



**RAJARATA UNIVERSITY OF SRI LANKA**  
**FACULTY OF APPLIED SCIENCES**

**B.Sc. (General) Degree in Health Promotion**  
**Second Year - Semester I Examination –September/October 2019**

**HPT 2104 – INTRODUCTION TO EPIDEMIOLOGY**

**Time: One and a half (1 ½) hours**

**Answer ALL questions.**

1. a) The following table shows number of people with tuberculosis (TB) in two cities.

City	Population	Screened positive for TB (during January – March 2013)	Number of people suffering from TB by 15 <sup>th</sup> of August 2013
A	500,000	1160	5800
B	140,000	700	3500

- Calculate the incidence of TB for six months period in these two cities. **(20 marks)**
- Calculate the prevalence of TB for these two cities as of 15<sup>th</sup> August. **(20 marks)**
- A newspaper reported that the risk of TB is greater in the City A than B. Explain whether you agree with this decision or not. **(25 marks)**

- b) A cross-sectional survey in year 2003 identified 1000 hepatitis patients in a city with 2 million (2,000,000) population. The incidence of hepatitis in this population is 5 per 100,000 persons per year. Calculate the percentage of hepatitis cases newly diagnosed in 2003. **(35 marks)**

2. a) Explain why the randomized controlled trials considered as the gold standard of epidemiological study designs. **(25 marks)**
- b) Explain the purpose of double blinding I randomized controlled trials **(25 marks)**
- c) A group of researchers prospectively followed a group of 100 vegetarians and 200 non-vegetarians. After 30 years of follow-up, 8 of the vegetarians and 20 of the non-vegetarians developed heart disease. The 95% confidence interval on the relative risk of 0.8 ranges from 0.6 to 0.9.
- i. Outline this study design. **(10 marks)**
- ii. Interpret the results of this study. **(20 marks)**
- d) This is a part of a statement of an article: "1500 people with fever treated with our new medicine. Within three days, 95% were symptomless and this result was statistically significant. Therefore the new drug is effective in treating fever." Discuss whether the above statement is true. **(20 marks)**
3. In a case control study to examine the relationship between smoking and Parkinson's disease, 280 cases and 320 controls were selected. From the case group, 175 were smokers and there were 125 smokers in the control group.
- a) Explain in brief who selected as cases in this study. **(10 marks)**
- b) Draw a 2x2 table using above information. **(10 marks)**
- c) Calculate the odds ratio for Parkinson's disease for smokers and non-smokers. **(20 marks)**
- d) Discuss using examples the types of bias effect to case control studies. **(30 marks)**
- e) Compare the main differences between case control study and a cohort study. **(30 marks)**

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