

MANIPAL UNIVERSITY
SECOND SEMESTER MASTER OF PUBLIC HEALTH DEGREE
EXAMINATION – JUNE 2015

SUBJECT: MPH – 602: INTERMEDIATE BIOSTATISTICS FOR PUBLIC HEALTH
(SPECIALIZATION: COMMON FOR EPIDEMIOLOGY, MCH AND EOH)

Monday, June 22, 2015

Time: 10:00 – 13:00 Hrs.

Maximum Marks: 70

1. Define the following:

- 1A. Alternate hypothesis
- 1B. Level of significance
- 1C. Type II error
- 1D. Power of test
- 1E. Point estimate

(1 mark × 5 = 5 marks)

- 2A. Describe the non-parametric test which is analogue to paired sample t test.
- 2B. The following are the intraocular pressure (mmHg) values recorded for a sample of 12 elderly subjects: 14.3 12.0 24.2 13.5 10.0 18.5 20.8 15.8 14.9 19.6 12.0 16.4
Do these data provide sufficient evidence at the .05 level of significance that population mean is not 14mmHg? [$t_{1-\alpha/2}(11) = 2.20$]

(5+7 = 12 marks)

- 3A. What is the purpose of sample size determination? How level of significance and power affects sample size estimation?

(2+3 = 5 marks)

- 3B. In a dental survey conducted by a dental health team, 500 adults were asked to give reason for their last visit to the dentist. Of the 220 who had less than high school education, 44 said they went for preventive reasons. Of the remaining 280, who had high school education or better, 168 stated that they went for preventive reasons. Construct 99 percent confidence interval for the difference between the two population proportions. [$Z_{1-\alpha/2} = 2.58$]

(4 marks)

- 4A. Stating the assumptions and the hypothesis explain the test procedure for Kruskal Wallis test and Mc Nemar test.

- 4B. Explain how you determine the minimum sample size for a study in which the main objective is to estimate population prevalence?

(10+5 = 15 marks)

- 5A. A study has been planned to compare mean body mass index between diabetes and non-diabetes subjects. A minimum difference of 4 kg/m² is considered as clinically significant. How many minimum number of subjects are required in each group at 5% level of significance and 80% power if the pooled standard deviation is found to be 8 kg/m²? ($Z_{\alpha} = 1.96, Z_{1-\beta} = 0.84$)

- 5B. Why don't we use multiple t-tests instead of one way ANOVA? Explain

(5+4 = 9 marks)

6. Write short notes on:

- 6A. Independent t-test
- 6B. Statistical Inference
- 6C. Correlation
- 6D. Sampling distribution of sample mean and sample proportion

(5 marks × 4 = 20 marks)



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MANIPAL UNIVERSITY

SECOND SEMESTER MASTER OF PUBLIC HEALTH DEGREE EXAMINATION – JUNE 2015

**SUBJECT: MPH – 604: HEALTH SERVICE ADMINISTRATION AND MANAGEMENT
(SPECIALIZATION: COMMON FOR EPIDEMIOLOGY, MCH, EOH)**

Tuesday, June 23, 2015

Time: 10:00 – 13:00 Hrs.

Maximum Marks: 70

✍ Write Long Essay on:

1. Discuss the function of Recruitment of Human resource manager. Explain three types of external recruitment with examples. (10 marks)
2. Describe role of Manager in relation to Henry Mitzberg. (10 marks)
3. Discuss the activities involved in planning a health care program. (10 marks)
4. What do you understand by business environment? Explain the factors of internal and external environment of business. (4+3+3 = 10 marks)

5. Write short notes on the following:

- 5A. Monitoring
- 5B. EOQ when demand and lead time is stable
- 5C. Risk assessment
- 5D. Types of Communication
- 5E. Lean technique
- 5F. Issues of health services management

(5 marks × 6 = 30 marks)



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MANIPAL UNIVERSITY
SECOND SEMESTER MASTER OF PUBLIC HEALTH DEGREE
EXAMINATION – JUNE 2015

SUBJECT: MCH – 606: SCOPE AND OBJECTIVES OF MATERNAL AND CHILD HEALTH
(SPECIALIZATION: MATERNAL AND CHILD HEALTH)

Wednesday, June 24, 2015

Time: 10:00 – 13:00 Hrs.

Maximum Marks: 70

☞ Long Essay:

- 1A. Define High risk pregnancy? Enumerate the risk factors of High risk pregnancy.
- 1B. What are the causes of Low birth weight? Discuss the strategies to reduce low birth weight.
- 1C. Enumerate Maternal and Child Health schemes in India with example.
- 1D. Discuss the Management of ARI according to IMNCI protocol.

(10 marks × 4 = 40 marks)

2. Write Short note on:

- 2A. Iodized salt
- 2B. Neonatal tetanus
- 2C. Antenatal screening
- 2D. Warning signs during postnatal period
- 2E. Adverse Effects Following Immunization (AEFI)
- 2F. Hepatitis B vaccine

(5 marks × 6 = 30 marks)



MANIPAL UNIVERSITY**SECOND SEMESTER MASTER OF PUBLIC HEALTH DEGREE
EXAMINATION – JUNE 2015****SUBJECT: ENH – 606: ENVIRONMENTAL AND OCCUPATIONAL TOXICOLOGY
(SPECIALIZATION: ENVIRONMENTAL AND OCCUPATIONAL HEALTH)**

Wednesday, June 24, 2015

Time: 10:00 – 13:00 Hrs.

Maximum Marks: 70

☞ Long Essays:

- 1A. Describe the health effects of chronic chromium toxicity. Explain in details the preventive methods.
- 1B. Describe the health effects of exposure to electro magnetic fields.
- 1C. Classify different occupational biological hazards? Describe any three bacterial hazards.
- 1D. Describe the study protocol of a developmental toxicology study.

(10 marks × 4 = 40 marks)

2 Short notes:

- 2A. Environmental carcinogens
- 2B. Hypothermia
- 2C. Insecticide Act
- 2D. Acclimatization
- 2E. Biomarker of exposure of organochlorine pesticides
- 2F. Dose response curve

(5 marks × 6 = 30 marks)



MANIPAL UNIVERSITY
SECOND SEMESTER MASTER OF PUBLIC HEALTH
DEGREE EXAMINATION – JUNE 2015
SUBJECT: MPH – 608: HEALTH ECONOMICS
(SPECIALIZATION: EPIDEMIOLOGY)

Wednesday, June 24, 2015

Time: 10:00 – 13:00 Hrs.

Maximum Marks: 70

✍ Write long essays on:

- 1A. What is the importance of government intervention in health care? Discuss its outcome or consequences.
- 1B. What is meant by market equilibrium? In the market for ice cream cone at the equilibrium price is \$2 per cone and equilibrium quantity is 7 cones. Explain along with diagrams the change in market equilibrium under the following conditions.
- i) Suppose the market price is above the equilibrium price. At price of \$2.50 per cone, the quantity of good supplied (10 cones) exceeds the quantity demanded (4 cones).
- ii) Suppose the market price is below the equilibrium price. In this case, the price is \$1.50 per cone and the quantity of good demanded exceeds the supply.
- 1C. Explain the concept of opportunity cost and its relevance to public health.
- 1D. Discuss the value of marginal product and the demand for labour. What causes the labour demand to shift?

(10 marks × 4 = 40 marks)

2. Write short notes on:

- 2A. Briefly describe the different entrepreneurial opportunities in health care.
- 2B. What are the features of medical insurance? Differentiate individual and group medical insurance.
- 2C. Explain the concept of wants and demand. What are the determinants of demand? Explain the slope of demand curve along with a diagram.
- 2D. What is a market? Explain with a suitable diagram the flow of money, resources and commodities in a market.
- 2E. What is monopoly? Give examples of government created monopoly.
- 2F. What are the different types of economic problems faced by the health sector?

(5 marks × 6 = 30 marks)



MANIPAL UNIVERSITY

SECOND SEMESTER MASTER OF PUBLIC HEALTH DEGREE EXAMINATION – JUNE 2015

**SUBJECT: MCH – 608: EPIDEMIOLOGY IN MATERNAL AND CHILD HEALTH
(SPECIALIZATION: MATERNAL AND CHILD HEALTH)**

Thursday, June 25, 2015

Time: 10:00 – 13:00 Hrs.

Maximum Marks: 70

✍ Write long essays on:

1. Discuss relative measures of effect in detail. (10 marks)

2. Elaborate on the various steps in conducting a prospective cohort study and the advantages and disadvantages of this study design. (10 marks)

3. This data reveals the association of exposure to alcohol during pregnancy to low birth weight infants. Exposure to alcohol exposure in this study was recorded at four levels. Is there evidence for dose-response relationship?

Exposure to alcohol (g/day)	Low Birth Weight	
	Cases	Controls
(0-49)	60	774
(50-89)	152	562
(90-129)	104	176
(130+)	92	46

(6+4 = 10 marks)

4. Discuss passive surveillance in detail with relevant examples. (10 marks)

5. Write short notes on:

- 5A. Meta-analysis
- 5B. Preventive trials with a relevant example
- 5C. Confounding
- 5D. Phases in testing of new drugs
- 5E. AFP surveillance system performance indicators
- 5F. Objectives and surveillance strategies in IDSP

(5 marks × 6 = 30 marks)



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MANIPAL UNIVERSITY

SECOND SEMESTER MASTER OF PUBLIC HEALTH DEGREE EXAMINATION – JUNE 2015

**SUBJECT: ENH – 608: ENVIRONMENTAL AND OCCUPATIONAL EPIDEMIOLOGY
(SPECIALIZATION: ENVIRONMENTAL AND OCCUPATIONAL HEALTH)**

Thursday, June 25, 2015

Time: 10:00 – 13:00 Hrs.

Maximum Marks: 70

✍ Long Essays:

1. Enumerate the sources of soil pollution. Discuss the way to prevent it.
2. Describe the health effects of chronic manganese toxicity. Explain in details the preventive methods.
3. Classify occupational injuries. Describe the occupational factors responsible for low back pain and the measures to control it.
4. Define epidemiology. Discuss about the hybrid study designs.

(10 marks × 4 = 40 marks)

5. Short notes:

- 5A. Minamata disease
- 5B. Bernardino Ramazzani
- 5C. Periodic Medical Examination
- 5D. Water borne bacterial diseases
- 5E. Greenhouse gases
- 5F. Heat stroke

(5 marks × 6 = 30 marks)



MANIPAL UNIVERSITY

SECOND SEMESTER MASTER OF PUBLIC HEALTH DEGREE
EXAMINATION – JUNE 2015SUBJECT: MPH – 606: ADVANCED EPIDEMIOLOGY AND SURVEILLANCE
(SPECIALIZATION: EPIDEMIOLOGY)

Thursday, June 25, 2015

Time: 10:00 – 13:00 Hrs.

Maximum Marks: 70

Write long essays on:

1. Elaborate on the steps in conducting case-control studies and discuss how measures of association are calculated for a matched case-control study.

(6+4 = 10 marks)

2. Enumerate and explain various types of bias that affect validity.

(10 marks)

3. This is data revealing the association of drinking soda to occurrence of colon cancer. In this analysis, soda consumption is recorded at four levels: Level 1: 0-39 ml/day, Level 2: 40-79 ml/day, Level 3: 80-119 ml/day, and Level 4: 120+ ml/day.

The total number of cases and controls for level 1 was 415, while cases included 29.

For level 2, cases were 75 and controls 280.

Level 3 had a total of 138 cases and controls with 87 controls.

Those in level 4 were a total of 67, while cases were 45.

- 3A. Calculate the dose-response relationship associated with each level of soda consumption taking the lowest level of the exposure as reference.

- 3B. Is there evidence of a dose-response relationship associated with each level of soda consumption. Interpret your findings.

(6+4 = 10 marks)

4. Discuss the need for disease surveillance. Describe control, elimination and eradication.

(10 marks)

Write short notes on:

- 5A. Accuracy
5B. Incidence rate and its importance
5C. AFP surveillance network
5D. Attributable risk and its relevance
5E. Objectives and surveillance strategies in IDSP
5F. Causal pie model

(5 marks × 6 = 30 marks)



MANIPAL UNIVERSITY**SECOND SEMESTER MASTER OF PUBLIC HEALTH DEGREE
EXAMINATION – JUNE 2015****SUBJECT: ENH – 610: INDUSTRIAL HYGIENE AND HEALTH
(SPECIALIZATION: ENVIRONMENTAL AND OCCUPATIONAL HEALTH)**

Friday, June 26, 2015

Time: 10:00 – 13:00 Hrs.

Maximum Marks: 70

✍ Answer all the questions:**✍ Long essays:**

1. Discuss about different type of workplace exposure and its measurement techniques.
2. Write about ADME in toxicokinetic process of chemicals in body with illustrations.
3. Explain the benefits and limitations of industrial hygiene monitoring.
4. Explain about heat stress and method of monitoring with Area Heat Stress monitor.

(10 marks × 4 = 40 marks)

5. Write short notes on the following:

- 5A. Biological exposure limits (BELs)
- 5B. TWA & STEL
- 5C. Exposure Criteria and limits
- 5D. Real Time monitoring Equipment
- 5E. Cyclones for dust collection
- 5F. Biological Hazards

(5 marks × 6 = 30 marks)



MANIPAL UNIVERSITY**SECOND SEMESTER MASTER OF PUBLIC HEALTH DEGREE
EXAMINATION – JUNE 2015****SUBJECT: MCH – 610: ISSUES IN MATERNAL AND CHILD HEALTH INCLUDING INFECTIOUS DISEASES
(SPECIALIZATION: MATERNAL AND CHILD HEALTH)**

Friday, June 26, 2015

Time: 10:00 – 13:00 Hrs.

Maximum Marks: 70

☞ Long Essay:

1. What is an epidemic? Discuss the steps followed in investigation of an epidemic.
2. What do you mean by reservoir of infection? Discuss the measures to control reservoir of infection.
3. Describe the epidemiology of Novel Influenza A H1N1 and discuss its preventive and control measures.
4. Describe the preventive and control measures for Malaria infection.

(10 marks × 4 = 40 marks)

5. Write Short notes on:

- 5A. Active immunity
- 5B. TB with HIV co-infection
- 5C. Epidemiological patterns of Polio
- 5D. Opportunistic infections with HIV
- 5E. STDs in India
- 5F. Hepatitis B immunoglobulin

(5 marks × 6 = 30 marks)

