In answering these questions, refer to the Thigpen et al. article. As you would do on the real exam, make sure to read the questions carefully and make sure you answer all parts. Keep your answers short and to the point (though you need to do more than just name the relevant concept – you should also include an explanation that is applicable to the study to get full credit).

Keep in mind that this does not cover all of the material (e.g. errors of observation and non-observation, instrument design, descriptive stats, case studies, secondary data, observations, scales... to name a few) that you would want to know on the exam. This is just a quick example I put together.

1. What question does this study address?

2. Is this an exploratory or explanatory research question? Why?

3. What research design does it use?

4. What is the unit of analysis? What is the target population?

5. What type of sampling does this study use?

6. What is the sampling frame?

7. How might this study be affected by non-response bias?

8. Though California’s characteristics aren’t noted, do you think it is reasonable to generalize from this sample to other adults in CA? Why or why not?
9. How well does the dependent variable capture the construct of bicyclist comfort? Why or why not? What type of measurement/construct validity does this refer to? How could you put together a scale to better capture the full meaning of the bicyclist comfort construct?

10. One of the survey questions asked about how much the participants had ridden their bicycle in the past month. What biases might affect the validity of their answers? Why?

11. What variable level (we’ve also used the term “scale” or “type”) is are the following question on?
   a. Household Income
   b. Age
   c. Bicycle type
   d. Frame Type

12. Why did the authors choose to use a binominal logistic regression to analyze their data?

13. How would you interpret the coefficient for the influence of the “MPD mean” variable (a ratio variable) on a respondent’s rating of whether a given segment was acceptable in the second model (see Figure 3, the second column entitled “Macrotecture and Roughness”)? How certain is the estimated coefficient? Explain how you know.
14. What element(s) of this study fall in line with methods typically used in deductive research and what element(s) of this study fall in line with inductive research methods?

15. How would you adopt a qualitative method to eliciting responses about the influence of pavement characteristics on bicyclists’ comfort?

   a. What causal criteria would this approach help to address that the quantitative approach taken in this study does not address well?

   b. How would you analyze the data from this qualitative approach?