Midterm 2 Study Guide

This study guide is not necessarily completely exhaustive, however if you have sufficient knowledge of the topics here you should do quite well on the exam. Therefore, it is recommended you go through this study guide in its entirety. All topics listed here are covered within the scope of the text and/or lecture.

-Cyanobacteria are important because they are involved in what process?
-What is the “compensation depth”?
-What is a “trophic level”? What is a “food chain” and what is a “food web” and how are they different?
-What is the basic definition of an ecosystem?
-What happens when a SCUBA diver ascends too rapidly? What is this condition called?
-What property of seawater allows many marine organisms to NOT require a rigid skeleton for survival?
-What is the primary factor controlling where organisms live in the ocean, and why?
-In what environments do pelagic, neritic, and benthic organism live?
-Where do the largest tides occur?
-What is an “amphidromic” point?
-In what countries are tides used to generate electrical power?
-What is the length of a “lunar day”, or “tidal day”?
-What are “spring” and “neap” tides? When do they occur?
-What is the “tidal range”? What is the “daily inequality”?
-What type of tides do we experience here in San Diego?
-What is “significant height” and how is it defined?
-How are wind, wind duration, and fetch important in creating wind waves?
-What is a “rip current”?
-How do beach profiles change seasonally?
-What is “wave refraction” and what causes it?
-What are rogue waves?
-What forces cause ocean-surface waves?
-What is an Ekman spiral?
-What are Langmuir cells and where do they occur?
-Examples of eastern boundary currents in both the Atlantic and Pacific.
-What is “upwelling” and on what side of an ocean basin is it most conspicuous?
-Examples of western boundary currents in both the Atlantic and Pacific.
-What is a zone of “convergence”? Would you expect objects floating on the surface to accumulate in this zone or disperse from this zone?
-What is a gyre?
-What are “continental climates” and “maritime climates”? Which has characteristically large temperature ranges and why?
-What is an ice berg? How does it form?
-Light reflection from calm and rough sea surfaces. Which is more reflective?
-What are Milankovitch cycles?
-What is an El Nino event? What are the main signs of an El Nino event? About how often do
What is “slack water”? When does it occur?
Is the great global conveyor belt of the world’s oceans important to northern Europe’s climate? If so, how?
How do El Nino disrupt biological processes in the ocean? What effect have they had on Peruvian fisheries?
What is an El Nino event? What are the main signs of an El Nino event? About how often do they occur?
What happens to salinity, both of seawater and of sea ice, when sea ice forms?
What is the pycnocline? How is it defined?
Overall trend of heat transfer on Earth. From equator to poles? Or, from poles to equator?
Where do bottom waters form?
What tracers are used to track movements of deep-water?
How are these terms defined: wave height? wavelength? wave period? frequency? wave speed?
Do tsunamis behave like shallow-water waves? If so, why?
Does the Moon or the Sun have a greater effect on tides, and why?
What are the differences between “diurnal tides”, “semidiurnal tides”, and “mixed tides”?
What is the difference between the “photic” and “aphotic” zone?
During what season do phytoplankton blooms typically occur?
What is “dispersion”?
What is this process called by which bacteria living at hydrothermal vents get energy to make new organic matter?
What is a storm surge?
What is “primary production”? What organisms perform most of it in marine ecosystems?