

[KD 234]

APRIL 2001

M.Sc. (Epidemiology) DEGREE EXAMINATION.

Part I

**Paper I — PRINCIPLES OF EPIDEMIOLOGY AND
BIO-STATISTICS**

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.
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APRIL 2003

[KI 234]

Sub. Code : 3001

M.Sc. (Epidemiology) DEGREE EXAMINATION.

Part I

Paper I — PRINCIPLES OF EPIDEMIOLOGY AND
BIO-STATISTICS

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.
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AUGUST 2005

[KN 234]

Sub. Code : 3001

M.Sc. (Epidemiology) DEGREE EXAMINATION.

Part I

Paper I — PRINCIPLES OF EPIDEMIOLOGY AND
BIostatISTICS

Time : Three hours Maximum : 100 marks

Sec. A & B : Two hours and Sec. A & B : 80 marks
forty minutes

Sec. C : Twenty minutes Sec. C : 20 marks

Answer Sections A and B in the **SAME** answer book.

Answer Section C in the answer sheet provided.

Answer **ALL** questions.

SECTION A — (2 × 15 = 30 marks)

1. What do you understand by natural history of diseases? Discuss how this knowledge helps in prevention of diseases with suitable examples. (15)
2. What are the tests of significance? Describe the chi-square test in detail with its merits and demerits. (15)

SECTION B — (10 × 5 = 50 marks)

3. Write short notes on :
 - (a) Measures of mortality
 - (b) Meta analysis
 - (c) ROC curve
 - (d) Period of communicability
 - (e) Passive immunity
 - (f) Indirect standardization
 - (g) Standard deviation
 - (h) One way ANOVA
 - (i) Principles in sample size calculation
 - (j) Time-series analysis.

MARCH 2008

[KS 234]

Sub. Code : 3001

M.Sc. (Epidemiology) DEGREE EXAMINATION.

Part I

Paper I — PRINCIPLES OF EPIDEMIOLOGY AND
BIOSTATISTICS

Q.P. Code : 313001

Time : Three hours

Maximum : 100 marks

Answer ALL questions.

I. Essay : (2 × 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 Short notes on : (10 × 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 applications in epidemiological studies.
- (9) Cluster sampling method.
- (10) Confounding and effect modification.

M.Sc (EPIDEMIOLOGY) DEGREE EXAMINATION

Part I

Paper I – PRINCIPLES OF EPIDEMIOLOGY AND BIostatISTICS

Q.P. Code : 313001

Time : Three hours

Maximum : 100 marks

Answer All questions.

I. Essays:

(2 X 20=40)

1. What is sampling? Write briefly on the different sampling techniques. How can population parameter be estimated from a sample?.
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 Short Notes on :

(10X 6 = 60)

1. Bias.
2. Population attributable risk.
3. Twin studies.
4. F test.
5. Validity of a screening test.
6. Application of X^2 test.
7. Types of epidemics.
8. Binomial distribution.
9. Scatter diagrams.
10. Epidemiological triad.

September - 2009

[KV 234]

Sub. Code: 3001

M.Sc (EPIDEMIOLOGY) DEGREE EXAMINATION

Part I

Paper I – PRINCIPLES OF EPIDEMIOLOGY AND BIostatISTICS

Q.P. Code : 313001

Time : Three hours

Maximum : 100 marks

Answer All questions.

I. Essays:

(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 Short Notes on :

(10X 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.

MAY 2011

[KY 234]

Sub. Code: 3001

M.Sc. (EPIDEMIOLOGY) DEGREE EXAMINATION.

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.

October 2011

[KZ 1011]

Sub. Code: 3001

M.Sc (EPIDEMIOLOGY) DEGREE EXAMINATION

PART I

PAPER I – PRINCIPLES OF EPIDEMIOLOGY AND BIostatISTICS

Q.P. Code : 313001

**Time : 3 hours
(180 Min)**

Maximum : 100 marks

Answer ALL questions in the same order.

I. Elaborate on :

Pages (Max.)	Time (Max.)	Marks (Max.)
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- | | | | |
|---|----|----|----|
| 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 | 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 | 20 |

II. Write notes on :

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

May 2012

[LA 0512]

Sub. Code: 3001

M.Sc (EPIDEMIOLOGY) DEGREE EXAMINATION-MAY 2012

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 Time Marks
(Max) (Max) (Max)

1. Explain Cohort and Case Control Study Design and its relevant Measures of association with simple example. 17 40 20

2. a. Explain the measures of central tendency and dispersion.

b. Write a brief note on Types of Probability Sampling. 17 40 20

II. Write notes on:

1. Explain Incidence and Prevalence. 4 10 6

2. Write a note on Sensitivity, Specificity, Predictive values, likelihood ratios and ROC. 4 10 6

3. Name the types of experimental study designs and explain with simple examples. 4 10 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 6

5. Explain the Natural history of disease. 4 10 6

6. Briefly explain probability distribution. 4 10 6

7. Write a brief note on Survival Analysis. 4 10 6

8. Explain the demographic transition. 4 10 6

9. What are the factors affecting fertility. 4 10 6

10. Write a note on prevention of environmental pollution. 4 10 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 : 3 hours
(180 Min)

Maximum : 100 marks

Answer ALL questions in the same order.

I. Elaborate on :

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

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

II. Write notes on :

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

[LC 0413]

APRIL 2013

Sub. Code: 3001

M.Sc (EPIDEMIOLOGY) DEGREE EXAMINATION

PART I

PAPER I – PRINCIPLES OF EPIDEMIOLOGY AND BIostatISTICS

Q.P. Code : 313001

Time : 3 hours

Maximum : 100 marks

I. Elaborate on:

(2x20=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 Randomized Controlled Study to measure the effectiveness of the vaccine.

II. Write notes on :

(10X6=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 : 3 hours

Maximum : 100 marks

Answer ALL questions

I. Elaborate on :

(2X20=40)

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

II. Write notes on :

(10X6=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.
