

Geology Unit Exam Study Guide

1. For your Geology Unit Exam you will ABSOLUTELY need to review the following note sheet and labs to make sure that you understand the concepts involved and familiarize yourself with Regents-style questions:

- Shape of the Earth/Mapping Packet
- Mineral Identification Lab
- Rock Properties Packet
- Earth's Surface Processes Packet
- History of the Earth Packet
- Dynamic Earth/Plate Tectonics Packet/Structure of Earth
- Locating Epicenter Packet

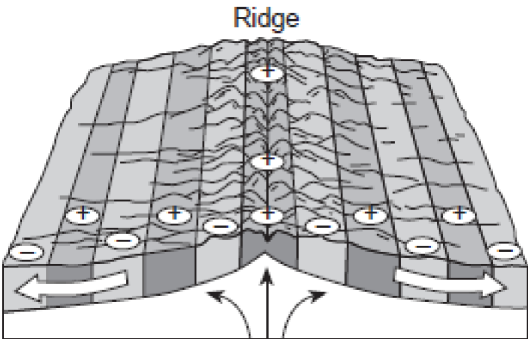
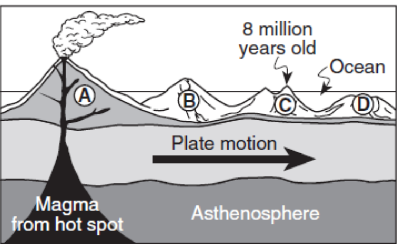
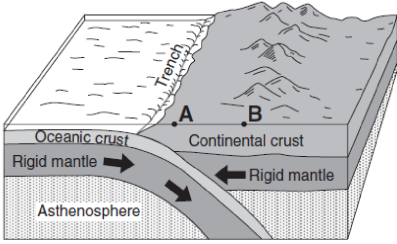
2. Make sure you understand how to read and interpret the associated charts and maps on pages 2,3,5,6,7,8,9, 10, and 11 of the ESRT.

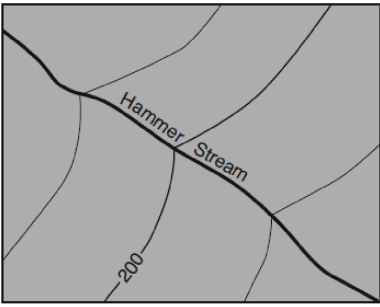
3. Be sure you can define and understand the concepts surrounding the Dynamic Earth and the following vocabulary words/phrases:

- LITHOSPHERE
- MID-OCEAN RIDGE
- ASTHENOSPHERE
- TRENCH
- MANTLE
- VOLCANO (formation, locations)
- MAGMA
- EARTHQUAKES
- CONTINENTAL VS. OCEANIC CRUST
- MOUNTAIN-BUILDING
- SUBDUCTION ZONES
- SEA FLOOR SPREADING
- HOT SPOTS (ex. Formation of Hawaii)
- CONVECTION CELLS
- DIVERGENT BOUNDARY
- CONVERGENT BOUNDARY
- TRANSFORM BOUNDARY
- P AND S WAVES
- EPICENTER
- FOCUS
- SHADOW ZONES
- Mineral
- Luster
- Fracture
- Streak
- Cleavage
- Hardness
- Igneous rock
- Sedimentary rock
- Metamorphic rock
- Intrusive
- Extrusive
- Felsic
- Mafic
- Clastic sedimentary rock
- Non-clastic sedimentary rock
- Foliation
- Non-foliated
- Metamorphism
- Contact metamorphism
- Regional metamorphism
- Relative Dating
- Absolute Dating
- Weathering
- Erosion
- Deposition
- Meander
- Topography
- Gradient
- Contour Interval
- Isoline

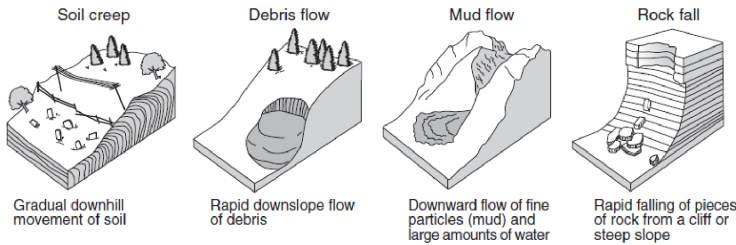
* These items are just the highlights of what may appear on the test. Please be sure to review all notes, homework, labs, and the ESRT It is not just enough to *memorize* these facts; you must be able to apply these ideas to different situations and context

Really Important Diagrams and Concepts to Understand for the Geology Exam

Question and Diagram:	Answer and explanation:
<div style="text-align: center;">  </div> <p>1. How does the age of the seafloor compare on either side of the ridge?</p>	
<div style="text-align: center;">  </div> <p>2. List the volcanic islands in order of increasing age.</p> <p>3. What is a possible age of island B?</p>	
<p>4. Name a chain of islands that has formed in a similar way.</p>	
<div style="text-align: center;">  </div> <p>6. Compare the density of the oceanic crust to continental crust.</p> <p>7. What kind of plate boundary is this?</p>	
<p>8. Describe the relative motion of the tectonic plates here.</p>	
<p>9. Where in the Americas is this happening?</p>	



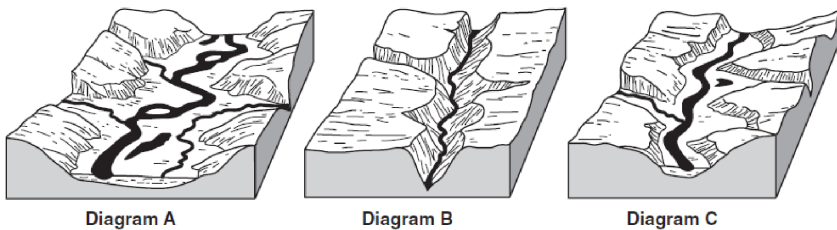
10. Which way is Hammer Stream flowing? Explain.



11. What is the name for this category of erosion?

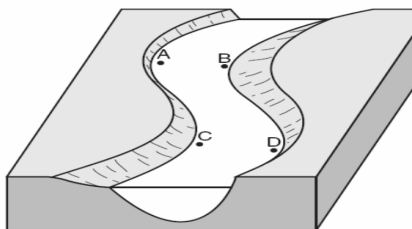
12. Why is this considered erosion & not weathering?

13. What controls the speed of the sediment? (referring to settling rates)



14. What are the names for the stages of this stream's development?

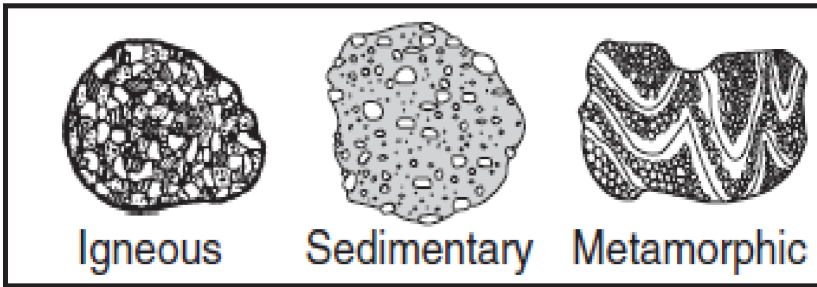
16. Compare the velocity of the stream in diagram A to Diagram B.



17. Which locations is the water moving the fastest?

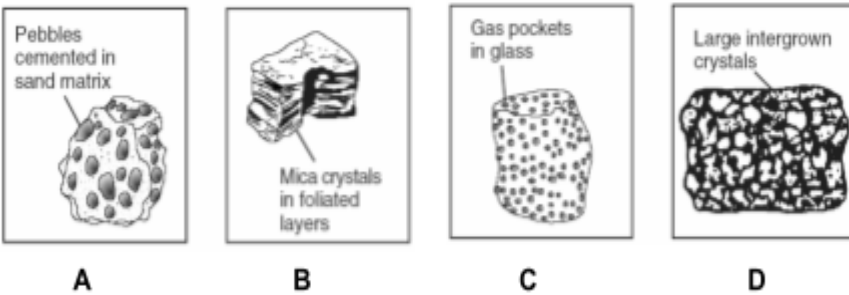
18. Which locations will have the most deposition?

19. If a glacier were to advance into the valley of Diagram B, how would the shape of the valley change?



20. What is the method (process) of formation for each type of rock?

22. If they were drawn actual size, is the igneous rock intrusive or extrusive? Explain.



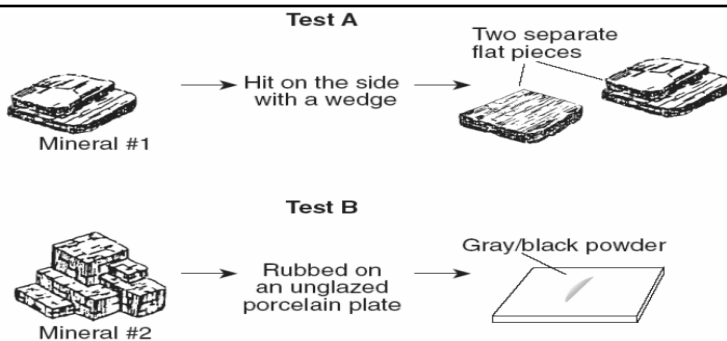
23. Which rock is a sedimentary rock?

24. What is the name of that sedimentary rock?

25. Which rock is an example of an extrusive igneous rock?

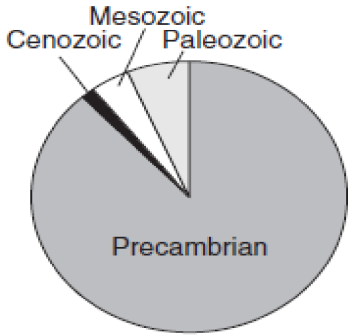
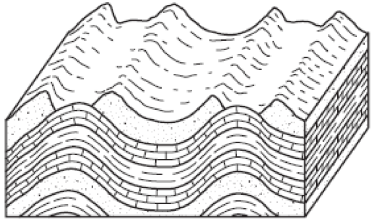
26. Which rock is an example of a metamorphic rock?

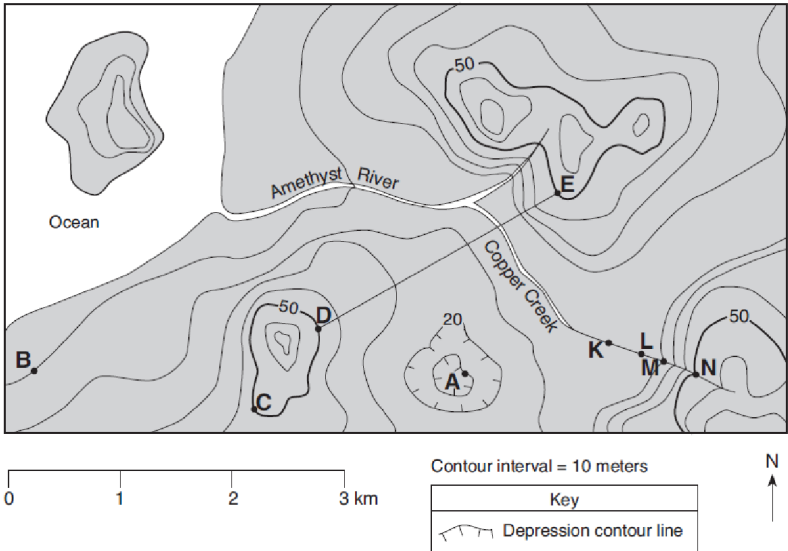
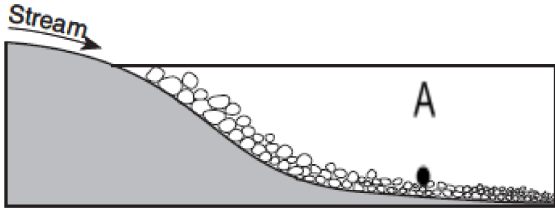
27. Which rock could be an example of granite?

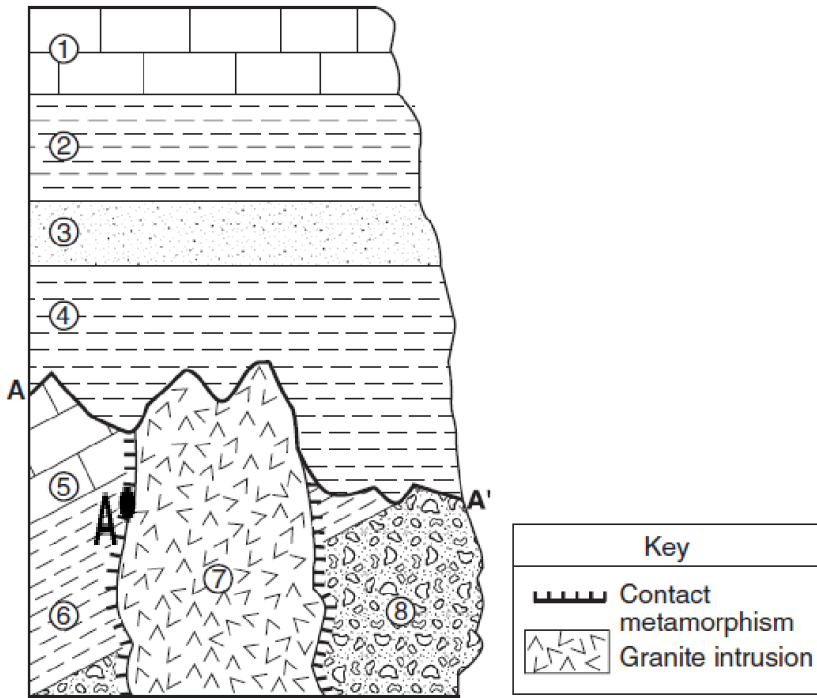


28. Mineral test A is testing....

29. Mineral test B is testing...

 <p>A pie chart representing geological time. The largest section is labeled 'Precambrian'. Moving clockwise, the next section is 'Paleozoic', followed by 'Mesozoic', and the smallest section is 'Cenozoic'.</p>	
<p>30. How long ago did the Precambrian Eon begin?</p>	
<p>31. How many millions of years ago did the Paleozoic Era begin?</p>	
<p>32. What event marked the boundary between the Mesozoic and the Cenozoic?</p>	
<p>33. List the Periods that make up the Mesozoic from most recent to most ancient.</p>	
 <p>A 3D block diagram showing a landscape with wavy, layered rock units. The layers are horizontal but have been deformed into a series of rounded, wave-like folds. The top surface is uneven, representing a topographic landscape.</p>	
<p>34. Were the rock units formed in this pattern?</p>	
<p>35. What kind of tectonic forces could produce a landscape like this?</p>	
<p>36. Were these rock units folded, faulted, or tilted?</p>	

 <p>37. How do you know copper creek is flowing faster between points N & M, than between points L & K?</p>	
<p>38. What is the elevation for point A?</p>	
<p>39. What is the highest possible elevation for the island in the NW corner of the map?</p>	
<p>40. What is the distance between points D & E?</p>	
<p>41. Calculate the gradient between points B & C.</p>	
 <p>42. Why are the sediments sorted as shown in the diagram?</p>	
<p>43. If the size of the sediment at point "A" is 0.02 centimeters, how fast was the current there?</p>	



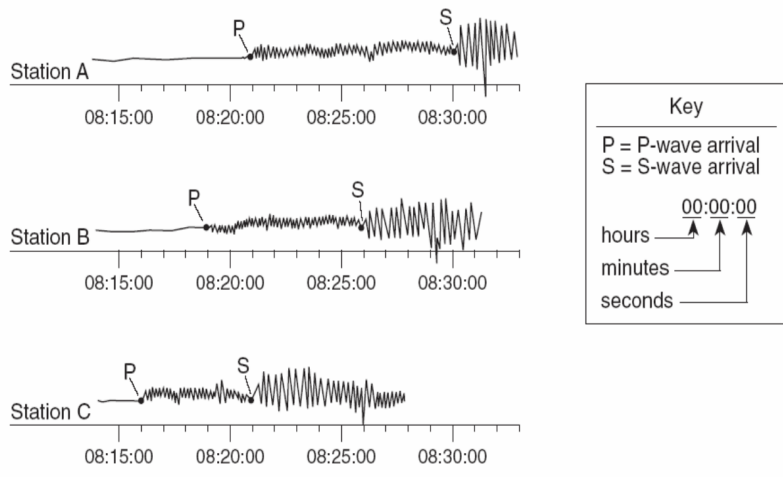
44. List the eight rock units in order from oldest to youngest

45. What is line A – A' called?

46. What kind of rock would be found at point A?

47. If layer #4 was formed during the Ordovician, which trilobite index fossil might be found within that rock unit?

48. What is the pressure at the interface between the outer core and the mantle?

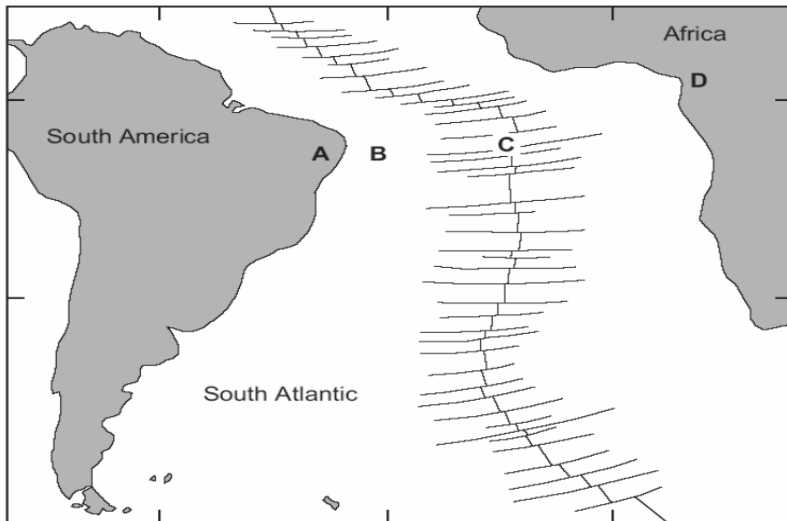


49. What is the difference in arrival times of the P and S waves at station A?

50. How far from the epicenter is location B?

51. What is the P-wave travel time at location C?

52. Which location is closest to the epicenter?

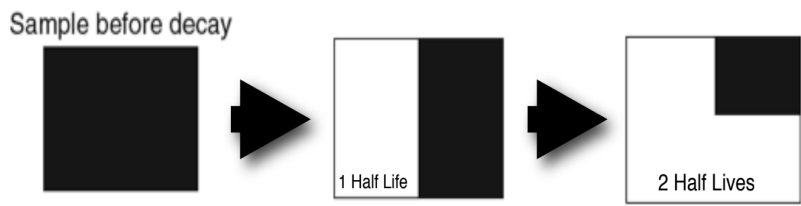


53. How does the age of B compare to C?

54. How does the density of A compare to B?

55. What type of boundary is C?

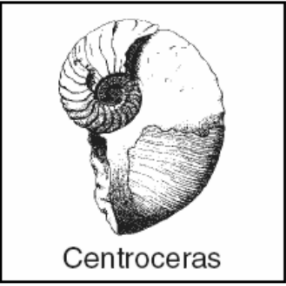
56. What is the name of location C?



57. If the half life above is 5700 years, how many years have gone by?

58. In the example above, what percentage of original sample is left?

59. What isotope is used to date young, organic material?



Centroceras

60. What geologic period is this fossil from?

61. Name another fossil found in the same bedrock.