高雄醫學大學 100 學年度研究所招生考試試卷　系所：公共衛生學系
科目：流行病學

1. Table 1 shows the numbers of cases of influenza in two towns in 2008 and 2010. Health programs for preventing influenza were introduced in both towns in 2009. Calculate the absolute and relative changes in each town. In which town is there stronger evidence that the program was effective in reducing the occurrence of influenza? (10%)

Table 1: Number of cases of influenza

	Town A	Town B
2008	500	5000
2010	200	4000

2. What measure of disease frequency (incidence rate, cumulative incidence, prevalence) is each of the following? (10%)
   (a). The percentage of freshman girls who become pregnant over the course of their high school years.
   (b). The percentage of senior boys who are fathers at the time of graduation.
   (c). The number of liveborn babies who die of sudden infant death syndrome during the first year of life per 100,000 baby-years of follow up.
   (d). The percentage of infants weighing less than 2500 grams at birth.
   (e). The lifetime risk of breast cancer.

3. State which observational study design is best (that is, most efficient and logical) in each of the following scenarios: (15%)
   (a). Identify the cause of a rare disease
   (b). Identifying the long-term effects of a rare exposure
   (c). Studying the health effects of an exposure for which information is difficult and expensive to obtain
   (d). Identifying the causes of a new disease about which little is known
   (e). Identifying the short-term health effects of a new exposure about which little is known.

4. Briefly define each of the following biases and state the different ways that each of the biases can be minimized: (15%)
   (a). Selection bias
   (b). Misclassification

5. Briefly describe an ecologic study and indicate its main limitation. (15%)

6. Please describe the main similarities and differences between each of the following: (15%)
   (a). Prevalence and incidence
   (b). Incidence rate and cumulative incidence
   (c). Fixed and dynamic population

7. Why are point prevalence rates useful in epidemiology? Please list possible factors which may lead to either an increase or decrease in the prevalence rate. (20%)