| Review At Your Finger 7  | ips Na                                       | ame                                     |   |
|--|--|---|---|
| 2001 Editon  |  | ate                                     | Per                                     |
| The Earth Science Reference Tables is undoubtedly you important resource for the Earth Science Regents exam. to use it will be of critical importance in your performance be a learning activity. If you are unable to answer any of | A knowledge of the ce. Please keep in        | mind that comple                        | eting this paper should                 |
| Referemnce Tables; Page 1  | ***************************************      | *************************************** | *************************************** |
| 1. How wide is this sheet of paper, to the nearest 0.1 cr  | n?   | in meters                               | s?                                      |
| 2. Which of the radioactive substances listed on this pa   | ge has the shortest                          | half life?                              |   |
| 3. Write the half life of Uranium-238 as a standard nur  | mber.  |   |   |
| 4. If you started with 100 g of K-40, how much would   | remain k-40 after                            | 3.9 x 10 <sup>9</sup> years?            |   |
| 5. What common substance requires the most energy to   | heat up a unit ma                            | ass by 10°C?                            |   |
| 6. Which uses more energy, melting a 10 g ice cube or  | evaporating 10 g o                           | of water?                               |   |
| 7. If I estimated a rock to have a volume of 20 cm <sup>3</sup> , but measurement showed it's true volume to be 25 cm <sup>3</sup> , would be the percent deviation of my estimate?  |  |   |   |
| (Please show you work for items $5 \nearrow$ and $6 \swarrow$ .)   |  |   |   |
| Page 2   | 8. What is the average gradient from A to B? | Camp Hill 400 X Cave Creek  0 1 2       | 300  Elevations in meters               |
| Page 2   | ***************************************      | *************************************** | •••••••••••••••••••••••••••••••••       |
| 9. In what landscape region do you live?   |  |   |   |
| 10. What is the landscape region around Old Forge, NY  | ?  |   |   |
| 11. The Catskill Mountains are a part of what larger landscape area?   |  |   |   |
| Page 3   | ***************************************      | *************************************** |   |
| 12. If you want to drive from Albany to Buffalo, what di   | rection must you to                          | ravel?                                  |   |
| 13. What are the approximate terrestrial coordinates of W  | Vatertown, NY?                               |   |   |

| 14.   | . What is the numerical age of the bedrock around Syracuse, NY?   |   |
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| 16.   | . As water flows from Lake Erie into Lake Ontario, most of the change in elevation is at Niagara Falls. What is the total change in elevation?  |   |
| 17.   | Which kind of rocks are most common in the Catskills?   | ous, Metamorphic or Sedimenatry         |
| 18.   | What New York landscape region has the oldest bedrock?  |   |
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| 19.   | . What ocean current keeps Europe relatively warm?  |   |
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| 22.   | With respect to Africa, in what direction is South America drifting?  |   |
| 23.   | . What kind of plate boundary is the Mid-Atlantic Ridge?  | nsform, Spreading or Subduction         |
|   |   |   |
| 24.   | . What is the major active fault in the Western United States??   |   |
| <ul><li>24.</li><li>25.</li></ul>   |   |   |
|   | ·   |   |
| 25.   | . What has caused the growth of the   | ·                                       |
| 25.   | . What has caused the growth of the Himalayan Mountains, north of India?  . Where is the nearest major mantle hot spot/plume?   |   |
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At Your Finger Tips TROUBLE W/ A TABLE SEE http://homercentral.org/hs/Science/ref.html FOR TABLE EXPLANATIONS

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| 33. | What minerals are most common in sandstone?                                     |
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| 44. | At what two depths within the Earth is the temperature above the melting point? |
| 45. | What is Earth's radius in kilometers? What is its diameter?                     |
| 46. | What is the composition of Earth's core?  |
| 47. | Which layer of the Earth is the least dense? Most dense;                        |
| 48. | In what part of the Earth does the temperature increase fastest with depth?     |

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|------|-----------|---|---|---|---|----------------------------|---|
| 49.  | What      | is the tw                               | o most common el                        | ement in the ocear                      | as?·                                    |                            |   |
| 50.  | How       | long doe                                | s it take an S-wave                     | to travel 6000 km                       | ?                                       | a P-wav                    | ve?                                     |
| 51.  | How       | far away                                | is the epicenter if t                   | ne P-wave arrives                       | 5 minutes before th                     | e S-wave?                  |   |
| 52.  | What      | element                                 | makes up about 6%                       | % of crustal rocks                      | by mass, but only ½                     | 2% by volum                | e?                                      |
|      |           |   | P-wave travel in 5                      | •                                       |   |                            |   |
| rage | S 12      | 300000000000000000000000000000000000000 | *************************************** | *************************************** | *************************************** | *************************  | *************************************** |
| 54.  | If the    | wet bulb                                | reads 4°C and the                       | dry bulb records 1                      | 2°C, what is the de                     | wpoint?                    |   |
| 55.  | What      | is the rel                              | ative humidity in the                   | e conditions speci                      | ified above?                            |                            |   |
| 56.  | What      | does a ne                               | egative dewpoint m                      | ean?                                    |   |                            |   |
| Page | s 13      | 200000000000000000000000000000000000000 | *************************************** | 000000000000000000000000000000000000000 | *************************************** | 99949999999999999999999999 | *************************************** |
| 57.  | What      | is the Ke                               | elvin temperature o                     | f 0° C?                                 | What is this to                         | emperature in              | Fahrenheit?                             |
| 58.  | What      | is the no                               | rmal atmospheric                        | pressure in inches                      | of mercury?                             |                            |   |
| ~_   | 231       | 59.                                     | What is the Fahre                       | nheit temperature                       | at this weather stati                   | ion?                       | Celsius?                                |
| 50   | -42<br>00 | 60.                                     | What is the atmos                       | pheric pressure?                        | Is it                                   | rising or fall             | ing?                                    |
|      |           | 61.                                     | Wind speed?                             | Wind                                    | direction?                              | Clou                       | ad Cover?                               |
|      |           |   |   |   |   |                            | (You should know this.)                 |
| Pag  | es 14     |   |   |   |   |                            |   |
| 63.  | How       | does the                                | air temperature cha                     | nge as you go hig                       | her within the meso                     | osphere?                   |   |
| 64.  | What      | name ha                                 | s been given to the                     | boundary at the b                       | ottom of the atmosp                     | phere?                     |   |
| 65.  | What      | form of                                 | electromagnetic er                      | nergy has a wavele                      | ength just too long t                   | to be visible to           | o us?                                   |
| 66.  | What      | is the ap                               | proximate wavelen                       | gth of visible light                    | ?                                       |                            |   |

At Your Finger Tips
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| 67. | What is the prevailing wind direction 45° south of the equator?   |
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| 70. | The North Star is similar to the sun in and   |
|     | How is it very different?   |
| 71. | Rigel and Betelgeuse are two of the brightest stars in the prominent winter constellation Orion.  How does Betelgeuse appear different from Rigel to us?  |
| 72. | Of the nine planets, which one spins the fastest on its axis?   |
| 73. | Which planet has the most out of round (flattened) orbit?   |
| 74  | Which planet is closest to the Earth in size?   |
| 75. | Approximately how much larger is the sun's diameter than the diameter of the Earth?   |
| Pag | ges 16  |
| 76. | What mineral has a nonmetallic luster, scratches glass and is often pink?   |
| 77. | Name two common minerals that are chemical elements and   |
| 78. | What is the most obvious difference between amphibole and pyroxene?   |
| 79. | What other minerals form crystals similar in shape to pyrite?   |
|     | GOOD, IT'S A MULTIPLE-CHOICE TEST.  YOU HAVE TO APPROACH THESE THINGS LOGICALLY.  WAY OFF, SO I ELIMINATE THAT ONE  WHICH THEREFORE NARROWS MY CHOICE DOWN TO THE ONLY REMAINING POSSIBILITIES:  REMY, MEENY, MEENY, MEENY, MINEY OR MOE. |

## Tips: At Your Finger Tips (Ref. Tables Review) Review

Difficulty:

Should be Fairly Easy

**Content:** 

Very Important

**Mode of Instruction:** Individual Work or Small Group Work

(If you opt for small groups, be sure that the slower students are not just copying the answers from their quicker peers.

Preparations: None

**Materials:** 

Class set of Reference Tables

Time: 30 - 40 minutes (??)

**Suggestions for the Teacher:** 1. Monitor the students to be sure they are picking up needed skills and to get feedback on how well your have taught them.

**Student Intro:** 

- 1. Stress that the Regents exam puts a heavy emphasis on the use of the ESRT. Mastery of that resources is critical (!!)
- 2. This should be a learning activity, not just a race to see if you can finish quickly.

Post-Lab:

Can be followed up with a "Jeapordy" type game. The problem with such games is that the students who need the skills tend to be those who participate least.

**Extensions:** None

Source: TMcG

- 38. IVIATORE
- 39. Between the Triassic and the Cretaceous
- 40. Approximately 4.6 billion years
- 41. The Cambrian
- 42. Permian and Tertiary
- 43. Mammals
- 44. 200-600 km and 2900 4800 km
- 45. About 6300 km; About 12600 km
- 46. Iron and Nickel
- 47 The Crust (or the Lithosphere); The Inner Core
- 48. The Crust (or the Lithosphere)
- 49. Hydrogen and Oxygen
- 50. 17 minutes; 9 minutes, 25 seconds
- 51. About 3500 km
- 52. Iron
- 53. 3000 km
- 54. -9°C
- 55. 19%
- 56. Frost (solid) would form instead of dew (liquid).
- 57. 273°K; 32°F
- 58. 29.92 inches of mercury
- 59. 65°F; 18°C
- 60. 1023.1 mb and falling
- 61. 5 knots from the northwest; 25% Cloud cover
- 62. Moist and Warm
- 63. It Decreases
- 64. Sea level
- 65. Infrared
- 66. 4-7 x 10-5 cm
- 67. From the North West
- 68. Rising air cools causing precipitation.
- 69. Just over one part in 10,000. (About 1/100 of 1%)
- 70. Temperature and color
- 71. Betelgeuse is more red in color.
- 72. Jupiter
- 73. Pluto
- 74. Venus
- 75. Approximately 100 times
- 76. Potassium Feldspar
- 77. Graphite and Sulfur
- 78, Pyroxene cleaves at right angles.
- 79. Galena and Halite also form cubic crystals.

- 1. 21.6 cm = 0.216 m
- 2. Carbon-14
- 3. 4,500,000,000 years (4½ billion years)
- 4. 12.5 grams
- 5. Water (as a liquid)
- 6. Evaporating the 10 g of water (Almost 7 x as much)
- 7. % Deviation = Difference/Accepted Value x  $100 = 5 \text{ cm}^3/25 \text{ cm}^3 = 20\%$
- 8. Gradient = D Field Value/D Distance = 150 m/3 km = 50 m/km
- 9. (various)
- 10. Adirondack Mountains
- 11. Allegheny Plateau
- 12. West
- 13. 44°N, 76°W
- 14. 408 438 million years
- 15. About 75 km
- 16. 175 m 75 m = 100 m
- 17. Sedimentary
- 18. Adirondack Mountains
- 19. The North Atlantic Drift
- 20. It is cooled by the peru Current.
- 21. Falkland Current
- 22. West
- 23. A Spreading Boundary
- 24. San Andreas Fault.
- 25. India is colliding with the continent of Asia.
- 26. Yellowstone (In Wyoming)
- 27 Deposition
- 28. Pebbles
- 29. Gabbro has larger crystals (It is coarser grained.)
- 30. Plagioclase Feldspar
- 31. About 300 cm/s
- 32. Plagioclase, Pyroxene, Biotite, Amphibole and Olivine
- 33. Quartz, Feldspar and Clay
- 34. Shale
- 35. Halite
- 36. Mica
- 37. Nonfoliated

| R        | eview At Your Finger Tip  | s N  | ame                                  |   |
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| 1.       | How wide is this sheet of paper, to the nearest 0.1 cm?   |  | in mete                              | ers?  |
| 2.       | Which of the radioactive substances listed on this page   | has the shortes                              | t half life?                         |   |
| 3.       | Write the half life of Uranium-238 as a standard number   | er   |                                      |   |
| 4.       | If you started with 100 g of K-40, how much would ren   | nain k-40 after                              | 3.9 x 10 <sup>9</sup> years          | ?   |
| 5.       | What common substance requires the most energy to he  | eat up a unit ma                             | ass by 10°C? _                       |   |
| 6.       | Which uses more energy, melting a 10 g ice cube or eva  | porating 10 g                                | of water?                            |   |
| 7.       | If I estimated a rock to have a volume of 20 cm <sup>3</sup> , but car<br>measurement showed it's true volume to be 25 cm <sup>3</sup> , w<br>would be the percent deviation of my estimate?  |  |                                      |   |
|          | (Please show you work for items $5 \nearrow $ and $6 \nearrow$ .)   |  |                                      |   |
| Do       | ge 2  | 3. What is the average gradient from A to B? | Camp Hill 400 X A Cave Creek         | B 300  Blevations in meters                   |
|          | . In what landscape region do you live?   |  |                                      |   |
|          | What is the landscape region around Old Forge, NY?  |  |                                      |   |
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| 12.      | If you want to drive from Albany to Buffalo, what direct  | tion must you t                              | ravel?                               |   |
| 13.      | What are the approximate terrestrial coordinates of Water   | ertown, NY?                                  |                                      |   |

| 14. | What is the numerical age of the bedrock around Syracuse, NY?   |                                     |
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| 23. | What kind of plate boundary is the Mid-Atlantic Ridge?  | Transform, Spreading or Subduction  |
| 24. | What is the major active fault in the Western United States??   |                                     |
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|     | Himalayan Mountains, north of India?  |                                     |
| 26. | Where is the nearest major mantle hot spot/plume?   |                                     |
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| 27. | What is the final step in the formation of sediment?  |                                     |
| 28. | What do we call sediment composed of particles 1 cm across?   |                                     |
| 29. | How does gabbro differ from basalt?   |                                     |
| 30. | What is the most abundant mineral in diorite?   |                                     |
| 31. | How fast a stream current is required to transport the smallest boul  | ders?                               |
| 32. | What five minerals are common in basalt?  |                                     |

At Your Finger Tips Page 2 Non, May 27, 2002 TROUBLE W/ A TABLE SEE http://homercentral.org/hs/Science/ref.html FOR TABLE EXPLANATIONS

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| 52.      | What element makes up about 6% of crustal rocks by mass, but only ½% by volume?         |              |
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| 54.      | If the wet bulb reads 4°C and the dry bulb records 12°C, what is the dewpoint?          |              |
| 55.      | What is the relative humidity in the conditions specified above?                        |              |
| 56.      | What does a negative dewpoint mean?   |              |
| Page     | s 13  | X000000000   |
| 57.      | What is the Kelvin temperature of 0° C? What is this temperature in Fahrenheit?         |              |
| 58.      | What is the normal atmospheric pressure in inches of mercury?                           |              |
| <u> </u> | 59. What is the Fahrenheit temperature at this weather station? Celsius?                |              |
| 50       | 60. What is the atmospheric pressure? Is it rising or falling?                          |              |
|          | 61. Wind speed? Wind direction? Cloud Cover?  |              |
|          | A maritime tropical air mass is and (You should know this                               | s.)          |
| Page     | es 14   | entrenti:    |
| 63.      | How does the air temperature change as you go higher within the mesosphere?             |              |
| 64.      | What name has been given to the boundary at the bottom of the atmosphere?               |              |
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