

※ 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) Density sampling
 - b) Standardized mortality ratio
 - c) Cumulative incidence
 - d) Positive predictive value
 - e) Birth cohort

2. Observation bias is relevant to the measurement of dependent variables in a study. What is the differential measurement error? How can it affect the study results? (15pt)

3. In population study, researchers strive to report a dose-response relationship between the exposure and outcome. What are the reasons for doing this? (20 pt)

4. What are the advantages in adopting a nested case-control study design in evaluating the association between a potential risk factor and targeted disease? (20 pt)

5. After establishing smoking as a major risk factor for lung cancer, the next question that excites the researchers or health professionals is “who is at greater risk of developing lung cancer after exposed to smoking”. Are researchers or health professionals searching for an effect modifier or a confounding variable in this scenario? Please give you explanation. (15 pt)