

Name: _____



Complete the following using your ESRT. Remember to show work and use units as appropriate.

Page 1

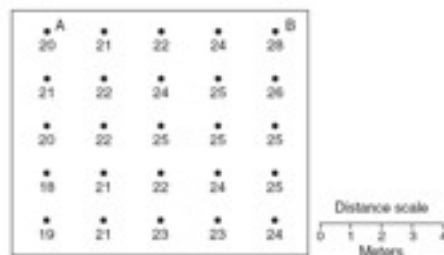
1. Write the half life of Uranium-238 as a standard number _____
2. What substance requires the most energy to heat up a unit mass by 10°C?

3. Which uses more energy, melting a 10 g ice cube or evaporating 10 g of water?

4. How wide is this sheet of paper, to the nearest 0.1 cm? _____
5. How many half lives have passed if a wood sample from a glacier deposit is 28,500 years old?
_____ Why is Carbon-14 a good choice to date this sample?
_____ What is the daughter product? _____
6. What is the density of Water at 3.98°C? _____
Since Ice floats, what does that tell you about its density compared with the density of liquid water?

7. What is the New York State Fossil? _____
8. What are the 2 most common elements in the oceans? _____
9. What element makes up about 8% of crustal rocks by mass, but only about .5% by volume?

10. Would potassium be found in the Troposphere? _____ What is the symbol for potassium? _____
11. How many Joules would be required to raise the temperature of 1 g of Basalt by 10°C? _____
12. What is the average gradient from A-B? _____



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13. What landscape region do we live in? _____
14. What is the name of the landscape region Plattsburgh, NY is in? _____
15. Would the Catskills be classified as a mountain, plateau, or lowland? _____
16. What 3 landscape regions are within the New England Province?

17. What major geographic province does the Tug Hill Plateau belong to? _____

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18. Fill in the table below: Geology of Rochester and Old Forge

	Rochester	Old Forge
Latitude		
Longitude		
Bedrock age		
Igneous, Sedimentary or Metamorphic?		
Direction from Ithaca		
Distance from Ithaca, in Kilometers		

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19. What ocean currents tend to keep coastal areas of Europe warmer?

20. How does the Peru Current affect the climate of the coast of South America?

21. What Current goes around the Earth without “bumping into” a continent? _____

22. What current runs by 20° N, 160°W? _____

23. How many degrees difference is there between the Tropic of Capricorn and the Tropic of Cancer? _____

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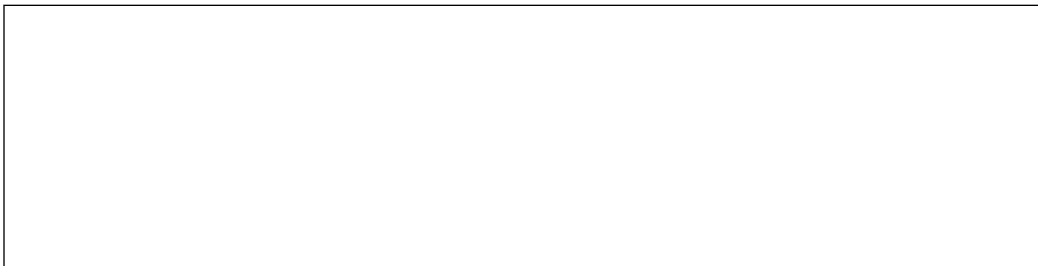
24. Why are the Himalayan Mountains (North of India) so high and continuing to get higher?

25. What type of Plate Boundary is the East African Rift? _____

26. How many types of plate boundaries can be found on the Cocos Plate? _____
What are they? _____

27. What is found at 15°S, and just West of the Prime Meridian? _____

28. Draw a side view, from West to East, showing the boundary between the Nazca Plate and the South American Plate. Include arrows to show direction of movement. Indicate where volcanoes/mountains would be and place X's where earthquakes will occur.



29. Name the major active fault in the U.S. _____

30. Complete the table below:

	Convergent	Divergent	Transform	Complex/Uncertain
Relative motion				
Symbol				
Example (give location using two plate names)				
2 features and/or events that happen at this type of boundary				

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31. What processes must a metamorphic rock go through to become sediment?

32. What types of rocks can become metamorphic rock?

33. Name the particle sizes that can be transported by water with a stream velocity of 9 cm/s.

34. A particle with a diameter of 0.05 cm must be in a stream with a water velocity of _____ in order to be moved by that stream.
35. What is the particle size range for silt? _____
36. Name the rock which contains plagioclase feldspar, biotite, and amphibole, and was formed intrusively.

37. Explain the difference between vesicular basalt and basalt. _____

38. What elements can I expect to find in dunite? _____
39. Complete the table below:

Rhyolite	Rock Name	Basalt
	Composition	
	Density	
	Minerals Present	

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40. What rock would be composed of sediments with grain sizes of 0.004 cm? _____
41. Explain how dolostone differs from sandstone, with respect to its origin. _____

42. What are the two primary textures for metamorphic rocks? Give an example for each. _____

43. Would contact metamorphism result in banding? _____ Why or why not? _____

Pages 8 & 9

44. How long did the Devonian Period last? _____
45. What is the name of the index fossil that lived in the late Triassic? _____
46. What happened at the end of the Paleozoic Era? _____

47. Was there ever a time period when dinosaurs, eurypterids, and brachiopods were living together on Earth?

48. A geology student finds a Manticoceras in a rock sample. What major rock type did she find it in?
_____ What is the age of the rock? _____
What type of environment was the Manticoceras likely living in? _____
49. Devonian aged shale is found in Ithaca, New York. What types of fossils is it likely to contain?

Page 10

50. What layer of the Earth are there convection cells? _____ What feature forms where the convection cell rises due to lower density? _____
51. Determine the pressure and temperature at the interface between the Inner and Outer Core?

52. What are the sub-layers of the Lithosphere? _____
53. What is the range of temperature from the bottom of the Asthenosphere to the bottom of the Stiffer Mantle?

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54. How far away is the epicenter of an earthquake if the S-P interval is 6 min 20 sec? _____
55. If an earthquake occurred at 07:20:00 am, and the distance to the epicenter is 4,000 km, what time did the P-wave arrive? _____ What time did the S-wave arrive? _____

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56. Determine the dewpoint if the air temperature is 13°C and the wet-bulb temperature is 9°C. _____
57. If the dewpoint is -1°C, and the air temperature is 4°C, what is the relative humidity? _____
58. As dewpoint gets closer to the dry-bulb temperature, what happens to relative humidity?

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59. Convert -16°C to Fahrenheit: _____
60. How many degrees difference is there between the point of water freezing to the point of water boiling, in $^{\circ}\text{K}$?

61. 29.30 inches of mercury is _____ millibars.
62. Make a station model for the following weather conditions:
Temperature = 42°F
Barometric Pressure = 1020.0 mb
Winds NW at 15 knots
Freezing Rain
Overcast
Dewpoint = 42°F
63. What symbol would go on a map if a warm air mass is rising gently over a cold air mass, causing showers ahead of this front? _____
64. What type of air mass has dry, cold air? _____ symbol: _____

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65. Describe what happens to the temperature as a weather balloon rises from Sea Level to 80 km. Include the temperature values in your response.

66. What happens to water vapor as one descends from the tropopause to sea level?

67. The wind belts shown are near the equinox dates. As the Sun's rays become more vertical in the Northern hemisphere, what do the wind belts do? _____
68. Planetary winds at latitude 43°N typically come from the _____
69. Latitudes with rising convection cells typically are (wet, dry) and (high, low) pressure zones.
70. Place the following in order of decreasing wavelengths:
Infrared X rays Radio waves Blue Visible Light Red Visible Light

71. Visible light reaches Earth from the sun, and infrared heat waves are radiated back from the Earth. The visible light waves are (longer, shorter, the same as) the infrared rays.

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72. On what basis do we classify stars? _____
73. Complete the chart below.

	Spica	Aldebaran
Color		
Temperature		
Luminosity		
Size		

