

Earth Science Lecture - Test 3 Review (Monday - Oct 29, 2018)

Minerals

terms - mineral, mineraloid, rock, atom, ion, nucleus, atomic number, atomic weight, electron shell, cation, anion, ionic bonding, covalent bonding, proton, neutron, electron, element, chemical properties, nuclear properties, Van der Waals forces, physical property, crystal, crystal form, mineral cleavage, fracture, hardness, luster, streak, metallic luster, nonmetallic luster, Mohs Hardness Scale, specific gravity

- the definition of a mineral (5 parts)
- how the different types of chemical bonds form
- the Mohs Hardness Scale
- how crystal form is controlled by chemical bonds
- how cleavage and fracture are controlled by chemical bonds
- how hardness is controlled by chemical bonds
- how luster, streak and specific gravity are controlled by chemical composition

Igneous Rocks

terms - magma, lava, crystallization, mineralogy, silicate minerals, nonsilicate minerals, ferromagnesian silicates, nonferromagnesian silicates, texture, Bowen's Reaction Series, fractional crystallization, phaneritic texture, porphyritic texture, phenocrysts, groundmass, rhyolite, granite, diorite, andesite, gabbro, basalt, glassy texture, obsidian, viscosity, volatiles

- know the three major rock groups and their definitions
- the processes that form each of the three main rock groups
- how N.L. Bowen devised his Reaction Series to explain the mineralogy of igneous rocks
- know Bowen's Reaction Series
- texture of plutonic and volcanic igneous rocks as it relates to cooling history
- what are the controls on the violence of a volcanic eruption

Sedimentary Rocks

terms: sediment, detrital sediment, nondetrital sediment, weathering, physical weathering, chemical weathering, frost wedging, abrasion, plant root pressure, oxidation, acidation, hydration, lithification, dehydration, compaction, cementation, quartz, clay, sandstone, shale, limestone, coal

- how Bowen's Reaction series relates to a mineral's chemical stability
- how the different types of physical weathering break down rocks
- how the different types of chemical weathering break down rocks
- the steps for making a detrital sedimentary rock
- the types of detrital and nondetrital sedimentary rocks
- the processes that can lithify a sedimentary rock
- the compositions of detrital and nondetrital sedimentary rocks

Metamorphic Rocks

terms: metamorphic rock, geothermal gradient, lithostatic pressure, volatiles, metamorphism, regional metamorphism, contact metamorphism, schist, gneiss, quartzite, marble, protolith, recrystallization, mineral rotation, foliated texture, nonfoliated texture

- the processes that metamorphose a rock
- where does regional and contact metamorphism occur?
- the protoliths for the different types of metamorphic rocks
- how contact metamorphism alters the protolith
- how regional metamorphism alters the protolith