

※ 考生請注意：本試題不可使用計算機。 請於答案卷(卡)作答，於本試題紙上作答者，不予計分。

1. Please describe the following terms: (6 pt, each)
 - a). Attack rate
 - b). Odds
 - c). Incidence density
 - d). Specificity
 - e). Effect modification
2. Around the world, environmental particulate matters with aerodynamic diameter less than $2.5 \mu\text{m}$ ($\text{PM}_{2.5}$) are attracting more and more attention with respect to their potential impact on human health. Please devise a study to reveal the effects of $\text{PM}_{2.5}$ exposure on Taiwanese population. (25 pt)
3. What is the confounding variable? Please elaborate on how this variable may affect a study result. (15 pt)
4. Please identify the indications for the use of matching in case-control studies to investigate the exposure-outcome association. (15 pt)
5. Epidemiology is defined as the study of the occurrence of illness, and we often examine the fundamental measures, such as risk, incidence rate and prevalence. These fundamental measures can be used to obtain derivative measures that help in qualifying the causal relations between exposure and disease. What are those derivative measures of causal effects? (15 pt).