MANIPAL ACADEMY OF HIGHER EDUCATION

SECOND SEMESTER MASTER OF PUBLIC HEALTH DEGREE EXAMINATION - NOV/DEC 2018
SUBJECT: APPLIED EPIDEMIOLOGY AND BIOSTATISTICS (MPH 618)
(EPIDEMIOLOGY)
(REPEATERS)
Saturday, December 01, 2018 (14.00 - 17.00)

Marks: 70 **Duration: 180 mins.**

SECTION - A (APPLIED EPIDEMIOLOGY)

Long answer questions:

1) Design a study to measure the association between Helmet use and traffic injuries. Explain the steps to conduct the study? What measures of association can be derived from this study? (10)
(3+5+2 = 10 marks)

2) Briefly discuss the Steps involved in conducting a cohort study? Between case-control and cohort studies which have more biases? Name 3 common biases and interventions to reduce the same? (10)
(5+1+4 = 10 marks)

3. **Short notes:**

3A) Bradford Hill's criteria for causation (5)

3B) Advantages and disadvantages of experimental studies (5)

3C) Barksonian Bias (5)

SECTION - B (STATISTICS)

4A) Give the sampling distribution of proportion for large n. For each of the following sampling situations indicate whether the sampling distribution of the sample proportion can be approximated by a normal distribution and explain why or why not. (4)
i) p = .10, n = 40
ii) p = .5, n = 20

4B) The weight of a certain population of young adult females is approximately normally distributed with a mean of 60 kg and a standard deviation of 5 kg. (6)
A random sample of size n=25 is taken from this population. What is the standard error of sample mean? What is the probability that the mean based on a random sample of size n=25 is:
i) Less than 59 kg
ii) between 58 and 61 kg

5A) **Define:** (2)
i) Level of Significance
ii) Power of the test

5B) Give the assumptions and situation for the use of Mann-Whitney U test. (4)

5C)	In a study of childhood abuse in psychiatric patients, researcher found 200 in a sample of 1000 patient reported histories of physical and/or sexual abuse. Construct a 95 percent confidence interval for the population proportion.	(4)

6. **Short Notes:**

6A)	Scatter Diagrams	(5)
6B)	One Way Anova	(5)
6C)	Non-parametric test	(5)

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