

M.Sc. MOLECULAR VIROLOGY DEGREE EXAMINATION**SECOND YEAR****(For candidates admitted from 2009-2010 onwards)****PAPER II – APPLIED EPIDEMIOLOGY AND APPLIED ENTOMOLOGY****Q.P. Code: 289129****Time : Three Hours****Maximum : 100 marks****Answer ALL questions in the same order.****I. Elaborate on:****Pages Time Marks
(Max.) (Max.) (Max.)**

- | | | | |
|---|----|---------|----|
| 1. Describe the steps in conducting a case-control study. | 17 | 40 min. | 20 |
| 2. Explain the steps in investigation of an epidemic. | 17 | 40 min. | 20 |

II. Write notes on:

- | | | | |
|--|---|---------|---|
| 1. Types of infectious disease surveillance. | 4 | 10 min. | 6 |
| 2. Establishing surveillance system for infectious diseases. | 4 | 10 min. | 6 |
| 3. Xenodiagnosis. | 4 | 10 min. | 6 |
| 4. Mechanism of virus transmission in vectors. | 4 | 10 min. | 6 |
| 5. Geographical Information System in vector borne viral diseases. | 4 | 10 min. | 6 |
| 6. Insecticide resistance in vectors. | 4 | 10 min. | 6 |
| 7. Transgenic vectors. | 4 | 10 min. | 6 |
| 8. Molecular approach to taxonomy of vectors. | 4 | 10 min. | 6 |
| 9. Environmental management in mosquito control. | 4 | 10 min. | 6 |
| 10. Personal protection against vectors. | 4 | 10 min. | 6 |

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(Max.) (Max.) (Max.)**

- | | | | |
|---|----|---------|----|
| 1. Explain the steps in investigation of an epidemic. | 17 | 40 min. | 20 |
| 2. Explain the various methods of control of vectors. | 17 | 40 min. | 20 |

II. Write notes on:

- | | | | |
|--|---|---------|---|
| 1. Types of infectious disease surveillance. | 4 | 10 min. | 6 |
| 2. Establishing surveillance system for infectious diseases. | 4 | 10 min. | 6 |
| 3. Differences between case control and cohort study. | 4 | 10 min. | 6 |
| 4. Relative Risk and Attributable Risk. | 4 | 10 min. | 6 |
| 5. Bias in case control study. | 4 | 10 min. | 6 |
| 6. Xenodiagnosis. | 4 | 10 min. | 6 |
| 7. Mechanism of virus transmission in vectors. | 4 | 10 min. | 6 |
| 8. Geographical Information System in vector borne viral diseases. | 4 | 10 min. | 6 |
| 9. Insecticide resistance in vectors. | 4 | 10 min. | 6 |
| 10. Transgenic vectors. | 4 | 10 min. | 6 |

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Pages	Time	Marks
(Max.)	(Max.)	(Max.)

- | | | | |
|---|----|---------|----|
| 1. Explain in detail the application and importance of Geographical Information System in surveillance, outbreak investigation and management of vector borne diseases. | 17 | 40 min. | 20 |
| 2. Explain in detail the vector control strategies. Discuss the merits and demerits of vector control strategies. | 17 | 40 min. | 20 |

II. Writes notes on:

- | | | | |
|--|---|---------|---|
| 1. Probability and non-probability sampling methods. | 4 | 10 min. | 6 |
| 2. Steps in outbreak investigation. | 4 | 10 min. | 6 |
| 3. Merits and demerits of Cohort studies. | 4 | 10 min. | 6 |
| 4. Relative Risk and Attributable Risk. | 4 | 10 min. | 6 |
| 5. Design of surveillance study for air borne viral infections. | 4 | 10 min. | 6 |
| 6. Mechanism of insecticide resistance. | 4 | 10 min. | 6 |
| 7. Xenodiagnosis. | 4 | 10 min. | 6 |
| 8. Characteristics of biological and mechanical vectors. | 4 | 10 min. | 6 |
| 9. Public health importance of vector mosquitoes. | 4 | 10 min. | 6 |
| 10. Molecular mechanism of pathogenesis of chikungunya and dengue viruses. | 4 | 10 min. | 6 |

[LC 0413]

APRIL 2013

Sub. Code: 9129

M.Sc. MOLECULAR VIROLOGY DEGREE EXAMINATION

SECOND YEAR

(For candidates admitted from 2009-2010 onwards)

PAPER II – APPLIED EPIDEMIOLOGY AND APPLIED ENTOMOLOGY

Q.P. Code: 289129

Time : Three Hours

Maximum : 100 marks

Answer ALL questions

I. Elaborate on:

(2 x 20 = 40)

1. Explain in detail the steps involved in an outbreak investigation.
2. Define xenodiagnosis. Explain the methods and applications of xenodiagnosis.

II. Write notes on:

(10 x 6 = 60)

1. Sample size determination.
2. Merits and demerits of case control study.
3. Establishing surveillance system for viral diseases.
4. Active and passive surveillance systems.
5. Vector control in urban setting.
6. Life cycle of Plasmodium.
7. Differences in the features of Aedes, Anopheles and Culex mosquitoes.
8. Transgenic vectors.
9. Importance of Geographical Information System in the epidemiology of vector borne diseases.
10. Criteria for selection of an effective insecticide.

[LF 1014]

OCTOBER 2014

Sub. Code: 9129

M.Sc. MOLECULAR VIROLOGY DEGREE EXAMINATION

SECOND YEAR

(For candidates admitted from 2009-2010 onwards)

PAPER II – APPLIED EPIDEMIOLOGY AND APPLIED ENTOMOLOGY

Q.P. Code: 289129

Time : Three Hours

Maximum : 100 marks

Answer ALL questions

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

1. Explain in detail the design of surveillance study for viral infections having varied transmission modes and routes.
2. Define xenodiagnosis. Explain the methods and applications of xenodiagnosis.

II. Write notes on: **(10 x 6 = 60)**

1. Steps in outbreak investigation.
2. Merits and demerits of case control study.
3. Analytical tools in epidemiological studies.
4. Sampling methods.
5. Vector control in urban setting.
6. Economic importance of medical entomology.
7. Mechanism of Japanese Encephalitis viral transmission.
8. Characteristics of biological and mechanical vectors.
9. Importance of Geographical Information System in the epidemiology of vector borne diseases.
10. Criteria for selection of an effective insecticide.

[LH 0415]

OCTOBER 2015

Sub. Code: 9129

M.Sc., MOLECULAR VIROLOGY
(for Candidates admitted from 2009-2010 Batch onwards)
SECOND YEAR
PAPER II – APPLIED EPIDEMIOLOGY AND APPLIED ENTOMOLOGY

Q.P. Code : 289129

Time : Three hours

Maximum : 100 marks

I. Elaborate on :

(2 x 20 = 40)

1. Importance of epidemiological tools.
2. Briefly discuss about the JE virus transmission and control strategy.

II. Write notes on:

(10 x 6 = 60)

1. Sampling methods and kinds.
2. Preventive methods to be carried out during infectious disease outbreak.
3. Define GIS, discuss about their components and uses.
4. Role of community participation.
5. Different types of vector control methods.
6. Personal protection against vector borne diseases.
7. Discuss with suitable example about biological and mechanical vector.
8. Study design for public health surveillance.
9. Economic importance of Medical Entomology.
10. Insecticide resistance.

[LJ 1016]

OCTOBER 2016

Sub. Code: 9129

**M.Sc. MOLECULAR VIROLOGY EXAMS
SECOND YEAR
PAPER II – APPLIED EPIDEMIOLOGY AND APPLIED ENTOMOLOGY**

Q.P. Code : 289129

Time : Three hours

Maximum : 100 Marks

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

1. Public health surveillance.
2. Natural cycles and population biology of vector borne pathogens.

II. Write notes on: **(10 x 6 = 60)**

1. Types of sampling methods.
2. Comparison of cohort and case – control study.
3. Mechanism of virus transmission in vectors.
4. Transovarial transmission.
5. Transgenic mosquitoes.
6. Mechanism of insecticide resistance.
7. Transmission cycle of dengue.
8. Biological control of mosquito vectors.
9. Molecular approach to taxonomy of mosquitoes.
10. GIS in vector borne viral diseases.

[LL 1017]

OCTOBER 2017

Sub. Code: 9129

**M.Sc. MOLECULAR VIROLOGY EXAMS
SECOND YEAR
PAPER II – APPLIED EPIDEMIOLOGY AND APPLIED ENTOMOLOGY**

Q.P. Code : 289129

Time : Three hours

Maximum : 100 Marks

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

1. Steps and strategies of outbreak investigations.
2. Transmission of arboviruses and their control.

II. Write notes on: **(10 x 6 = 60)**

1. Merits and demerits of case control and cohort studies.
2. Applications of epidemiological tools.
3. GIS in vector and arbovirus surveillance.
4. Vector control strategies for urban settings.
5. Molecular characterization of vectors.
6. Inhibition of transovarial transmission of viruses.
7. Mechanism of insecticide resistance.
8. Importance of mosquito genetics.
9. Methods of Xeno-diagnosis.
10. Transgenic vectors.

[LN 1018]

OCTOBER 2018

Sub. Code: 9129

**M.Sc. MOLECULAR VIROLOGY EXAMS
SECOND YEAR
PAPER II – APPLIED EPIDEMIOLOGY AND APPLIED ENTOMOLOGY**

Q.P. Code : 289129

Time : Three hours

Maximum : 100 Marks

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

1. Surveillance system of viral diseases.
2. Vector control strategies in urban settings.

II. Write notes on: **(10 x 6 = 60)**

1. Applications of xeno-diagnostics.
2. Cohort studies in epidemiology.
3. Epidemiological tools in public health surveillance.
4. Mechanical transmission of vector borne pathogens
5. Competence in virus-vector relationship.
6. Ecological impact in vector borne diseases.
7. Biochemical approaches in vector taxonomy.
8. Transgenic vectors.
9. Insecticidal resistance.
10. Natural cycles of vector borne pathogens.

[LP 1019]

OCTOBER 2019

Sub. Code: 9129

**M.Sc. MOLECULAR VIROLOGY EXAMS
SECOND YEAR
PAPER II – APPLIED EPIDEMIOLOGY AND APPLIED ENTOMOLOGY**

Q.P. Code : 289129

Time : Three hours

Maximum : 100 Marks

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

1. Basic steps and design of case control study.
2. Explain the molecular characterization of vectors, molecular approach to Taxonomy and Protein as Taxonomic markers.

II. Write notes on: **(10 x 6 = 60)**

1. Types of Infections disease surveillance.
2. What are the steps to be taken for outbreak investigations?
3. Relative and Attributable Risk.
4. Cohort study.
5. GIS in vector borne viral diseases.
6. Population biology of vector borne diseases.
7. Personal protection against vector borne diseases.
8. Vector control in urban setting.
9. Mechanism of virus Transmission in vectors.
10. Importance of medical Entomology.

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

[AHS 0321]

MARCH 2021

Sub. Code: 9129

(OCTOBER 2020 EXAM SESSION)

M.Sc. MOLECULAR VIROLOGY

SECOND YEAR (From 2009-2010 onwards)

PAPER II – APPLIED EPIDEMIOLOGY AND APPLIED ENTOMOLOGY

Q.P. Code : 289129

Time: Three hours

Answer ALL Questions

Maximum: 100 Marks

I. Elaborate notes on:

(2 x 20 = 40)

1. Classify Experimental studies and explain in detail about Randomized controlled trials.
2. Compare hard and soft ticks. Enumerate the disease caused by hard ticks and explain in detail about any one disease caused by them.

II. Write Short Notes on:

(10x6 = 60)

1. Monitoring and surveillance
2. World Health Organization and its activities
3. Long term or secular trends
4. Herd immunity
5. Cold Chain
6. Mosquito control measures
7. Acarology and its importance in human health
8. Dengue
9. Transtadial and transovarian transmission
10. Culex mosquito

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

[AHS 0122]

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

Sub. Code: 9129

**M.Sc. MOLECULAR VIROLOGY
SECOND YEAR (From 2009-2010 onwards)
PAPER II – APPLIED EPIDEMIOLOGY AND APPLIED ENTOMOLOGY
Q.P. Code : 289129**

Time: Three hours

Answer ALL Questions

Maximum: 100 Marks

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

1. What are Pandemics? Write in detail about Infectious disease epidemiology investigations, with special reference to COVID-19.
2. Life history of aedes mosquito. Write in detail about Dengue viral infection and prevention.

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

1. Rates, ratios and proportion.
2. Role of Indian Council of Medical Research (ICMR).
3. Association and causation.
4. Universal Immunization Program.
5. Difference between screening and diagnostic tests.
6. Transmission of arthropod-borne diseases.
7. Role of Ticks in human disease.
8. Xenodiagnosis.
9. Myiasis.
10. Yellow fever.
