

**SHORT ANSWER: Write brief descriptions for each of the following questions in the space provided. Point values are given next to each question.**

1. Suppose a hospital surveys its recently discharged surgery patients regarding their satisfaction of the care they received. After being discharged, patients need to continue visiting their doctors to treat their conditions and monitor their recovery.
  - (a) (5 points) State two (2) possible specific and measurable *research* questions that this study could investigate.
  
  
  
  
  
  
  
  
  
  
  - (b) (3 points) Describe the *audience* for this research project.
  
  
  
  
  
  
  
  
  
  
  - (c) (3 points) Describe the *population* for this research project.
  
  
  
  
  
  
  
  
  
  
  - (d) (5 points) Describe two (2) ethical considerations that you should make before collecting your sample and beginning your study.
  
  
  
  
  
  
  
  
  
  
  - (e) (5 points) Describe two (2) potential sources of bias.

2. Suppose the hospital survey in the previous question ends with the following three questions:
- How would you rate the level of attention given to you by the nursing staff on a scale of 1-10? 1=Poor, 10=Excellent.
  - How would you rate the quality of communication between you and your physician on a scale of 1-10? 1=Poor, 10=Excellent.
  - How would you rate the overall quality of the care you received on a scale of 1-10? 1=Poor, 10=Excellent.

(8 points) Describe two (2) potential sources of bias evident in these questions. Describe how they can be fixed.

3. The National Rifle Association (NRA) 2009 National Gun Owners Action Survey is administered when people sign up for membership with the National Rifle Association. The survey includes this question:

- Do you agree with anti-gun extremists who claim that gun registration, gun-owner licensing, closing of gun shows and outright gun bans would help prevent future terrorist attacks on our nation?
- Yes / No / No opinion

(a) (3 points) Explain one potential source of bias regarding the wording of this question. What words in the question contribute to this bias?

(b) (3 points) Rewrite the question such that it is less likely to have the bias you described in question (a).

(c) (5 points) The NRA indicates that it uses the results from this survey in communication with Congress, Administration officials, and State Legislatures. Suppose it presumes the results of this survey represent the concerns and views of "American gun owners." Describe a source of sampling-frame bias. What could be changed to reduce or eliminate this bias?

4. Suppose an advocacy group for liberal causes posts a survey on their Facebook page. The Facebook post encourages people that “like” their page to take the survey, and re-post it to their profile so that their friends may take the survey. Suppose the survey includes the following question:

- Do you agree that minimum wage should be high enough to allow hard working Americans with full-time jobs to earn enough income to keep their families out of poverty? **Yes/No**

Answer the following questions regarding the sampling technique:

(a) (3 points) What type of sampling method is this?

(b) (3 points) Describe / define this type of sampling method.

(c) (3 points) Is this a Probability or Non-probability sampling method?

(d) (8 points) Describe two (2) potential sources of bias considering the *sample design*? For each, do you think the bias lead to a sample that has a larger proportion agreeing than the population, or a smaller proportion agreeing with the statement? Explain.

(e) (4 points) Describe one (1) potential source of bias considering the *wording* of the question. Describe how the choice of words lead to that bias.

