GEO 101 – Final Exam Study Guide (Not a cumulative study guide)

1. What are the major features of the ocean floor?
    a. Continental Shelf
        i. Continental crust under water
    b. Continental Slope
        i. Slope between continental crust & oceanic crust
    c. Abyssal plain
        i. Ocean floor
    d. Seamounts
        i. Submerged volcanoes
    e. Canyons
        i. Rivers → cuts down into continental shelf
        ii. Turbidity currents → create graded beds, carry sediment to abyssal plains
2. What are the types and underlying causes of ocean currents?
    a. Surface currents
        i. Driven by wind/Coriolis effect
    b. Deep currents
        i. Downwelling
        ii. Upwelling – deep water being forced upwards
    c. Cause by:
        i. Coriolis effect
        ii. Density
            1. Temperature
            2. Salinity
3. How does the moon create the tides?
    a. Because of moons gravitational pull
4. Know the different types of waves and wave actions that we covered.
    a. Different Types:
        i. Open Ocean waves – energy moves forwards, water stays put
            1. Counter clockwise olliptical motion
            2. Bobbing up and down
        ii. Translational wave – friction between wave and ocean floor
    b. Wave Actions:
        i. Wave Refraction – waves more or less hit parallel to the shore. Affects way sediment moves and erosion.
        ii. Longshore current – path of sand particles. Creates zig zag and pulls you down the shore.
5. What are the different kinds of coastlines and why do they form where they do?
    a. Beach
    b. Barrier Island
    c. Tidal Flat
    d. Rocky Coast
    e. Coastal Wetlands
    f. Coral Reef
    g. Estuaries

    h. Fjords
    i. What determines type of coast?
        i. Tectonic setting
        ii. Climate
        iii. Sea Level
        iv. Sediment supply
6. What do humans do to try and stabilize the coastline?
    a. Groins – barriers built to keep sand from eroding
    b. Jetty – protect harbor entrances
    c. Breakwater – decrease wave energy
    d. Beach nourishment – bring in new sand
7. What are the characteristics of a good aquifer?
    a. High Porosity and permeability
8. How does groundwater move, and how is that movement affected by different sediments and rocks?
    a. Gravity under water table: From high elevation to low elevation
    b. Pressure above water table
9. How do humans access groundwater?
    a. Wells
    b. Springs
    c. Hot Springs
10. What are the components of a geyser?
    a. Water supply
    b. Heat supply
    c. Plumbing system
11. How can groundwater resources be depleted?
    a. Lowering the water table
    b. Saline intrusion
    c. Reversing flow
    d. Land subsidence
12. What factors influence groundwater quality?
    a. 'Soft water': salt
    b. 'Hard water': calcium, magnesium
    c. Hydrogen sulfide
    d. Iron rich
13. What geologic features are created by groundwater?
    a. Caves
14. What are the five types of deserts and why do they form where they do?
    a. Subtropical
        i. Global air circulation. Takes up all the moisture and takes it away
    b. Rain Shadow
        i. Air picks up moisture. Rising air cools and rain clouds form. Air comes down other side of mountain with dry air (rain shadow). One side of mountain wet and the other dry.
    c. Coastal
        i. Works opposite of rain shadow. Cool dry air, air absorbs moisture = desert

    d. Continental Interior
        i. Far from ocean. Air moisture used over continent. Water squeezed out of air.
    e. Polar
        i. Global air circulation. Cold air is dry (cannot hold moisture)
15. What are the main causes of desert weathering?
    a. Physical weathering
    b. Chemical weathering
16. How is sediment transported and deposited in the desert?
    a. Transported:
        i. Water (flash floods)
        ii. Wind
    b. Deposited:
        i. Alluvial Fan: abrupt change in velocity. Stream dumps coarse sediment.
        ii. Talus Apron: pile of debris around base of mountain. Gravity.
        iii. Salt Lake: no outlet. Water collects and evaporates. Salt concentrates
        iv. Playa: dry lakebed. Salt accumulates.
        v. Dunes: wind moves sand and carries small grains away.
17. What kinds of geological formations are common in the desert?
    a. Desert pavement
    b. Dunes
    c. Mesa
    d. Butte
    e. Chimney
18. How is desertification caused?
    a. Changing non-deserts into deserts
    b. Causes:
        i. Deforestation
        ii. Overgrazing
        iii. Agriculture
        iv. Water mismanagement
        v. Drought
19. How do glaciers form, and what are they composed of?
    a. Formation:
        i. Large amount of snow
        ii. Most does not melt
        iii. Gentle slope
        iv. Stratified
        v. Compact over time
    b. Composed of: Ice
20. What are the types of glaciers?
    a. Mountain
    b. Continental
    c. Temperate
    d. Polar
21. What controls the movement of glaciers?