

## **Earth Science Lecture - Review for Test 1**

### **The Hydrologic Cycle**

Terms: Hydrologic Cycle, hydrology, reservoirs, fluxes, infiltration, runoff, evaporation, precipitation, groundwater, oceans, glaciers, surface water, atmospheric water

Key Topics:

What are the reservoirs and the fluxes in the Hydrologic Cycle?

Know the specific fluxes that transfer water around the Hydrologic Cycle?

Describe the size of the fluxes associated with the Hydrologic Cycle in South Texas?

### **Rivers and Streams**

Terms: stream source, stream mouth, tributaries, channel, banks, lowland streams, mountain streams, load, bed load, suspended load, dissolved load, downcutting, sidecutting, cut bank, meander, floodplain, oxbow lake, discharge, lag time, levee, ions, cations, anions, drainage basin, drainage divide, capacity, competence, back swamp, oxbow lake, stage

Key Topics:

What is a drainage basin?

What is discharge (runoff)? What units are used to define this flux?

How can stream stage vary with discharge during normal and flood events?

What are the different controls on the discharge within a drainage basin?

The obvious and not so obvious ones.

What conditions increase (or decrease) lag time during flooding?

What are the different types of stream load and know specifically the types of material present in each type of load.

How does downcutting alter the shape of a river valley?

How does sidecutting alter the shape of a river valley?

What are the features associated with: a mountain stream? (Lab 3; Figure 7)

What are the features associated with: a lowland stream ? Lab 3; Figure 9)

What is a delta. Why can you call this feature the ultimate outlet or month?

### **Groundwater**

Terms: water table, perched water table, spring, zone of aeration, zone of saturation, permeability, porosity, artesian well, aquifer, aquitard, confined aquifer, unconfined aquifer, recharge area, karst, caves, sinkholes, sinkhole lakes, non-point source, point source, plume, land subsidence, salt water intrusion, recharge area

Key Topics:

What is the difference between porosity and permeability?

What is the relationship between the water table and the different groundwater zones?

What is the difference between an aquifer and aquitard?

Be able to describe the three different types of aquifers.

What is a resource and what type of resource is groundwater

What are the problems associated with overuse or 'mining' groundwater?

In what type of aquifer does an artesian well form?  
How do you make a cave?  
How does a karst landscape form? What are some karst features?  
Compare how aquifer contamination differs between gasoline and solvents

### **Deserts and Dry Climates**

Terms: desert, subtropical desert, rain shadow desert (also called mid-latitude desert), steppe, sand dunes, deflation, desert pavement, ventifacts, alluvial fans, playa lakes, bajada, blowouts, slip face, cross beds, inselberg, low latitudes, mid-latitudes, high latitudes, Basin and Range

Key Topics:

What is the importance of latitude in terms of climate across the world?  
Be able to describe the difference between low and high pressure?  
What is the precise definition of a desert? Of a steppe?  
Where are deserts (what latitudes) formed and what are the 3 types of deserts?  
How does wind affect: silt and clay particles; sand particles; gravels?  
How does wind shape the land (topography) in a dry/desert environment ?  
How does water shape the land in a dry/desert environment ?  
How does sand move across a sand dune ?  
Know how the landscape in the Basin and Range changes over millions of years ?  
Know the features present in the early and late stages of development of the Basin and Range

### **Shoreline Environment**

Terms: crest, trough, wavelength, wave base, wave break, surf, wave refraction, headland, bay, longshore currents, beach, spit, baymouth bar, barrier island, sea stack, tides, high tide, low tide, spring tide, neap tide, lunar phases

Key Topics:

Know the basic terminology associated with waves  
What is the difference between a wave of oscillation and translation  
What is the difference between longshore current and beach drift? How can you tell the direction of movement of longshore currents  
Know the different features present on passive shorelines; both natural and human made  
Know the processes of how wave refraction shapes active shoreline  
Know the different features present on active shorelines  
Know what causes daily tides  
Know what causes monthly tides and how to recognize when they will occur