add a note on ethical issues.

II. Write Short Notes on:

(10x6 = 60)

1. Nif Operon.
2. Interferons.
3. Antiviral therapy against Herpes virus infection.
4. Principle and application of nanotechnology in molecular virology.
5. MLST.
6. Hybridization techniques.
7. Si RNA Ribozymes.
8. Film array.
9. LCR.
10. gDNA Library.

THE TAMIL NADU DR. M.G.R. MEDICAL UNIVERSITY

[AHS 1024]

OCTOBER 2024

Sub. Code: 9130

**M.Sc. MOLECULAR VIROLOGY
SECOND YEAR (From 2020-2021 onwards)
PAPER III – RECENT ADVANCES IN MOLECULAR VIROLOGY**

Q.P. Code: 289130

Time: Three hours

Answer ALL Questions

Maximum: 100 Marks

I. Elaborate on:

(2x20=40)

1. Discuss in detail about the current status and future scope of immunomodulators as therapeutic agents in treatment of viral diseases.
2. Enumerate the advanced molecular techniques in virology. Discuss in detail about array technology and its application in molecular virology.

II. Write Short Notes on:

(10x6=60)

1. Phylogenetic tool printing.
2. Data mining tools.
3. Britten and Davidson's model in Eukaryotes.
4. Chimeric live viral vaccines.
5. Antiviral drugs acting on viral replication.
6. Motif searches.
7. Application of nanotechnology.
8. QA/QC issues in viral vaccine production.
9. BLAST.
10. Antisense RNA.

THE TAMIL NADU DR. M.G.R. MEDICAL UNIVERSITY

[AHS 1025]

OCTOBER 2025

Sub. Code: 9130

**M.Sc. MOLECULAR VIROLOGY
SECOND YEAR (From 2020-2021 onwards)
PAPER III – RECENT ADVANCES IN MOLECULAR VIROLOGY**

Q.P. Code: 289130

Time: Three hours

Answer ALL Questions

Maximum: 100 Marks

I. Elaborate notes on:

(2 x 20 = 40)

1. Name the advanced molecular techniques in Virology. Write in detail about the sequencing methods, applications, merits and demerits.
2. Write in detail about phylogenetic analysis and tree-building methods.

II. Write Short Notes on:

(10x6 = 60)

1. Anti-Retroviral therapy.
2. Bio terrorism.
3. Epitope prediction.
4. Ribozymes.
5. DNA vaccines.
6. Watson and Crick model.
7. Scoring matrices.
8. CRISPR and its applications.
9. Primer designing.
10. Nanotechnology.
