

Physical Geology Lecture - Review for Test 2 (March 8th - Thursday)

Igneous Rocks

terms - magma, lava, mineralogy, ferromagnesian silicate, nonferromagnesian silicate, texture, Bowen's Reaction Series, phaneritic texture, plutonic igneous rock, volcanic igneous rock, volatiles, xenoliths, porphyritic texture, glassy texture, pyroclastic texture, rhyolite, granite, magma chamber, batholith, diorite, andesite, gabbro, basalt, dunite, kimberlite, obsidian, assimilation, magmatic differentiation, magma mixing, fractional crystallization, shield volcano, composite volcano, volcanic dome

- know Bowen's Reaction Series
- how to use texture and mineralogy to describe igneous rocks
- how N.L. Bowen devised his Reaction Series to explain the mineralogy of igneous rocks
- how can you get different types of igneous rocks from the same magma body?
- texture of plutonic and volcanic igneous rocks as it relates to cooling history
- how the chemistry of a volcano affects its explosive potential
- the types of volcanoes, their compositions and where they form

Formation of Sediment and Sedimentary Rocks

terms - sediment, detrital sediment, nondetrital sediment, chemical sediment, weathering, physical weathering, chemical weathering, erosion, diagenesis, frost wedging, abrasion, plant root pressure, Bowen's Chemical Stability Series, hydration, oxidation, acidation, deposition, sorting, Wentworth's Grade Scale, diagenesis, lithification, cementation, compaction, dehydration, gravel, sand, dirty sand, clean sand, silt, clay, conglomerate, breccia, sandstone, siltstone, shale, coquina, limestone, coal, detrital texture, nondetrital texture

- the different types of physical weathering
- the different types of chemical weathering
- Bowen's chemical stability series
- the role of water in physical and chemical weathering
- the mineralogy of detrital sediment
- the mineralogy of nondetrital and chemical sediment (precipitants)
- how chemical weathering is aided by physical weathering (and vice versa)
- the 4 steps in making a detrital sedimentary rock
- the role of sorting in creating different types of sediment
- how different sizes of sediment are lithified
- how evaporites are formed

Metamorphic Rocks

terms - regional metamorphism, contact metamorphism, slate, phyllite, schist, gneiss, kilobar, geothermal gradient, lithostatic pressure, phyllitic luster, crenulations, quartzite, hornfels, marble, skarn, metamorphic grade, index minerals, protolith, recrystallization, mineral rotation, mineral alignment, foliated texture, nonfoliated texture, metamorphism, volatiles, contact aureole, PT Diagram

- the processes that metamorphose a rock
- the changes that occur in protoliths during regional metamorphism
- where regional and contact metamorphism occurs
- how contact metamorphism changes the protolith
- the index minerals that occur under different metamorphic grades
- the fields within the PT Diagram