

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

[AHS 0222]

**FEBRUARY 2022
(OCTOBER 2021 EXAM SESSION)**

Sub. Code: 9127

**M.Sc. MOLECULAR VIROLOGY
FIRST YEAR (Candidates admitted from 2020-2021 onwards)
PAPER III – BASIC AND APPLIED VIRAL GENETICS AND ENTOMOLOGY
Q.P. Code : 289127**

Time: Three hours

Answer ALL Questions

Maximum: 100 Marks

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

1. Enumerate the differences between RNA and DNA viruses. Describe in detail about RNA viral multiplication.
2. What are prions? Describe the pathogenic mechanisms and diseases caused by them.

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

1. tRNA.
2. Introns and exons.
3. Lac Operon.
4. Post translational modification.
5. Mutations.
6. E coli K12 strain.
7. Application of recombination DNA technology.
8. Public health importance of ticks and mites.
9. Differences between the species of mosquitos.
10. Life cycle of culex mosquito and the diseases caused by them.

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

[AHS 1022]

OCTOBER 2022

Sub. Code: 9127

M.Sc. MOLECULAR VIROLOGY

**FIRST YEAR (Candidates admitted from 2009-2010 & 2020-2021 onwards)
PAPER III – BASIC AND APPLIED VIRAL GENETICS & ENTOMOLOGY**

Q.P. Code : 289127

Time: Three hours

Answer ALL Questions

Maximum: 100 Marks

I. Elaborate notes on:

(2 x 20 = 40)

1. What are prions? Write in detail about the pathogenic mechanisms and diseases caused by them.
2. Describe the mechanism of transcription in prokaryotes and how they differ from eukaryotic transcription mechanism?

II. Write Short Notes on:

(10x6 = 60)

1. Mutation.
2. DNA replication.
3. Histones.
4. Restriction endonucleases.
5. Cell cycle.
6. E.coli K 12 strain.
7. Prevention and control of Japanese encephalitis.
8. Role of mosquitoes in the transmission of dengue and malaria.
9. Public health importance of ticks and control measures.
10. New world and Old world Sand flies and their importance.

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

[AHS 1023]

OCTOBER 2023

Sub. Code: 9127

**M.Sc. MOLECULAR VIROLOGY
FIRST YEAR (From 2020-2021 onwards)
PAPER III – BASIC AND APPLIED VIRAL GENETICS & ENTOMOLOGY**

Q.P. Code: 289127

Time: Three hours

Answer ALL Questions

Maximum: 100 Marks

I. Elaborate notes on:

(2 x 20 = 40)

1. Write in detail about general strategies of viral replication. Write a note on replication of Double stranded RNA virus.
2. Classification of Mosquito. Write in detail about the life cycle of Mosquito and its role in transmission of Dengue, Malaria and Chikungunya.

II. Write Short Notes on:

(10x6 = 60)

1. Mutation.
2. mRNA.
3. trp Operon.
4. RNA polymerases.
5. Watson and Crick model.
6. Replication of adeno associated viruses.
7. Japanese Encephalitis and difficulties encountered in control of JE.
8. Epidemiology of Zika virus.
9. Public health importance of Fleas and Mites.
10. Biology, Ecology and Life history of Ticks with reference to KFD.

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

[AHS 1024]

OCTOBER 2024

Sub. Code: 9127

**M.Sc. MOLECULAR VIROLOGY
FIRST YEAR (From 2020-2021 onwards)
PAPER III – BASIC AND APPLIED VIRAL GENETICS & ENTOMOLOGY**

Q.P. Code: 289127

Time: Three hours

Answer ALL Questions

Maximum: 100 Marks

I. Elaborate notes on:

(2 x 20 = 40)

1. Describe mechanisms underlying mutations with special emphasis on phenotypic variation. Add a note on mutation rates and their outcomes.
2. Enumerate the Vector-borne diseases. Describe the collection, preservation, maintenance and transportation of insects and arthropods.

II. Write Short Notes on:

(10x6 = 60)

1. PCR- Types and application.
2. Viral interference.
3. Shuttle vector.
4. Replicative mechanism in Influenza.
5. Genetic code.
6. Post-transcriptional modification.
7. Prevention of Japanese encephalitis.
8. Sand fly.
9. Kyasanur forest disease.
10. Life cycle of Anopheles.

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

[AHS 1025]

OCTOBER 2025

Sub. Code: 9127

**M.Sc. MOLECULAR VIROLOGY
FIRST YEAR (From 2020-2021 onwards)
PAPER III – BASIC AND APPLIED VIRAL GENETICS & ENTOMOLOGY**

Q.P. Code: 289127

Time: Three hours

Answer ALL Questions

Maximum: 100 Marks

I. Elaborate notes on:

(2 x 20 = 40)

1. Define transcription. Give a detailed account of transcription.
2. What are the different types of PCR? Add a note on the advantages of PCR.

II. Write Short Notes on:

(10x6 = 60)

1. mRNA.
2. Classification of viruses based on nucleic acid.
3. DNA polymerase.
4. Spliceosomes.
5. Morphology of Ticks.
6. CJD.
7. Mutation and its types.
8. Lagging Strand.
9. Tiling Array.
10. Okazaki Fragments.
