

Cover (page 1):

1. If a container of sand takes 20 minutes to cool 14 °C, what is the rate of change? \_\_\_\_\_
2. How much of a 400-gram sample of K<sup>40</sup> is left after 2 half-lives? \_\_\_\_\_
3. During which phase change is the most energy gained? \_\_\_\_\_
4. From the specific heat chart... which material heat and cools the fastest? \_\_\_\_\_
5. A material has a density of 4.5 g/ml and a mass of 2.6 grams, what is the volume? \_\_\_\_\_
6. What element is most abundant in the troposphere? \_\_\_\_\_
7. What is the eccentricity is the foci distance is 7.6 cm and the major axis is 15.2 cm? \_\_\_\_\_
8. On a topographic map, Point A is 456.0 meters elevation. Point B is 1256 meters.  
They are 12.2 km apart. What is the gradient? \_\_\_\_\_

PAGE 2

9. Locate the approximate lat and long of the following landscape regions in New York State: (also use page 3)
- a. Tug Hill Plateau \_\_\_\_\_

b. Taconic Mountains \_\_\_\_\_

c. Triassic / Newark Lowlands \_\_\_\_\_
10. Within what landscape is Manhattan located? \_\_\_\_\_

Page 3

11. Where are the youngest rocks in New York State? \_\_\_\_\_
12. Where are the oldest rocks in New York State? \_\_\_\_\_
13. Which region(s) of New York State would have little evidence of fossils? \_\_\_\_\_
14. Which city is located closest to 43°N and 77°38' W? \_\_\_\_\_
15. How old are the oldest sedimentary rocks in New York State? \_\_\_\_\_
16. How old are the oldest rocks that are found in New York State? \_\_\_\_\_

PAGE 4:

17. Describe the motions of the Gulf Stream. \_\_\_\_\_
18. In what direction does the California current flow? \_\_\_\_\_

Page 5 :

19. List the major plates of the world: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_
20. List the major motions of plates due to plate tectonics. \_\_\_\_\_
21. What is the relationship on this map of plate boundaries and volcanic activity. \_\_\_\_\_

PAGE 6/7:

22. If a stream's velocity increases from 10 cm/sec to 100 cm/sec,  
what sediments can be carried? \_\_\_\_\_
23. A sediment 0.55 cm in diameter will most likely form what type of rock? \_\_\_\_\_
24. Evaporites can be listed as minerals and rocks. How are they formed? \_\_\_\_\_
25. Sandstone can differ from limestone based on particle size. How is their point of origin different? \_\_\_\_\_
26. What minerals are found in granite? \_\_\_\_\_
27. How does rhyolite differ from granite? \_\_\_\_\_
28. Which minerals are not present in felsic type igneous rocks  
but are present in mafic type igneous rocks? \_\_\_\_\_
29. How do felsic and mafic igneous rocks differ in density, color, and mineral content? \_\_\_\_\_  
\_\_\_\_\_
30. What process must a rock undergo in order to become igneous? \_\_\_\_\_
31. What process must a rock undergo in order to become metamorphosed? \_\_\_\_\_
32. List all the terms associated with the formation of sedimentary rocks. \_\_\_\_\_
33. What are the two major divisions of sedimentary rocks? \_\_\_\_\_
34. How is a breccia different from a conglomerate? \_\_\_\_\_
35. How is pegmatite formed? \_\_\_\_\_
36. What is the composition of rock salt? \_\_\_\_\_
37. How are bituminous coal and anthracite coal different? \_\_\_\_\_
38. What are the main types of metamorphism? \_\_\_\_\_
39. What are the two major textures of metamorphic rocks? \_\_\_\_\_
40. Complete:  
metamorphic rock -----> parent rock  
  
slate \_\_\_\_\_  
marble \_\_\_\_\_  
quartzite \_\_\_\_\_

Page 8 and Page 9

41. During which period were trilobites common? \_\_\_\_\_
42. What is the approximate age of the Appalachian plateau? \_\_\_\_\_
43. Which span of geologic time is the longest? \_\_\_\_\_
44. For how long did dinosaurs roam the earth? \_\_\_\_\_
45. How long ago did dinosaurs become extinct? \_\_\_\_\_
46. Which is the most recent time period where North America and Africa are believed to be separated? \_\_\_\_\_
47. Describe the motions of North America from the Ordovician to the Tertiary. \_\_\_\_\_
48. When was the Taconian Orogeny and how did it happen? \_\_\_\_\_
49. When did the Atlantic Ocean started to open? \_\_\_\_\_
50. What is the official fossil of NYS (see cover)? \_\_\_\_\_

**PAGE 10:**

51. Which of earth layers is the most dense? \_\_\_\_\_

52. What is the approximate pressure at the mantle-outer core interface? \_\_\_\_\_

53. In which strata of the earth is the Earth's temperature change the greatest? \_\_\_\_\_

54. Where is the Moho located? \_\_\_\_\_

55. How thick is the asthenosphere? \_\_\_\_\_

56. List the components of Plate Tectonics shown in this diagram:

57. What is the composition and phase of the inner core? \_\_\_\_\_

**PAGE 11:**

58. What is the scale on the y-axis (eq chart)? \_\_\_\_\_

59. What is the scale on the x-axis (eq-chart)?

60. If P waves arrive 5 minutes and 20 seconds before S waves from an earthquake, what is the distance of the observer from the epicenter?

61. If the epicenter is  $5 \times 10^3$  km from the observer what was the lag time between arrival times of P wave and S wave? \_\_\_\_\_

62. If the lag time between the P and S wave is 8 minutes and 20 seconds, what is the distance from epicenter?

**PAGE 12:**

63. Find the dewpoint if the wet bulb reading is  $3^{\circ}\text{C}$  and the dry bulb is  $6^{\circ}\text{C}$

64. Find the air temp. (dry bulb) if the dew point is  $15^{\circ}\text{C}$  and the wet bulb depression is  $5^{\circ}\text{C}$

65. What is the relative humidity if the air temp. is  $10^{\circ}\text{C}$  and the dew point is  $6^{\circ}\text{C}$ ? \_\_\_\_\_

**PAGE 13:**

66. Find the equivalent values of the following:

a)  $64^{\circ}\text{F} =$    $^{\circ}\text{C}$

b)  $64^{\circ}\text{ F} =$   K

67. a. From what direction is the wind blowing on the station model?

b. What is the wind speed in knots on the station model?

68. What is the present weather symbol for thunderstorms?

69. Draw and label each type of weather front:

70. a) What is the air pressure of 1 atmosphere?

b) What is the air pressure of 2 atmospheres?

c) 30 " Hg =                      mb (pressure)

**PAGE 14:**

71. Which electromagnetic energy has the shortest wavelength?

72. All of our weather is found below ? km.

73. At which zone in the atmosphere does the temperature go over  $50^{\circ}\text{C}$ ?

74. Describe the relationship of winds and wet and moist climates.

75. Which latitudes have high and low pressure?

PAGE 15:

76. Which planet has an orbit most like a circle? \_\_\_\_\_
77. What planet has the longest period of revolution? \_\_\_\_\_
78. What is the most dense planet? \_\_\_\_\_
79. What type of star is the sun? \_\_\_\_\_
80. How are stars classified? \_\_\_\_\_

PAGE 16

81. What mineral is dark and cleaves into sheets? \_\_\_\_\_
82. What metallic mineral has a red streak? \_\_\_\_\_
83. List 2 outstanding properties of olivine. \_\_\_\_\_

Write SEVEN questions based on the ESRT (not cover in questions 1-83) and answer each

84. \_\_\_\_\_  
Answer: \_\_\_\_\_
85. \_\_\_\_\_  
Answer: \_\_\_\_\_
86. \_\_\_\_\_  
Answer: \_\_\_\_\_
87. \_\_\_\_\_  
Answer: \_\_\_\_\_
88. \_\_\_\_\_  
Answer: \_\_\_\_\_
89. \_\_\_\_\_  
Answer: \_\_\_\_\_
90. \_\_\_\_\_  
Answer: \_\_\_\_\_