

Name: _____

Dr. Reichler's Bio 325-uex Fall 2008 Quiz 9/11

- 1) Why is positive proof often misleading?
- 2) How would not following rule three of Strong Inference affect the outcome of your research?
- 3) Using rules one and two of Strong Inference answer the following question: What is the quickest way to get from Riverside to class?
- 4) In what part of a journal article would you expect to find the most citations?
- 5) What would be different between a results section and the discussion of a journal article?
- 6) You find an older article on a topic that interests you. How could you use information from the article to find if there were more recent publications regarding this topic?
- 7) Would double-stranded RNA be as stable as double-stranded DNA?
- 8) How is the perception that genes code for proteins related to two other gene perceptions?
- 9) How could you stop a transposon from moving?
- 10) If a muscle cell is responding to epinephrine (a hormone involved in the fight or flight response), and the response will involve a change in gene expression, where will the three steps in signal transduction occur?
- 11) What are two reasons for the seemingly complex nature of signal transduction?
- 12) What is role of calcium in the two reasons that you gave in #11?

Answers:

1) Why is positive proof often misleading?

It leads us to ignore data that would disprove our hypothesis.

2) How would not following rule three of Strong Inference affect the outcome of your research?

Getting unreliable data would cause the elimination of the wrong hypotheses.

3) Using rules one and two of Strong Inference answer the following question: What is the quickest way to get from Riverside to class?

Many answers: Make at least two hypotheses- Take the bus. Driving in a car. Going by horse. Etc.

Devise at least one experiment to eliminate hypotheses- Go to campus using the different methods and time each one.

4) In what part of a journal article would you expect to find the most citations?

Either the introduction or discussion.

5) What would be different between a results section and the discussion of a journal article?

Results simply list the findings. Discussion connects these findings to other research and interprets the data.

6) You find an older article on a topic that interests you. How could you use information from the article to find if there were more recent publications regarding this topic?

Several possibilities: Look for newer publications by these authors. Look for articles by cited authors. Some search engines will show you the articles that have cited that paper.

7) Would double-stranded RNA be as stable as double-stranded DNA?

No, the OH on the #2 carbon makes RNA more likely to be broken down by chemical reactions.

8) How is the definition that genes code for proteins related to two other gene definitions?

Many answers: Malfunctioning proteins are the cause of many genetic diseases. The traits we inherit are primarily based on the proteins we produce. The switches controlling development are often proteins.

9) How could you stop a transposon from moving?

By either changing the inverted repeats or eliminating the function of transposase.

10) If a muscle cell is responding to epinephrine (a hormone involved in the fight or flight response), and the response will involve a change in gene expression, where will the three steps in signal transduction occur?

Perception on the plasma membrane, Transduction in the cytoplasm to the Nucleus where the response will occur.

11) What are two reasons for the seemingly complex nature of signal transduction?

Amplification of the signal and signal specificity.

12) What is role of calcium in the two reasons that you gave in #11?

Calcium is an easy way to amplify a signal and different spatial or temporal distributions of calcium can give specific responses.