

[KD 234]

APRIL 2001

Sub. Code: 3001

M.Sc., (EPIDEMIOLOGY) DEGREE EXAMINATION

FIRST YEAR

PART – I

PAPER I – PRINCIPLES OF EPIDEMIOLOGY AND BIostatISTICS

Q.P. Code: 313001

Time: Three Hours

Maximum: 100 marks

Answer ALL questions

1. What is Causal Association in Epidemiology?
Illustrate your answers with examples. (20)
2. Write briefly on : (30)
 - a) Regression.
 - b) Blinding in a Drug trial.
 - c) Natural history of a disease.
 - d) Sample selection.
3. Mention the various study designs.
Describe in detail how you will conduct a cohort study. (20)
4. Write briefly on : (30)
 - a) Probability.
 - b) Multi Centric Trials.
 - c) Principles of Model Construction.
 - d) Estimation of Risks.

[KI 234]

APRIL 2003

Sub. Code: 3001

M.Sc., (EPIDEMIOLOGY) DEGREE EXAMINATION

FIRST YEAR

PART – I

PAPER I – PRINCIPLES OF EPIDEMIOLOGY AND BIostatISTICS

Q.P. Code: 313001

Time: Three Hours

Maximum: 100 marks

Answer ALL questions

1. Describe in detail how you will plan and carry out a Double Blind Randomized Controlled Trial for evaluating the efficacy of a new chemotherapy for hypertension. What are the ethical issues involved? **(20)**
2. Write briefly on : **(30)**
 - a) Measures of disease frequency.
 - b) Concepts and applications of standard deviation and standard error.
 - c) Stratified analysis and confounding bias.
 - d) Applications of survival analysis.
3. What is cross sectional study?. What are the applications?. Discuss the descriptive and analytical aspects of cross sectional studies. **(20)**
4. Write briefly on : **(30)**
 - a) Predictive value of positive test and treatment threshold.
 - b) Correlation coefficient.
 - c) Standardized Mortality Ratio.
 - d) Simple Random Sampling.

[KK 234]

APRIL 2004

Sub. Code: 3001

M.Sc., (EPIDEMIOLOGY) DEGREE EXAMINATION

FIRST YEAR

PART – I

PAPER I – PRINCIPLES OF EPIDEMIOLOGY AND BIOSTATISTICS

Q.P. Code: 313001

Time: Three Hours

Maximum : 100 marks

**Sec. A & B : Two hours and
forty minutes**

Sec. A & B : 80 marks

Sec. C : Twenty minutes

Sec. C : 20 marks

Answer Section A and B in the SAME answer book.

Answer Section C in the answer sheet provided.

Answer ALL questions

SECTION –A

I. Elaborate on:

(2 x 15 = 30)

1. Discuss the Bradford Hill's criteria for establishing causal association from Observational studies. **(15)**
2. Describe what you understand by probability distribution and discuss standard normal Curve and its applications. **(15)**

SECTION –B

II. Write notes on:

(10 x 5 = 50)

1. Incidence density.
2. Sensitivity and specificity of a screening test..
3. Disadvantages of screening.
4. Incubation period.
5. Active immunity.
6. Direct Standardization.
7. Confidence interval.
8. F-test.
9. Type I error in tests of significance.
10. Survival analysis.

[KN 234]

AUGUST 2005

Sub. Code: 3001

M.Sc., (EPIDEMIOLOGY) DEGREE EXAMINATION

FIRST YEAR

PART – I

PAPER I – PRINCIPLES OF EPIDEMIOLOGY AND BIOSTATISTICS

Q.P. Code: 313001

Time: Three Hours

Maximum : 100 marks

**Sec. A & B : Two hours and
forty minutes**

Sec. A & B : 80 marks

Sec. C : Twenty minutes

Sec. C : 20 marks

Answer Section A and B in the SAME answer book.

Answer Section C in the answer sheet provided.

Answer ALL questions

SECTION –A

I. Elaborate on:

(2 x 15 = 30)

1. What do you understand by natural history of diseases?

Discuss how this knowledge helps in prevention of diseases with suitable examples.

2. What are the tests of significance?

Describe the chi-square test in detail with its merits and demerits.

SECTION –B

II. Write notes on:

(10 x 5 = 50)

1. Measures of mortality.

2. Meta analysis.

3. ROC curve.

4. Period of communicability.

5. Passive immunity.

6. Indirect Standardization.

7. Standard deviation.

8. One way ANOVA.

9. Principles in sample size calculation.

10. Time-series analysis.

[KS 234]

MARCH 2008

Sub. Code: 3001

M.Sc., (EPIDEMIOLOGY) DEGREE EXAMINATION

FIRST YEAR

PART – I

PAPER I – PRINCIPLES OF EPIDEMIOLOGY AND BIostatISTICS

Q.P. Code: 313001

Time: Three Hours

Maximum: 100 marks

Answer ALL questions

I. Elaborate on:

(2 x 20 = 40)

1. What is Bias?

Explain the different types of Bias with examples.

What are the methods available for controlling Bias?

2. Describe the concept of statistical significance.

What are the uses, misuses and limitations of tests of significance?

Comment on clinical significance and statistical significance.

II. Write notes on:

(10 x 6 = 60)

1. Causal association.

2. Retrospective cohort study and nested case control study.

3. Space time cluster studies.

4. Likelihood ratio in diagnostic tests.

5. Standardized Mortality Ratio (SMR).

6. Correlation coefficient.

7. Pictorial representation of data.

8. Survival analysis and its application in epidemiological studies.

9. Cluster sampling method.

10. Confounding and effect modification.

[KU 234]

MARCH 2009

Sub. Code: 3001

M.Sc., (EPIDEMIOLOGY) DEGREE EXAMINATION

FIRST YEAR

PART – I

PAPER I – PRINCIPLES OF EPIDEMIOLOGY AND BIostatISTICS

Q.P. Code: 313001

Time: Three Hours

Maximum: 100 marks

Answer ALL questions

I. Elaborate on:

(2 x 20 = 40)

1. What is sampling?

Write briefly on the different sampling techniques.

How can population parameter be estimated from a sampling?

2. A new vaccine has been produced against HIV.

What are the phases in evaluation of this vaccine?

How will you conduct the 2nd phase of this evaluation.

II. Write notes on:

(10 x 6 = 60)

1. Bias.

2. Population attributable risk.

3. Twin studies.

4. F test.

5. Validity of a screening test.

6. Application of χ^2 test.

7. Types of epidemics.

8. Binomial distribution.

9. Scatter diagram.

10. Epidemiological triad.

[KV 234]

SEPTEMBER 2009

Sub. Code: 3001

M.Sc., (EPIDEMIOLOGY) DEGREE EXAMINATION

FIRST YEAR

PART – I

PAPER I – PRINCIPLES OF EPIDEMIOLOGY AND BIostatISTICS

Q.P. Code: 313001

Time: Three Hours

Maximum: 100 marks

Answer ALL questions

I. Elaborate on:

(2 x 20 = 40)

1. Describe the basic steps involved in conducting randomized controlled trials and discuss about the types of R.C.T.
2. Define confounding and discuss the methods available to control confounding at various stages.

II. Write notes on:

(10 x 6 = 60)

1. Cluster sampling method – Advantages.
2. Standard error versus standard deviation.
3. Meta-analysis.
4. Conditional probability.
5. Relative risk versus attributable risk.
6. ANOVA.
7. Age and adjusted rates.
8. Berksonian Bias.
9. Measurement of morbidity.
10. Stem and leaf plot.

[KY 234]

MAY 2011

Sub. Code: 3001

M.Sc., (EPIDEMIOLOGY) DEGREE EXAMINATION

FIRST YEAR

PART – I

PAPER I – PRINCIPLES OF EPIDEMIOLOGY AND BIostatISTICS

Q.P. Code: 313001

Time: Three Hours

Maximum: 100 marks

Answer ALL questions

I. Elaborate on:

(2 x 20 = 40)

1. What are the differences between Observational studies and experimental studies?
Explain analysis of a cohort study with a suitable example.
2. When do we use ANOVA one-way and Two-way tests and what are the assumptions?
Explain ANOVA one-way with an example.

II. Write notes on:

(10 x 6 = 60)

1. Selection of Controls in a case-control study.
2. Bradford Hill's criteria for causality.
3. Internal and external validity.
4. Health economics and Cost benefit analysis.
5. Correlation coefficient.
6. Direct standardization.
7. Life tables.
8. Laws of probability.
9. Cluster sample.
10. Environmental Pollution & methods of prevention.

M.Sc., (EPIDEMIOLOGY) DEGREE EXAMINATION**FIRST YEAR****PART – I****PAPER I – PRINCIPLES OF EPIDEMIOLOGY AND BIostatISTICS****Q.P. Code: 313001****Time: Three Hours****Maximum: 100 marks****Answer ALL questions****I. Elaborate on :**

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

- | | | | |
|---|----|---------|----|
| 1. What are Observational studies? Name some of the important observational studies and describe in detail a Case-Control study with an example. | 17 | 40 min. | 20 |
| 2. Explain the concept of tests of significance, the underlying assumptions and the interpretation of p-value. What are Type 1 and Type 2 errors? How would you increase the Power of the test for a given Type1 error? | 17 | 40 min. | 20 |

II. Write notes on :

- | | | | |
|---|---|---------|---|
| 1. Ecological studies and ecological fallacy. | 4 | 10 min. | 6 |
| 2. Randomization in Clinical Trials. | 4 | 10 min. | 6 |
| 3. Immunogenicity. | 4 | 10 min. | 6 |
| 4. Attributable risk and etiologic fraction. | 4 | 10 min. | 6 |
| 5. Measures of cost-effectiveness. | 4 | 10 min. | 6 |
| 6. Indirect standardization. | 4 | 10 min. | 6 |
| 7. Logistic regression. | 4 | 10 min. | 6 |
| 8. Non Parametric Tests. | 4 | 10 min. | 6 |
| 9. Sensitivity analysis. | 4 | 10 min. | 6 |
| 10. Secular Trend. | 4 | 10 min. | 6 |

M.Sc., (EPIDEMIOLOGY) DEGREE EXAMINATION**FIRST YEAR****PART – I****PAPER I – PRINCIPLES OF EPIDEMIOLOGY AND BIostatISTICS****Q.P. Code: 313001****Time: Three Hours****Maximum: 100 marks****Answer ALL questions****I. Elaborate on :**

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

- | | | | |
|---|----|---------|----|
| 1. Explain Cohort and Case Control Study Design and its relevant Measures of association with simple example. | 17 | 40 min. | 20 |
| 2. a) Explain the measures of central tendency and dispersion.
b) Write a brief note on Types of Probability Sampling. | 17 | 40 min. | 20 |

II. Write notes on:

- | | | | |
|---|---|---------|---|
| 1. Explain Incidence and Prevalence. | 4 | 10 min. | 6 |
| 2. Write a note on Sensitivity, Specificity, Predictive values, likelihood ratios and ROC. | 4 | 10 min. | 6 |
| 3. Name the types of experimental study designs and explain with simple examples. | 4 | 10 min. | 6 |
| 4. Write a brief note on Epidemiology of diseases of national importance including National Programmes
a) Diarrhea.
b) Sexually Transmitted Diseases.
c) Malnutrition. | 4 | 10 min. | 6 |
| 5. Explain the Natural history of disease. | 4 | 10 min. | 6 |
| 6. Briefly explain probability distribution. | 4 | 10 min. | 6 |
| 7. Write a brief note on Survival Analysis. | 4 | 10 min. | 6 |
| 8. Explain the demographic transition. | 4 | 10 min. | 6 |
| 9. What are the factors affecting fertility. | 4 | 10 min. | 6 |
| 10. Write a note on prevention of environmental pollution. | 4 | 10 min. | 6 |

[LB 1012]

OCTOBER 2012

Sub. Code: 3001

M.Sc., (EPIDEMIOLOGY) DEGREE EXAMINATION

FIRST YEAR

PAPER I – PRINCIPLES OF EPIDEMIOLOGY AND BIostatISTICS

Q.P. Code: 313001

Time: Three Hours

Maximum: 100 marks

Answer ALL questions

I. Elaborate on :

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

- | | | | |
|---|----|---------|----|
| 1. Discuss different methods of Validity and Reliability. | 17 | 40 min. | 20 |
| 2. Discuss Construction of Life table and its uses. | 17 | 40 min. | 20 |

II. Write notes on :

- | | | | |
|---|---|---------|---|
| 1. Incidence and prevalence. | 4 | 10 min. | 6 |
| 2. Modified deterministic model. | 4 | 10 min. | 6 |
| 3. Field trails. | 4 | 10 min. | 6 |
| 4. Relative risk for cohort study. | 4 | 10 min. | 6 |
| 5. Time Series Analysis. | 4 | 10 min. | 6 |
| 6. Differences between standard deviation and standard error. | 4 | 10 min. | 6 |
| 7. Systematic Random Sampling. | 4 | 10 min. | 6 |
| 8. Assumptions of Analysis of Variance. | 4 | 10 min. | 6 |
| 9. General Fertility Rate. | 4 | 10 min. | 6 |
| 10. Epidemiology of road traffic accidents. | 4 | 10 min. | 6 |

[LC 0413]

APRIL 2013

Sub. Code: 3001

M.Sc., (EPIDEMIOLOGY) DEGREE EXAMINATION

FIRST YEAR

PAPER I – PRINCIPLES OF EPIDEMIOLOGY AND BIostatISTICS

Q.P. Code: 313001

Time: Three Hours

Maximum: 100 marks

Answer ALL questions

I. Elaborate on:

(2 x 20 = 40)

1. Define sampling. Discuss the various sampling methods with its merits and demerits.
2. A leading drug company has introduced a new vaccine to prevent cervical cancer.
How will you design a Random ized Controlled Study to measure the effectiveness of the vaccine.

II. Write notes on:

(10 x 6 = 60)

1. Gantt chart.
2. Advantages and disadvantages of a Case control study.
3. Life table and its uses.
4. Advantages and disadvantages of non parametric test.
5. Scale of measurement.
6. Principles of sample size calculation.
7. Time trends in disease occurrence.
8. Time series analysis.
9. Uses of epidemiology.
10. Relative risk and attributable risk.

[LD 1013]

OCTOBER 2013

Sub. Code: 3001

M.Sc., (EPIDEMIOLOGY) DEGREE EXAMINATION

FIRST YEAR

PAPER I – PRINCIPLES OF EPIDEMIOLOGY AND BIostatISTICS

Q.P. Code: 313001

Time: Three Hours

Maximum: 100 marks

Answer ALL questions

I. Elaborate on:

(2 x 20 = 40)

1. Discuss various methods of Observational study designs.
2. Discuss Normal, Binomial and Poisson distributions.

II. Write notes on:

(10 x 6 = 60)

1. Measures of mortality.
2. Likelihood ratio in diagnostic test.
3. Decision tree.
4. Vaccine preventable diseases.
5. Coefficient of variation.
6. Confidence interval.
7. Differences between parametric and non parametric test.
8. Log linear models.
9. Gross Reproduction Rate.
10. Injury control in working environment.

[LE 0414]

APRIL 2014

Sub. Code: 3001

M.Sc., (EPIDEMIOLOGY) DEGREE EXAMINATION

FIRST YEAR

PAPER I – PRINCIPLES OF EPIDEMIOLOGY AND BIostatISTICS

Q.P. Code: 313001

Time: Three Hours

Maximum: 100 marks

Answer ALL questions

I. Elaborate on:

(2 x 20 = 40)

1. Describe the various sources of demographic data and vital statistics.
List the limitations of each.
2. a) Write in detail the steps in conducting a Randomized Clinical Trial (RCT).
b) Mention the advantages of RCT.

II. Write notes on:

(10 x 6 = 60)

1. Normal Distribution.
2. Net reproduction rate.
3. Methods of comparing 3 or more sample means.
4. Scatter plots.
5. Receiver Operating Characteristic (ROC) curve.
6. Ecological studies.
7. Parametric tests.
8. What is a confounder? Explain with an example.
9. Life table and its applications.
10. Sampling error.

[LF 1014]

OCTOBER 2014

Sub. Code: 3001

M.Sc., (EPIDEMIOLOGY) DEGREE EXAMINATION

FIRST YEAR

PAPER I – PRINCIPLES OF EPIDEMIOLOGY AND BIostatISTICS

Q.P. Code: 313001

Time: Three Hours

Maximum: 100 marks

Answer ALL questions

I. Elaborate on:

(2 x 20 = 40)

1. a) Discuss Cohort studies and Case-control studies with suitable examples.
b) Discuss Morbidity rates.
2. a) Explain Direct and Indirect standardization.
b) Differentiate Correlation coefficient and Regression coefficient.

II. Write notes on:

(10 x 6 = 60)

1. Diagnostic tests.
2. Ecological studies.
3. Randomized control trial.
4. Causal association.
5. Sample size calculation for estimation.
6. Histogram and Bar diagram.
7. Systematic random sampling.
8. Binomial distribution.
9. Wilcoxon rank sum test.
10. Log linear models.

[LG 0415]

APRIL 2015

Sub. Code: 3001

M.Sc., (EPIDEMIOLOGY) DEGREE EXAMINATION

FIRST YEAR

PAPER I – PRINCIPLES OF EPIDEMIOLOGY AND BIOSTATISTICS

Q.P. Code: 313001

Time: Three Hours

Maximum: 100 marks

Answer ALL questions

I. Elaborate on:

(2 x 20 = 40)

1. a) What are the differences between Experimental studies and Observational studies?
b) Discuss selection of controls in case-control studies.
2. a) Discuss Direct and Indirect standardization.
b) Differentiate between Karl Pearson correlation method and Spearman rank correlation method.

II. Write notes on:

(10 x 6 = 60)

1. Morbidity rates.
2. Reliability and Validity.
3. Likelihood ratio in Diagnostic test.
4. Blinding in research.
5. Mixed designs.
6. Construction of life table.
7. Co-efficient of variation.
8. Probability.
9. Poisson distribution.
10. Mann-Whitney 'U' test.

[LJ 1016]

OCTOBER 2016

Sub. Code: 3001

**M.Sc. EPIDEMIOLOGY DEGREE EXAMS
FIRST YEAR
PAPER I – PRINCIPLES OF EPIDEMIOLOGY AND BIOSTATISTICS**

Q.P. Code : 313001

Time : Three hours

Maximum : 100 Marks

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

1. Observational analytical with examples, their advantages and disadvantages.
2. Explain methods of multivariate statistical analysis with examples.

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

1. Protection of human participants in research.
2. Types of data with examples.
3. Outbreak investigation.
4. Measures of disease frequency.
5. Correlation.
6. Survival analysis.
7. Diagrammatic presentation of data.
8. Systematic errors.
9. Reliability and validity.
10. Blinding or masking.

[LL 1017]

OCTOBER 2017

Sub. Code: 3001

**M.Sc. EPIDEMIOLOGY EXAMS
FIRST YEAR
PAPER I – PRINCIPLES OF EPIDEMIOLOGY AND BIOSTATISTICS**

Q.P. Code : 313001

Time : Three hours

Maximum : 100 Marks

I. Elaborate on:

(2 x 20 = 40)

1. a) Cohort study with examples.
b) Case-control study with examples.
c) Comparison of characteristics of these studies.
2. a) Principle of probability sampling.
b) Types of probability sampling.
c) Merits and demerits of each of the sampling techniques.

II. Write notes on:

(10 x 6 = 60)

1. Correlation coefficient.
2. Types of data.
3. Reliability.
4. Ecological study.
5. Charts and Graphs.
6. Systematic error.
7. Ethics review of research proposals.
8. Phase IV trials.
9. Wilcoxon signed rank test.
10. Prevalence and Incidence.

[LN 1018]

OCTOBER 2018

Sub. Code: 3001

**M.Sc. EPIDEMIOLOGY EXAMS
FIRST YEAR
PAPER I – PRINCIPLES OF EPIDEMIOLOGY AND BIOSTATISTICS**

Q.P. Code : 313001

Time : Three hours

Maximum : 100 Marks

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

1. What is Natural History of Disease? What study designs can be applied for constructing a Natural History of a Disease? Explain with appropriate example.
2. What are errors in measurement? Explain with appropriate examples how errors in measurement of a disease can be avoided.

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

1. Analytical study designs with examples.
2. Elements of an Informed Consent.
3. Stratified sampling with examples.
4. Ecological Studies with examples.
5. Reliability and Validity.
6. Sensitivity and specificity with examples.
7. Statistical modelling.
8. Descriptive statistics.
9. Measures of central tendency.
10. Uses of epidemiology.

[LP 1019]

OCTOBER 2019

Sub. Code: 3001

M.Sc. EPIDEMIOLOGY EXAMS
FIRST YEAR
PAPER I – PRINCIPLES OF EPIDEMIOLOGY AND BIOSTATISTICS

Q.P. Code: 313001

Time: Three hours

Maximum: 100 Marks

I. Elaborate on:

(2 x 20 = 40)

1. Write briefly on the probability distributions that are commonly used in epidemiological studies and describe the settings in which each is used.
2. Describe the term 'confounding' in epidemiological studies. State the methods for controlling confounding and list the advantages and disadvantages of each method.

II. Write notes on:

(10 x 6 = 60)

1. Briefly explain the types of graphs that can be used to display continuous observations.
2. Write briefly on the commonly used 'measures of dispersion' – the range, the inter-quartile range and the Standard Deviation.
3. What is analysis of variance? State the assumptions needed for analysis of variance.
4. Explain how a chi-square test is performed for hypothesis testing of two dichotomous random variables.
5. Briefly explain the statistical measures to determine the strength of association between two independent nominal random variables.
6. Briefly explain the importance of ecological studies and list the limitations.
7. Describe the essential feature and purpose of an 'intention to treat analysis' and state its main limitations.
8. Write briefly on Standardized Mortality Rate (SMR) and its advantages.
9. Define the term 'randomization' in clinical trials. Write briefly the procedure for randomization.
10. What are the essential elements of a Participant Information Sheet?

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

[AHS 0321]

MARCH 2021

Sub. Code: 3001

(OCTOBER 2020 EXAM SESSION)

M.Sc. EPIDEMIOLOGY

FIRST YEAR (From 2011-2012 onwards)

PAPER I – PRINCIPLES OF EPIDEMIOLOGY AND BIOSTATISTICS

Q.P. Code : 313001

Time: Three hours

Answer ALL Questions

Maximum: 100 Marks

I. Elaborate notes on:

(2 x 20 = 40)

1. Epidemiology is a basic and indispensable science for public health and community medicine. Discuss the statement with common examples.
2. Discuss the process of development of a questionnaire in epidemiological research.

II. Write Short Notes on:

(10x6 = 60)

1. Central limit theorem.
2. Community Diagnosis.
3. How does epidemiology guide clinical decision making.
4. Steps in developing a research question.
5. Measurement scales for quantitative and qualitative variables.
6. Random error and its importance.
7. Preventive Paradox.
8. Determinants of sample size.
9. Visual analog scale.
10. Phases of a clinical trial.

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

[AHS 0921]

**SEPTEMBER 2021
(MAY 2021 EXAM SESSION)**

Sub. Code: 3001

**M.Sc. EPIDEMIOLOGY
FIRST YEAR (From 2011-2012 onwards)
PAPER I – PRINCIPLES OF EPIDEMIOLOGY AND BIOSTATISTICS
*Q.P. Code : 313001***

Time: Three hours

Answer ALL Questions

Maximum: 100 Marks

I. Elaborate notes on:

(2 x 20 = 40)

1. Define Epidemiology. Explain the three components of epidemiology with suitable examples and the importance of each of these components in reducing the impact of COVID pandemic.
2. Explain likelihood ratio with ELISA test for HIV as an example and the interpretation of a positive result and negative result of ELISA for HIV?

II. Write Short Notes on:

(10x6 = 60)

1. Coefficient of variation.
2. ROC curve.
3. Measurement of outcome in a case control study.
4. Null hypothesis.
5. Epidemic curve.
6. Institutional Ethics Committee.
7. Box and Whisker plot.
8. Skewness and Kurtosis in Gaussian curve.
9. 't' test.
10. Ecological fallacy.

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

[AHS 0222]

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

Sub. Code: 3001

**M.Sc. EPIDEMIOLOGY
FIRST YEAR (From 2011-2012 onwards)
PAPER I – PRINCIPLES OF EPIDEMIOLOGY AND BIOSTATISTICS
Q.P. Code : 313001**

Time: Three hours

Answer ALL Questions

Maximum: 100 Marks

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

1. Enumerate the advantages and disadvantages of case control studies. Discuss in detail, the various biases that can occur in a case control study and the methods of preventing them.
2. Explain the terms: Reference population, External population, Actual population and Sample with suitable examples.

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

1. Scatter diagram.
2. Epidemiological approach in planning and evaluation of health care.
3. Ethical considerations while developing a research question.
4. External validity.
5. Numbers Needed to Treat (NNT).
6. Information Bias.
7. Confidence interval.
8. Cross –over design.
9. Kappa coefficient.
10. Requirements of a screening test.

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

[AHS 1022]

OCTOBER 2022

Sub. Code: 3001

**M.Sc. EPIDEMIOLOGY
FIRST YEAR (From 2011-2012 onwards)
PAPER I – PRINCIPLES OF EPIDEMIOLOGY AND BIOSTATISTICS**

Q.P. Code : 313001

Time: Three hours

Answer ALL Questions

Maximum: 100 Marks

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

1. Describe in detail how you will plan and carry out a Double Blind Randomized Controlled Trial for evaluating the efficacy of a new chemotherapy for Diabetes. What are the ethical issues involved?
2. Describe the concept of statistical significance. What are the uses, misuses and limitations of tests of significance? Comment on clinical significance and statistical significance.

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

1. Scatter diagram.
2. Epidemiological approach in planning and evaluation of health care.
3. Ethical considerations while developing a research question.
4. External validity.
5. Numbers Needed to Treat (NNT).
6. Information Bias.
7. Confidence interval.
8. Cross –over design.
9. Kappa coefficient.
10. Requirements of a screening test.

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

[AHS 1023]

OCTOBER 2023

Sub. Code: 3001

**M.Sc. EPIDEMIOLOGY
FIRST YEAR (From 2011-2012 onwards)
PAPER I – PRINCIPLES OF EPIDEMIOLOGY AND BIOSTATISTICS**

Q.P. Code: 313001

Time: Three hours

Answer ALL Questions

Maximum: 100 Marks

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

1. What is Diagnostic Test? Explain about: Sensitivity, Specificity, Positive and Negative Predictive Values with suitable example.
2. Describe in detail the descriptive epidemiology and its significance.

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

1. Define surveillance. Explain Sentinel Surveillance with an example.
2. Explain the types of Blinding with an example of a study in which it is most essential?
3. Ethics in Medical Research.
4. Write a short note on Sample registration system.
5. Compare and contrast Pathogenicity, Virulence and Incidence with an example.
6. Discuss “Human Development Index” as a measure of well-being.
7. Notification of diseases.
8. Type I error in tests of significance.
9. Survival analysis.
10. Active immunity.

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

[AHS 1025]

OCTOBER 2025

Sub. Code: 3001

**M.Sc. EPIDEMIOLOGY
FIRST YEAR (From 2011-2012)
PAPER I – PRINCIPLES OF EPIDEMIOLOGY AND BIOSTATISTICS**

Q.P. Code: 313001

Time: Three hours

Answer ALL Questions

Maximum: 100 Marks

I. Elaborate on:

(2x20=40)

1. Write briefly on the probability distributions that are commonly used in epidemiological studies and describe the settings in which each is used.
2. Explain the concept of tests of significance, the underlying assumptions and the interpretation of p-value. What are Type 1 and Type 2 errors? How would you increase the Power of the test for a given Type1 error?

II. Write Short Notes on:

(10x6=60)

1. Types of epidemics.
2. Log linear models.
3. Explain the demographic transition.
4. Sensitivity analysis.
5. Population attributable risk.
6. Confounding and effect modification.
7. Natural history of disease.
8. Protection of human participants in research.
9. Allocation Ratio and Allocation Concealment.
10. Define surveillance. Explain Sentinel Surveillance with an example.
