

Geog 500 Geoscience Research Methods Midterm Fall 2006
Submit electronically (david.keeling@wku.edu) or in hard copy no later than October 11.

Student _____

Short Answers (there are 6 questions, each worth 15 pts) – Be brief yet comprehensive:

1. What is “critical thinking” and why is it a central element in geoscience?

2. What is “science” and why is “shared reality” a key element in the scientific method?

3. Why is the pyramid approach to research a useful heuristic device in setting out the structure of a research project?

4. Read the passage below and discuss the logic and context of the passage.

As we move into the 21st century, it is increasingly evident that economic and environmental changes are occurring on a global scale. The effects of these changes are distributed unequally both within and across national boundaries. Greater inequality in the distribution of the costs and benefits of global change implies that, while some sectors are integrating smoothly into the global economic system and are capable of adapting to environmental change, others are becoming marginalized and vulnerable to environmental change. The idea that global change produces winner and losers has become more or less accepted in the common discourse. However, there have been few systematic discussions of what is meant by “winner” or “loser,” and little attention has been given to the theoretical underpinnings behind identification of winners and losers. This is particularly true within the literature on global change, where the phrase “winners and losers” is widely used despite little or no discussion of what is meant by a “win” or a “loss.” In fact, mention of the winners and losers in global change has become so widespread in books, journal articles, and the media over the past several years that a systematic examination of the concept seems overdue (O’Brien and Leichenko 2003:89).

5. Discuss the differences between qualitative and quantitative approaches to research, and explain the pros and cons for each approach using the three characteristics presented in class.

6. Discuss either the Algeo in-class presentation or the Goodrich in-class presentation – what were the elements of geoscience research, how was the issue of qualitative vs quantitative analysis addressed, and what did you think of the research approach?

Theory and Paradigm Question (10 points):

(1) Explain Structuration Theory and the Mass-Extinction Theory, who are the major researchers, and how might these theories be applied by researchers today?