ES106 Quiz 1 Study Guide FOCUS ON YELLOW KEY WORDS

BRING A SCANTRON, PENCILS, PENS, AND CALCULATOR TO THE EXAM!

RECOMMENDED STUDY TECHNIQUES

1) Follow the "How to Study Physical Science" guide available on the web site.
2) use the concepts below as a guide to help you focus on your notes
3) memorize terms and concepts (make flash cards, rewrite definitions 100 times, etc.)
4) go back over the labs and make sure you can do the tricks / skills
5) review some of the important figures in your lab manual and text
6) review your homework questions and answer sheets
7) study until you're sick of it, then study some more until you pass out
8) change your socks and drink plenty of water
9) clean your room....

Key Words

Introduction
Earth System Science
astronomy
geology
oceanography
meteorology
oceanography
environmental spheres
lithosphere
inner core
outer core
mantle
crust
atmosphere
hydrosphere
biosphere
Earth visualization
rotation
revolution
exponential notation
scientific notation
metric system
metric unit conversion
energy
heat
matter
temperature
degree F
degree C
degree K
solid
liquid
gas
evaporation
freezing
condensation
sublimation
heat gain
heat loss
convection
conduction
radiation
heat flow
second law of thermodynamics
three driving mechanisms
    gravity
    geothermal heat
    solar energy

Basic Science Review
hypothesis
theory
hypothesis testing
observation
experiment
law
matter
elements
compounds
atoms
molecules
nucleus
protons
neutrons
electrons
atomic no.
atomic mass
atomic charge
atomic charge balance
isotope
speed
velocity
V=d/t
weight
F=mg
force
potential energy
kinetic energy
thermal energy
conservation of energy
energy transformation
heat flow
heat absorption
heat emitters

Intro to Hydrosphere (from video exercises)
water
water vapor
atmospheric moisture
oceans
surface water
ground water
ice
global ice
hydrologic cycle
heat capacity

surface tension
dipolar water molecule
capillarity
evaporation
advection
convection
ocean evaporation
land evaporation
biosphere
transpiration
evapotranspiration
runoff
infiltration
vegetative interception
ice sheets
oceans
springs
soil moisture
atmospheric moisture
fresh water storage

Chemical Bonds / Chem of Water
atoms
isotopes
oxygen isotopes
carbon isotopes
ion
cation
anion
complex ion
dissolved ions in water
molecules
compounds
mixtures
atomic forces
bonding forces
octet rule
stable-8 configuration
valence shell
electron shells
lewis dot model
atomic no.
atomic mass
no. protons
no. neutrons
no. electrons
ionic bonding
metallic bonding
covalent bonding
dot-model reactions
aqueous solutions
solute
solvent
saline solution

Heat Energy(from lecture and lab)
phase changes
states of matter
solid
liquid
gas
plasma
molecular kinetic energy
heat energy
internal vibrational energy
floaters
sinker
gravity-driven density contrast
temperature
degree C
degree F
degree K
absolute zero
heat flow
high temp to low temp
second law of thermodynamics
heat - volume expansion
cooling-volume contraction
volume-density relationships
heat loss
heat gain
heat transfer
conduction
convection
radiation
heat absorber
heat reflector
insulator
convection cells
evaporation
condensation
melting
freezing
sublimation
calorie
latent heat of melting
latent heat of vaporization

Key Concepts and Problem Solving Skills

Can you convert from English to metric system units?
Can you do unit algebra?
Do you know the difference between mass, volume, length, time, velocity, density?
Can you re-arrange an equation to solve for the unknown variable?
Can you explain all of the processes involved with the phase change of water from solid to liquid to gas?
Can you sketch the water molecule and explain the chemical bonding involved?
Can you read the periodic chart and determine the basic characteristics of atoms of elements?
Can you determine whether an element forms a cation or anion? and what the charge is? and why?
Do you understand the concept of valence electrons and how they control atomic bonding?
Do you know the types of heat transfer mechanisms?
Can you list 4 or 5 unique properties of water?

Do you know everything else that we talked about, but I've forgot to mention here?