



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

**B.Sc. (General) Degree in Health Promotion  
Second Year – Semester I Examination – Sep/Oct 2013**

**HPT 2104 - INTRODUCTION TO EPIDEMIOLOGY**

**Time: 1 ½ hours**

**Answer all three (03) questions**

**Illustrate your answers with labeled diagrams where appropriate.**

1. a. The following table shows total number of deaths and deaths due to Gastro Intestinal Track (GIT) problems, respiratory problems and hearts diseases in a population. Use the details in this table to answer questions given below.

Age group years	No. of people	Total deaths	Deaths – GIT problems	Deaths - Respiratory	Deaths – Heart diseases
00-09	2500	20	12	4	1
10-19	3000	35	10	5	0
20-29	2700	42	02	2	1
30-39	2500	20	0	1	2
40-49	2200	20	0	3	5
50-59	2700	35	0	7	10
60-69	3100	45	2	6	15
70-79	1900	90	10	20	40
80+++	1500	120	20	25	65

i. What is the ratio of deaths from GIT problems to heart diseases for the following?

1. Total population
2. 00-09 age group
3. 70-79 age group

ii. What proportion of total deaths in this community is due to respiratory diseases?

iii. What is the annual mortality rate in this population?

*(15 marks)*

b. Country A had a population (midyear) of 200,000,000 people (97,000,000 males and 103,000,000 females) in 2010. In this year there were 450,000 deaths in males and 390,000 in females. Out of the deaths in females 160,250 were due to respiratory diseases. Seven hundred and ten thousand (710,000) males and 490,000 females suffered respiratory diseases.

i. Calculate the incidence of deaths for men and women (separately) for country A in 2010.

ii. Calculate the incidence of respiratory diseases for men and women (separately) for country A in 2010.

iii. Explain why prevalence is important as a health indicator.

*(15 marks)*

2. A researcher studied 200 women who do regular exercises and 300 women who do not do regular exercises for 10 years and collected data about their health. After 10 years, 20 of the women in the exercise group and 30 women in the non-exercise group have been diagnosed with diabetes.

a) What is this study design?

b) List four advantages of using this study design.

- c) Draw a 2 x 2 (contingency) table to include above details.
- d) Calculate the Relative Risk of developing diabetes in these groups (show your work).
- e) Based on above calculation, what is your conclusion about the relationship between regular exercises and developing diabetes?

*(35 marks)*

3. Explain the following statement with details.

- a) It is not appropriate to calculate Relative Risk from Case Control Studies, Why?
- b) Disease X is incurable. It is also known that the incidence of Disease X has not changed during the past 10 years. However, researchers say that the prevalence of Disease X is higher today compared to the numbers of ten years ago. How can you explain this situation?
- c) A health promotion facilitator believes that a community group discussion on teenage pregnancies would encourage community members to take collective actions to reduce teenage pregnancies in the area. If you want to test this idea, what is the best study design? Give reasons for your answer.
- d) Respiratory problems are common among school teachers who have served more than 10 years. There are doubts that long term exposure to chalk dust might be the reason for this. If you wish to do a research to find an answer to this question, what is the most appropriate research design? Give reasons for your selection.

*(35 marks)*