Reg. No.										

MANIPAL UNIVERSITY

SECOND SEMESTER MASTER OF PUBLIC HEALTH DEGREE EXAMINATION – MAY/JUNE 2016

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

Monday, May 30, 2016

Time: 10:00 – 13:00 Hrs. Maximum Marks: 70

Answer ALL questions.

1A. Distinguish between the following:

i) Point estimation and interval estimation

ii) Null and alternate hypotheses

iii) Type I error and type II error

(2 marks × 3 = 6 marks)

1B. In a study conducted on 625 adults, their mean daily consumption of vitamin A was found to be 920 IU. The mean daily requirement of vitamin A has been documented as 930 IU with a standard deviation of 90 IU. Perform a suitable test of significance and comment whether the consumption and requirement differ significantly at 5% level of significance.

(4 marks)

2. A random sample of 54 individuals from a population contained 16 smokers.

2A. What is the standard error of proportion of smokers?

2B. Construct 99% confidence interval for the population prevalence.

2C. Determine the margin of error for the above estimate.

(2+4+2 = 8 marks)

3. In a study of diabetes, the following results were obtained from samples of males and females above 35 years of age.

	Number of participants	Number of diabetic cases
Males	100	46
Females	76	32

Can one conclude on the basis of this data that in the sampled populations there is a difference in proportions that are diabetic among males and females? (Let $\alpha = 0.05$)

(7 marks)

4. Stating the assumptions and hypothesis describe the non-parametric analogue tests of one way ANOVA and paired sample t test.

(10 marks)

5A. Explain how to determine the minimum sample size required for estimating the prevalence of a particular condition in a population?

5B. A study was planned to find whether there is any difference in the average RBC Cholinesterase values (measured in micro mol/min/ml) between alcoholic and nonalcoholic adult males. What should be the minimum sample size required in each group to detect a clinically significant difference of 2 micro mol/min/ml at 90% power and 5% level of significance? Assume the pooled standard deviation of RBC Cholinesterase values is 6 micro mol/min/ml. ($Z_{1-\alpha/2} = 1.96$, $Z_{1-\beta} = 1.28$)

(5+5 = 10 marks)

6A. In a sample of 60 men who have had myocardial infarction, the mean CPK (Creatine Phosphokinase) level is 285μ/l and the standard deviation is 16μ/l. Construct 95% confidence interval for mean.

6B. Define correlation and give two examples of each of positive and negative correlation.

(5+5 = 10 marks)

7. **Write short notes on:**

7A. Linear regression

7B. Sampling distribution

7C. Independent t test

(5 marks × 3 = 15 marks)

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SECOND SEMESTER MASTER OF PUBLIC HEALTH DEGREE EXAMINATION – MAY/JUNE 2016

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

Tuesday, May 31, 2016

Time: 10:00 – 13:00 Hrs. Maximum Marks: 70

✍ **Write Long Essay on:**

1. What is EOQ? What do you mean by demand and lead time is stable or unstable? Describe with the help of an example.

(2+5+3 = 10 marks)

2. What are the essential components of health information infrastructure? Explain in details.

(10 marks)

3. What is communication? What are the barriers in effective communications?

(2+8 = 10 marks)

4. Discuss on Manpower requirements in Indian healthcare delivery system?

(10 marks)

5. **Write short notes on the following:**

5A. Training techniques to improve efficiency
5B. Dependent variable effecting organizational behaviour
5C. E-communication
5D. Role of PERT in public health
5E. Principles of purchasing
5F. Program Evaluation

(5 marks × 6 = 30 marks)