1. Suppose the true model to explain the dependent variable $Y$ is:

$$Y = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \beta_4 X_4 + \beta_5 Z + \beta_6 X_2 Z + \beta_7 X_3 Z + U$$

Where $X$s are different numeric variables (can take any value) while $Z$ is a qualitative variable representing two possible outcomes (0 and 1)

A. What is the contribution of each variable to the dependent variable? That is, what would happen to $Y$ as a result of one (small) unit change in each variable?

B. Suppose the model is misspecified as (i.e. the sixth term is omitted):

$$Y = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \beta_4 X_4 + \beta_5 Z + \beta_7 X_3 Z + U$$

What would be the consequence of such omission on each of the remaining coefficients? Be specific and address each coefficient separately.

2. Explain the following concept (They are explained in most method books, such as King et al. and Huck)

A. Unbiasedness

B. Consistency

C. Efficiency

Answer two of the following questions (3-5).

3. Indicate when it is appropriate to use interviewing, surveying and case studies as methods. Choose one and provide a detailed description of that method.

4. Fink (How to Manage, Analyze, and Interpret Survey Data, 2003, 2nd, p 44) provides a checklist for choosing different measures of central tendency.

A. Identify the measures of central tendency and explain advantages and disadvantages of each one.

B. Explain under what condition(s) each measure is used.

C. Describe the odds ratio and when it is used.

D. What is (are) the purpose(s) for using stratified sampling?

5. Explain the following, make sure to distinguish difference in quantitative and qualitative method as applicable:

A. How a hypothesis is set up

B. How a hypothesis is tested

C. Type I and type II errors