
FIRST TEST – STUDY SHEET

THE FIRST TEST

Part 1 – multiple choice (40%)

Part 2 – short answer (30%)

Part 3 – long answer (30%)

Below is a review of the lecture material covered so far. This review consists of a series of questions regarding the lecture material. Most of these questions can be answered in a couple of words or phrases, but for the purpose of studying, it would be helpful if you try to answer them in as much detail as possible. You might try to answer the questions, first, without looking at any notes, then move to your textbook and notes to help you answer them in more detail. Remember, you are not required to turn in any answers for these – this is for your own benefit in studying.

SECTION 0 – COURSE INTRODUCTION (REVIEW CHAPTER 1)

- What is the Principle of Uniformitarianism?
- Why does uniformity of process not always result in uniformity of product?

SECTION 1 – LIFE AND ENVIRONMENTS ON EARTH (REVIEW CHAPTERS 3 AND 4)

- How is an ecosystem defined?
- What are the essential/nonessential parts of an ecosystem?
- What is primary productivity? What is the most common mechanism of primary productivity?
- What are the differences between autotrophs/heterotrophs? Prokaryotes/eukaryotes?
- How does taxonomic classification differ from phylogenetic classification?
- How does the classification of fungus show the subjective nature of taxonomic classification?
- What is the importance of homologous traits in determining relationships among organisms?
- Why is habitat choice (benthic, planktic, epifaunal, infaunal) useful in describing ecosystems?
- What are three of the limiting factors of life on Earth (explain how they are limiting)?
- What affects the distribution of heat received by the Earth's surface? How?
- Which has a greater albedo – snow or forest? Why?
- What is the source of the Coriolis effect? How does it affect atmospheric circulation?
- What are the main climatic belts on Earth? How are these controlled by atmospheric circulation?
- How does latitude, distance from ocean source, and the rainshadow effect control desert location?

SECTION 2 – MARINE BIOGEOCHEMICAL CYCLES (REVIEW CHAPTER 10)

- Why are oceans vital to Earth ecosystems (describe three reasons)?
- What is the driving force behind ocean circulation? How does it work?
- Why do ocean currents travel westward near the equator and eastward in mid-latitudes (35-50°)?
- What are two different mechanisms that cause vertical circulation of marine waters?
- What causes upwelling to occur?
- How do these different mechanisms change environmental conditions on the ocean floor?
- How do environments (and their variability) differ between intertidal regions and the deep ocean?
- Where in the oceans does the most/least biological productivity occur? Why?
- What are the primary reservoirs/pathways for carbon in the Earth system?
- What are the primary chemical reservoirs on Earth?
- Can you describe pathways of nutrient travel from different Earth reservoirs?
- How is nutrient cycling reflected in the food web?
- Why do physical and biological processes preferentially utilize lighter isotopes?
- How can regions of upwelling be distinguished by C isotopes?
- How might changes in biological productivity be recorded in the geologic record?