GS104 Quiz 1 Study Guide - Fall 2000

RECOMMENDED STUDY TECHNIQUES

1) review 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

Key Words

Introduction

Earth System Science
system
astronomy
geology
meteorology
oceanography
geosphere
atmosphere
hydrosphere
biosphere
inner core
outer core
mantle
crust
oceanic crust
continental crust
asthenosphere
nitrogen-oxygen-carbon dioxide
photosynthesis
earth rotational axis
scientific method
observation
hypothesis
hypoth. testing
model
theory
law
mass
matter
energy
kinetic energy
potential energy
thermal energy
mechanical energy
law of energy conservation
system
model
solar system
earth system
boundary conditions
open system
closed system
isolated system
energy and mass flux
energy-mass cycles
positive feedback
negative feedback
examples of feedback
global warming
greenhouse effect
energy cycle
solar energy
photosynthesis
hydrogen fusion
ROYGBIV
infrared radiation
ultraviolet radiation
geothermal energy
examples of geothermal
albedo
energy absorption / reflection
heat transfer
convection
conduction
radiation
hydrologic cycle
evaporation
condensation
groundwater
surface water
oceans
glaciers
Earth Controls:
- solar energy
- geothermal energy
- gravity

age of earth
4.6 b.y.
big bang
rock record
fossils
uniformitarianism
catastrophism
relative dating
absolute dating

Math Review

scientific notation
metric system
English system
unit algebra
unit conversions
length
time
mass
volume
density
velocity

Basic Science Review

hypothesis
fact
law
theory

model
observational data
experimental data
hypothesis testing / validation
matter
elements
compounds
atom
nucleus
proton
neutron
electron
time
distance
velocity
force
weight vs. mass
friction
heat energy
Newton's law of gravitational attraction
phases of matter
    solid
    liquid
    gas
heat flow
pressure differential

infrared
radio
wavelength
frequency
amplitude
speed of light
visible light
light year
heliocentric
geocentric
gravity

Universe / Solar System

Earth system
    rotational period
    rotational direction
    orbital period
    lunar cycle
    lunar system
lunar cycle
    full moon
    new moon
    lunar orbital direction
planets: m,v,e,m,j,s,u,n,p
"sun" / star
planet vs. moon
star vs. planet
EM Spectrum
gamma ray
x ray
uv radiation
ROYGBIV

Key Concepts

Can you identify examples of open, isolated, closed systems?
Can you identify examples of positive and negative feedback?
Can you sketch the key components of the hydrologic cycle?
What do you know about the energy cycle?
Can you sketch the interior of the Earth?
Can you complete basic unit calculations from English to Metric and vice versa?
Can you calculate density?
How about Newton's law of gravitational attraction?
If given conversion factors, can you work a unit conversion problem?
What is the scientific method? Can you list the elements of the process?
Which direction does heat flow and why?
What is the difference between a star and planet? A planet and moon? A galaxy and solar system?
Explain why we look back in time when we look into space?
How do we analyze stars and formulate hypotheses such as the big bang?
Can you draw and label a diagram of the lunar cycle
Can you draw and label a diagram of the seasonal climate cycles of the Earth? Why do we have seasons?
Why is gravity important with respect to celestial mechanics?