

Geology 101, SMCC, Spring 2018 Final Review, Chapters 2-11

The objectives below are a good place to start studying.

These may or may not be on the final. There may be objectives on the exam that aren't listed below. But everything on the exam we should have covered in the lectures, FRs, Shorties, Study Guides, etc. Think about getting together in groups to study, to review, to ask questions, to quiz each other.

Be nice to each other.

Ch 2 - Atoms to Minerals

1. Distinguish between a mineral and a rock.
2. Describe the five characteristics of a mineral.
3. Explain why granite is not a mineral.
4. Use the characteristics of a mineral to apply to specific minerals.
5. Distinguish between the streak of metals and nonmetals.
6. Describe mineral which can be identified by color.
7. Explain two problems with using only color to identify a mineral
8. Identify minerals with one cleavage
9. Name the most abundant elements in Earth's crust.
10. Know something about each of the minerals in the Mohs scale.
11. Explain the use of the acid test on calcite
12. Describe some common tests to determine what a mineral is.

Ch 3 - Igneous Processes

1. Explain what all igneous rocks have in common.
2. Be able to identify by sight common igneous intrusive and extrusive rocks.
3. Tell two common characteristics of extrusive igneous rocks.
4. Tell two common characteristics of extrusive igneous rocks.
5. Identify the terms laccolith, dike, sill, neck, batholith, pluton, etc in a drawing.
6. Explain why mantle plumes rise.
7. Explain the effect of increased water on the melting point of subducting material.
8. Describe the differences between the two major types of igneous rocks.

Ch 4 - Volcanism & Volcanic Rocks

1. Identify major extrusive rocks by sight.
2. Explain how different igneous rocks form.
3. Connect the rate of cooling to crystal size.
4. Sort igneous rocks by high and low silica content.
5. Explain the effect of higher silica on lava.
6. Describe four pyroclastic materials.
7. Explain the major cause of death from volcanoes.

Ch 5 - Weathering & Sediments

1. Define weathering.
2. Explain the different weathering end products of different minerals.
3. Identify minerals that often leach from surface rocks.
4. Related particle size to weathering rate.
5. Explain what causes talus slopes.
6. Describe several ways to reduce soil loss and increase farm productivity.
7. In an image, identify weathering resistant and non-resistant layers.

Ch 6 - Sediments and Rocks

1. Identify common characteristics of sedimentary rocks.
2. Explain how and where sedimentary rocks form.
3. Explain how quickly sedimentary rocks form.
4. Describe differences between the surface geology of southern and northern AZ.
5. List and describe the three types of sedimentary rocks.
6. Include 2 rocks in each type of sedimentary rock.
7. Explain the formation of evaporites and name 2 common evaporites.
8. Explain how cross bedded sandstone forms.
9. Place conglomerate, sandstone, siltstone and shale in their proper order.
10. Describe the cements that hold clastic sedimentary rocks.
12. Identify one sedimentary rocks that needs no cement.
12. List several features that occur only in sedimentary rocks.
13. Describe the formation and characteristics of coal from peat to anthracite.
14. Describe the importance of sedimentary rocks to earth history.
15. Describe how we use sedimentary rocks.

Ch 7 Metamorphism

1. Explain how metamorphic rocks form.
2. List several rocks and their metamorphic equivalent.
3. Differentiate between a metamorphic rock and its parent rock.
4. Describe the two major types of metamorphic rock.
5. Put different metamorphic rocks in the correct type.
6. Identify how metamorphic rocks are used by humans.
7. List one common foliated metamorphic rock sequence.
8. Explain how foliation is formed.
9. Explain why quartz and marble don't have foliations.

Ch 8 - Time & Geology

1. Differentiate between relative and absolute age.
2. Given a diagram, use Superposition, Original Horizontality, Included Fragments, Cross-Cutting Relationships, etc to determine the relative age of rocks and what happened to create the formation.
3. Describe the importance of unconformities.
4. Explain the importance of correlation.
5. List 3 pieces of evidence for distant continents once being connected.
6. Describe the rate of plate movement.
7. Differentiate between the rocks that form continents and those that form the sea floor.
8. Explain what is required form a fossil.
9. Explain what makes a good index fossil.

Ch 9 - Mass Wasting

1. Define mass wasting.
2. List several types of mass wasting from slow to fast.
3. List the cause of all mass wasting.
4. Tell how to reduce the likelihood of mass wasting.
5. Define the angle of response and explain what it is for sand.
6. Explain the impact on the angle of repose of adding water to sand.
7. Identify three characteristics of an area affected by creep.

Ch 10 - Streams and Floods

1. Explain the importance of the water cycle.
2. Know where the where most water on Earth occurs.
3. Identify what a drainage basin is and name the major drainage basins in Arizona.
4. In a diagram, be able to identify the bed load, suspended load, dissolved load.
5. Explain the gradient, valley cross-section shape and sediment types carried by a young, mature, & old river.
6. Explain the step-by-step process how an oxbow lake forms.
7. Identify the major drainage basins of the USA and the two major divides.
8. Explain where the water moves fastest in a river.
9. Label a diagram with head, mouth, delta, tributaries, distributaries, river.
10. Something about base level....

Ch 11 - Groundwater

1. On a diagram, identify the zone of aeration, zone of saturation and water table.
2. Tell which sediments are most and least porous and which are most and least permeable.
3. Describe three ways groundwater is being contaminated.
4. Explain why Phoenix water is so high in minerals.
5. In a drawing, identify a stalagmite, a stalactite and a column.
6. Explain why limestone is the most common rock in which caverns are formed.
7. Explain why shale makes a good impermeable layer.
8. Explain how wells can go dry due to over pumping or reduced rain.
9. Diagram a how a well, a spring, and artesian well form.
10. Explain the formation of a cone of depression. This makes me sad!
11. Explain what is happening to aquifers around the world due to human impact.

*If you'd like more geology, consider taking **Historical Geo or Geo Disasters** in the fall semester at SMCC. **Historical** will be at noon and late-start. **Disasters** is on-line.*