

Answer each question in a brief essay (~ 1 paragraph each). Edit to be as complete and concise as possible, in the fewest words possible (the standard scientific writing style is dense!). Bullet lists, etc. are welcome.

1. What is the advantage of a factorial experiment compared to running two experiments – one for each of two factors? Make up an example to illustrate and explain how that example illustrates the point.
2. Of the following, which is most important for an experiment, and why?
  - (a) experimental controls (e.g., negative, positive, placebos)
  - (b) replicates
  - (c) multiple levels of treatments
3. If one wished to conduct an experiment but had no foreknowledge of the experimental system, what could be done to ensure a successful experiment? Be specific and illustrate with an example.
4. What is pseudoreplication? Select five recent journal articles in your own specialty and evaluate them for pseudoreplication, and summarize what you find.
5. What is meant by "experimental elegance"? Find an example in the literature and explain why it demonstrates elegance.