FOR TEACHERS ONLY

The University of the State of New York
REGENTS HIGH SCHOOL EXAMINATION

PS–ES PHYSICAL SETTING/EARTH SCIENCE

Tuesday, August 17, 2004 — 12:30 to 3:30 p.m., only

SCORING KEY AND RATING GUIDE

Directions to the Teacher:

Refer to the directions on page 3 before rating student papers.

Updated information regarding the rating of this examination may be posted on the New York State Education Department's web site during the rating period. Visit the site http://www.emsc.nysed.gov/osa/ and select the link "Latest Information" for any recently posted information regarding this examination. This site should be checked before the rating process for this examination begins and at least one more time before the final scores for the examination are recorded.

Part A and Part B–1
Allow 1 credit for each correct response.

Part A

1 . . . . . **3**	13 . . . . . **3**	25 . . . . **3**
2 . . . . . **4**	14 . . . . . **3**	26 . . . . **4**
3 . . . . . **3**	15 . . . . . **3**	27 . . . . **2**
4 . . . . . **3**	16 . . . . . **1**	28 . . . . **4**
5 . . . . . **4**	17 . . . . . **2**	29 . . . . **1**
6 . . . . . **2**	18 . . . . . **1**	30 . . . . **3**
7 . . . . . **1**	19 . . . . . **3**	31 . . . . **2**
8 . . . . . **1**	20 . . . . . **4**	32 . . . . **2**
9 . . . . . **4**	21 . . . . . **2**	33 . . . . **1**
10 . . . . . **2**	22 . . . . . **4**	34 . . . . **3**
11 . . . . . **1**	23 . . . . . **2**	35 . . . . **2**
12 . . . . . **4**	24 . . . . . **1**	

Part B–1

36 . . . . **1**	44 . . . . **3**
37 . . . . **3**	45 . . . . **2**
38 . . . . **4**	46 . . . . **4**
39 . . . . **3**	47 . . . . **1**
40 . . . . **1**	48 . . . . **1**
41 . . . . **1**	49 . . . . **3**
42 . . . . **4**	50 . . . . **3**
43 . . . . **2**	

Directions to the Teacher

Follow the procedures below for scoring student answer papers for the Physical Setting/Earth Science examination. Additional information about scoring is provided in the publication *Information Booklet for Administering and Scoring Regents Examinations in the Sciences*.

Use only *red* ink or *red* pencil in rating Regents papers. Do *not* correct the student's work by making insertions or changes of any kind.

On the detachable answer sheet for Part A and Part B–1, indicate by means of a checkmark each incorrect or omitted answer. In the box provided at the end of each part, record the number of questions the student answered correctly for that part.

At least two science teachers must participate in the scoring of each student's responses to the Part B–2 and Part C open-ended questions. Each of these teachers should be responsible for scoring a selected number of the open-ended questions on each answer paper. No one teacher is to score all the open-ended questions on a student's answer paper.

Students' responses must be scored strictly according to the Scoring Key and Rating Guide. For open-ended questions, credit may be allowed for responses other than those given in the rating guide if the response is a scientifically accurate answer to the question and demonstrates adequate knowledge as indicated by the examples in the rating guide. In the student's answer booklet, record the number of credits earned for each answer in the box printed to the right of the answer lines or spaces for that question.

Fractional credit is *not* allowed. Only whole-number credit may be given to a response. Units need not be given when the wording of the questions allows such omissions.

Raters should enter the scores earned for Part A, Part B–1, Part B–2, and Part C on the appropriate lines in the box printed on the answer booklet and then should add these four scores and enter the total in the box labeled "Total Written Test Score." The student's score for the Earth Science Performance Test should be entered in the space provided. Then, the student's raw scores on the performance test and written test should be converted to a scaled score by using the conversion chart that will be posted on the Department's web site http://www.emsc.nysed.gov/osa/ on Tuesday, August 17, 2004. The student's scaled score should be entered in the labeled box on the student's answer booklet. The scaled score is the student's final examination score.

All student answer papers that receive a scaled score of 60 through 64 **must** be scored a second time. For the second scoring, a different committee of teachers may score the student's paper or the original committee may score the paper, except that no teacher may score the same open-ended questions that he/she scored in the first rating of the paper. The school principal is responsible for assuring that the student's final examination score is based on a fair, accurate, and reliable scoring of the student's answer paper.

Because scaled scores corresponding to raw scores in the conversion chart may change from one examination to another, it is crucial that for each administration, the conversion chart provided in the scoring key for that administration be used to determine the student's final score. The chart in this scoring key is usable only for this administration of the examination.

Part B–2

Allow a total of 15 credits for this part. The student must answer all questions in this part.

51 [1] Allow 1 credit for an **occluded** front.

52 [2] The correct responses are shown below.

Weather Data Table for Albany

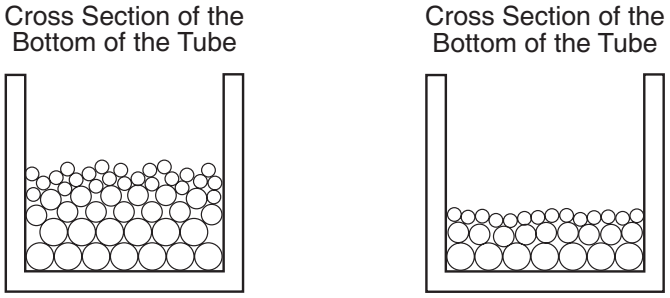
Relative humidity (%)	**100**
Wind direction from	**NNW** or **NW** or in words
Wind speed (knots)	**25** (±2)
Present weather	**Rain**

Allow 2 credits if all four weather variables are correct.

Allow only 1 credit if only two or three weather variables are correct.

Note: Do *not* allow credit for "precipitation" as the response to present weather because it is too general.

53 [1] Allow 1 credit for a correct response that shows a pattern of sorting from large on the bottom to small on top. Grains do *not* have to be drawn to actual size. The student drawing does *not* have to completely fill the cross section either vertically or horizontally. Acceptable responses include, but are not limited to, these examples:



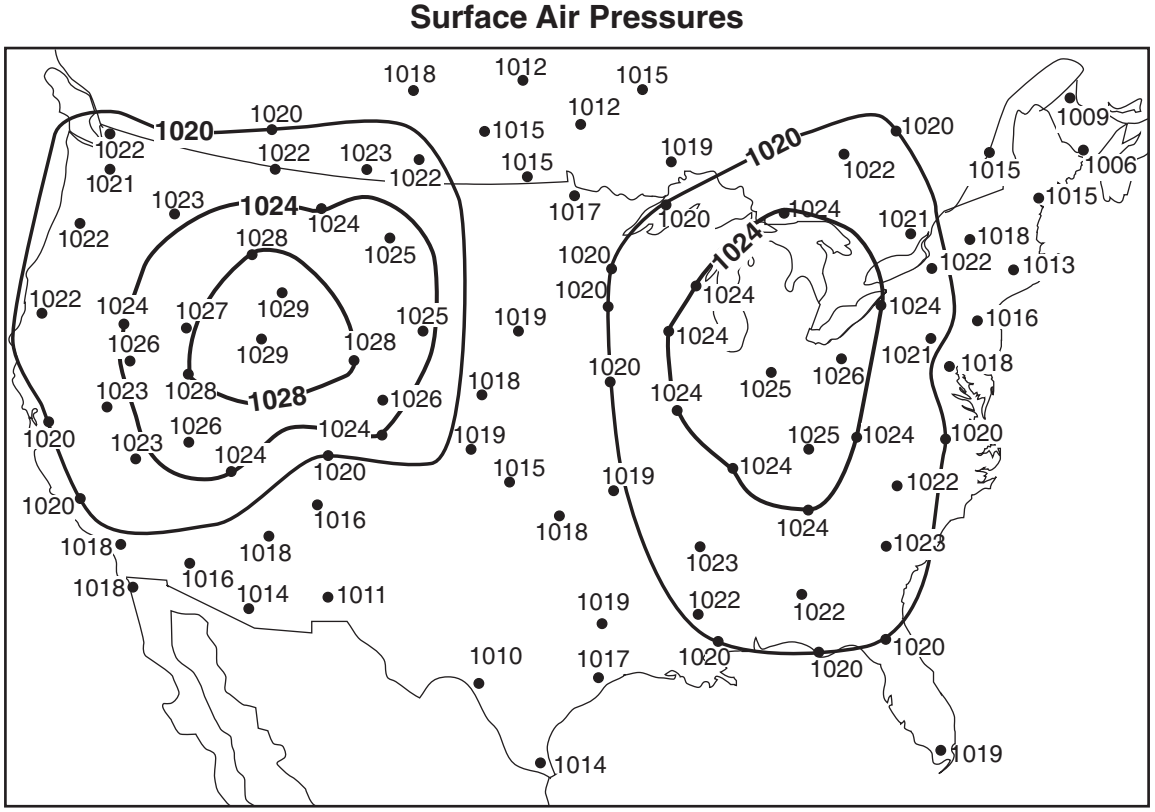
54 [1] Allow 1 credit for a correct response. Acceptable responses include, but are not limited to, these examples:

The 2-millimeter grains settle farther downstream than the 4-millimeter grains.

The 2-millimeter grains settle farther to the right.

The larger grains are not carried as far.

55 [2] An example of correctly drawn isobars is shown below.



Allow 2 credits if all three isobars are drawn correctly. If more than the three required isobars are drawn, *all* isobars must be correct for full credit.

Allow only 1 credit if only one or two isobars are drawn correctly.

or

Allow only 1 credit if more than the three required isobars are drawn, and the three required isobars are drawn correctly but the additional isobars are drawn incorrectly.

Note: Isobars do *not* have to be labeled. Isobars must touch all equal value points to receive credit.

56 [1] Allow 1 credit for **barometer** or **barograph**.

57 [1] Allow 1 credit for the correct response shown below.

Oldest

Youngest

(1) **siltstone**

(2) **limestone**

(3) **granite intrusion** or **granite** or **intrusion**

(4) **shale**

(5) **vesicular basalt** or **basalt**

(6) **sandstone**

58 [1] Allow 1 credit for **Permian**.

59 [1] Allow 1 credit for **marble** or **hornfels**.

60 [1] Allow 1 credit for a correct response. Acceptable responses include, but are not limited to, these examples:

fast rate

rapid cooling

61 [1] Allow 1 credit for two correct responses. Acceptable responses include, but are not limited to, these examples:

hardness

chemical composition

dominant form of breakage or fracture/cleavage

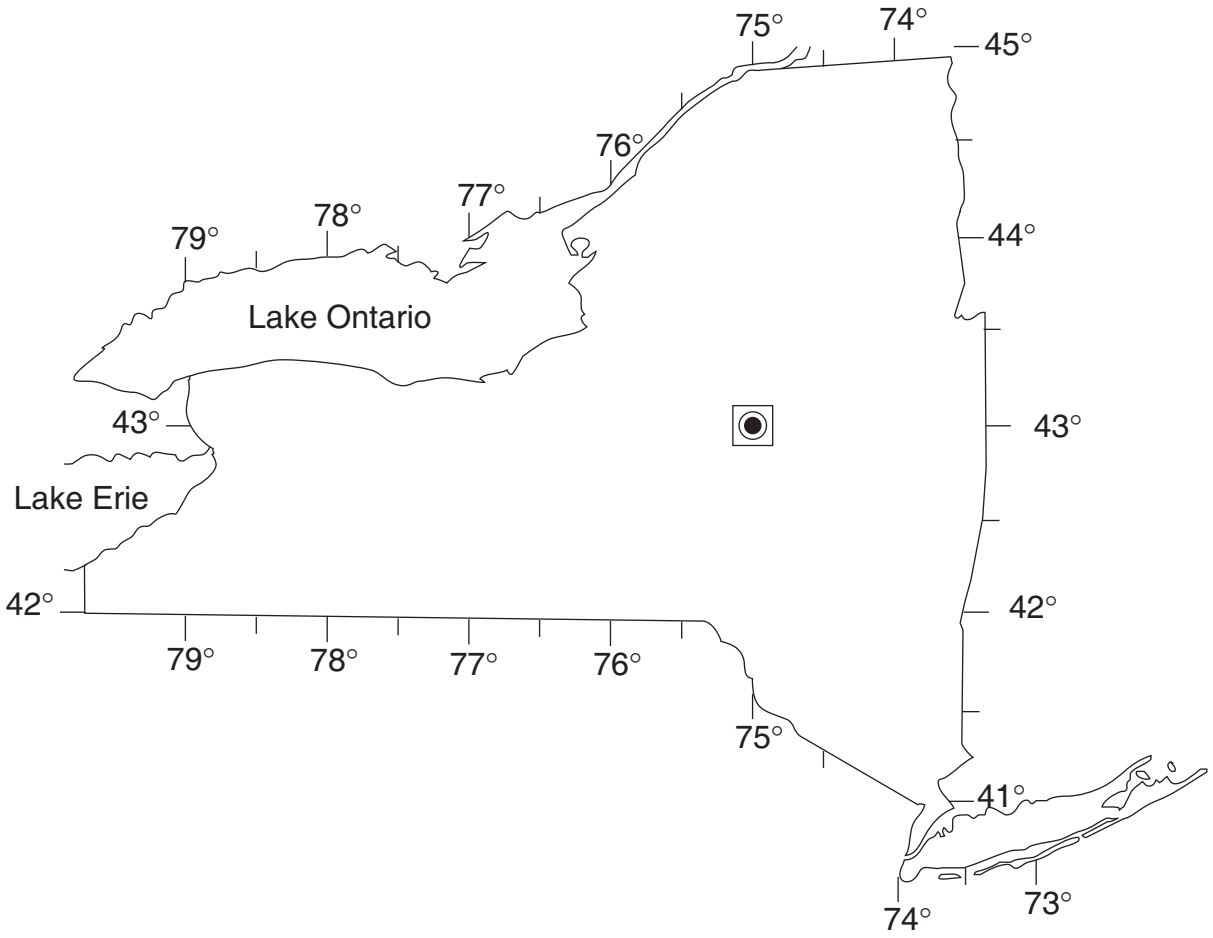
62 [1] Allow 1 credit for a correct response. Acceptable responses include, but are not limited to, these examples:

production of glass

electronics

as an abrasive

63 [1] Allow 1 credit for the location of the dot within the box shown on the map. Allow credit even if a circle is not drawn around the dot.

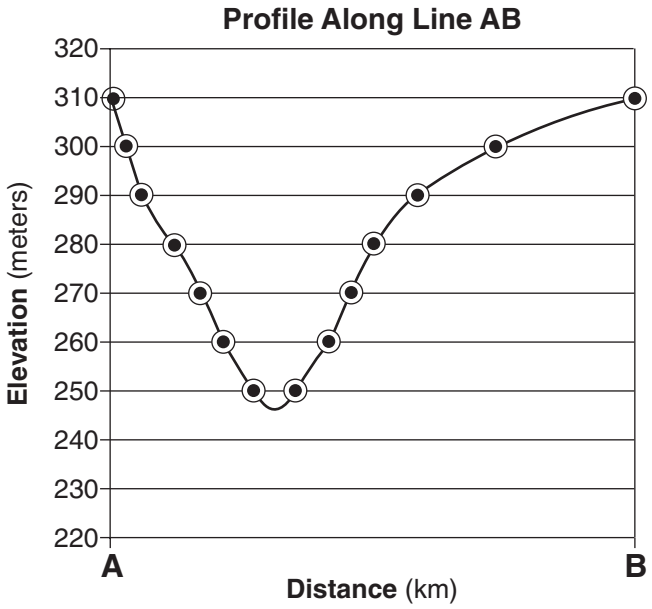


Note: It is recommended that an overlay be used to ensure uniformity in scoring.

Part C

Allow a total of 20 credits for this part. The student must answer all questions in this part.

64 [2] The correct responses are shown below.



Allow 2 credits if 12 to 14 points are plotted correctly and are correctly connected with a smooth, curved line and the line extends below the lowest plotted points to show the valley.

Allow only 1 credit if 12 to 14 points are plotted correctly, but no line is drawn or the line is incorrectly drawn.

or

Allow only 1 credit if only 7 to 11 points are plotted correctly and are correctly connected with a smooth, curved line and the line extends below the lowest plotted points to show the valley.

Note: The center of the plotted point must be on the horizontal line within the circle shown.

Allow credit even if the points are not visible, but the line is visible within the circle.

Allow credit even if the student uses a symbol other than a dot.

Do *not* allow credit if a straight line is drawn between the lowest plotted points or if the valley extends to the next elevation line or below.

It is recommended that an overlay be used to ensure uniformity in scoring.

65 [2] Allow 1 credit for **27.6** (±2.0).

and

Allow 1 credit for $\frac{\textbf{m}}{\textbf{km}}$ or $\frac{\textbf{meters}}{\textbf{kilometer}}$.

66 [1] Allow 1 credit for **10**°C and **18**°C or **18**°C and **10**°C.

67 [1] Allow 1 credit for a correct response. Acceptable responses include, but are not limited to, these examples:

This region receives a high angle of insolation each day.

High-intensity insolation is received all year.

The Sun is higher in the sky all year.

The tropical region receives more intense sunlight.

Note: Do *not* allow credit for "The region is near the Equator (0° latitude)," or "receives more sunlight" because the response does not describe a specific characteristic of insolation.

68 [2] Allow 1 credit for a correct bedrock characteristic. Acceptable responses include, but are not limited to, these examples:

The Adirondacks have faulted, folded, and deformed bedrock.

The Adirondacks have intensely metamorphosed bedrock.

The oldest bedrock is near the center of the Adirondacks.

and

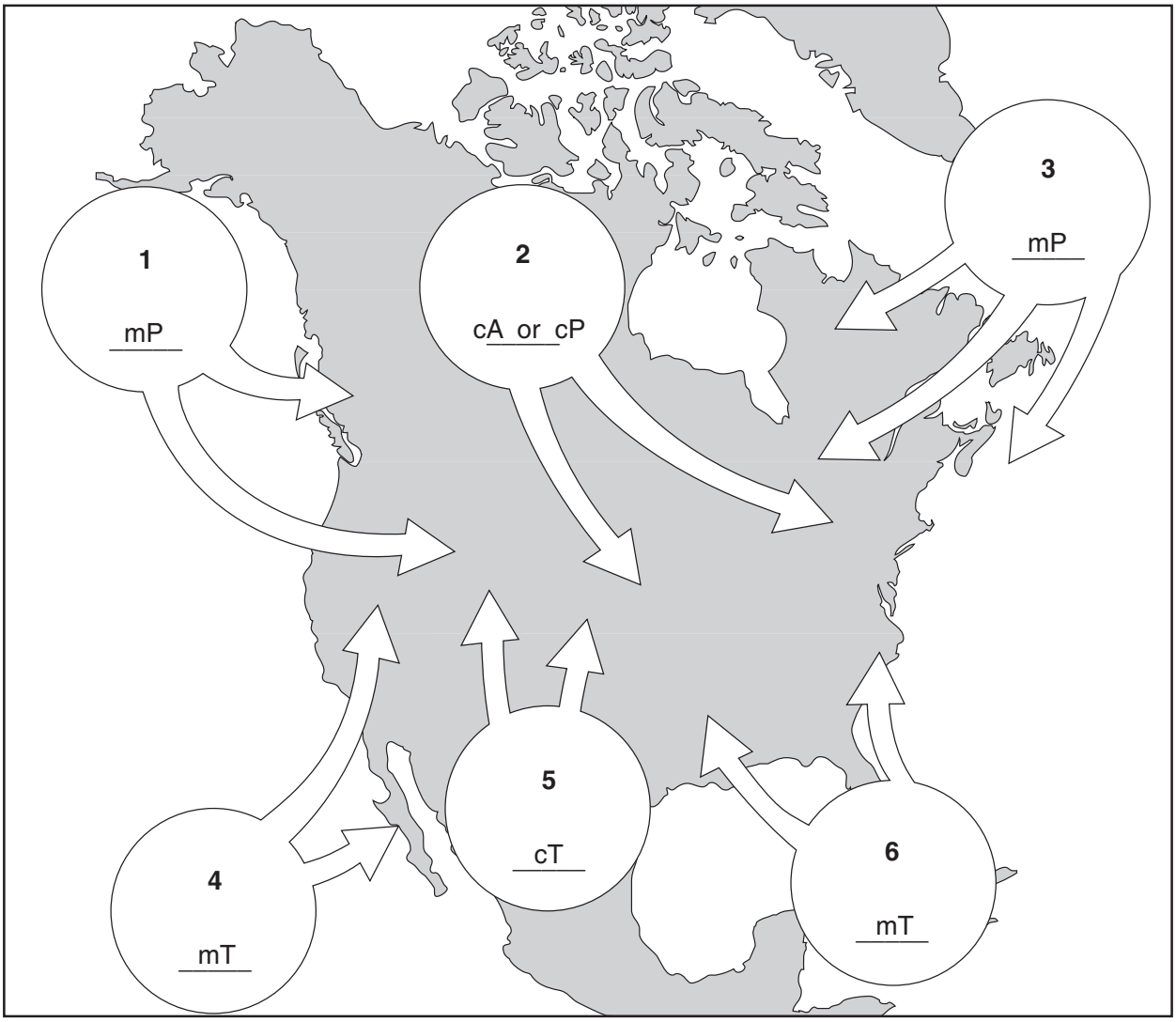
Allow 1 credit for a correct land surface characteristic. Acceptable responses include, but are not limited to, these examples:

The Adirondacks have high elevations.

The Adirondacks have steep slopes.

The Adirondacks are a partially eroded dome.

69 [2] The correct responses are shown below.



Allow 2 credits if five or six air-mass symbols are correct.

Allow only 1 credit if only three or four air-mass symbols are correct.

or

Allow only 1 credit if five or six air masses are correctly labeled with words instead of the two-letter symbol. For example: mT is labeled maritime tropical.

Note: Allow credit for either upper- or lower-case letters because it is difficult to identify some students' lower-case letters. For example, allow credit for MP or Mp or mp or mP. Do *not* allow credit if the letters are reversed.

70 [1] Allow credit for a correct response. Acceptable responses include, but are not limited to, this example:

The Sun appeared to rise earlier each day during May.

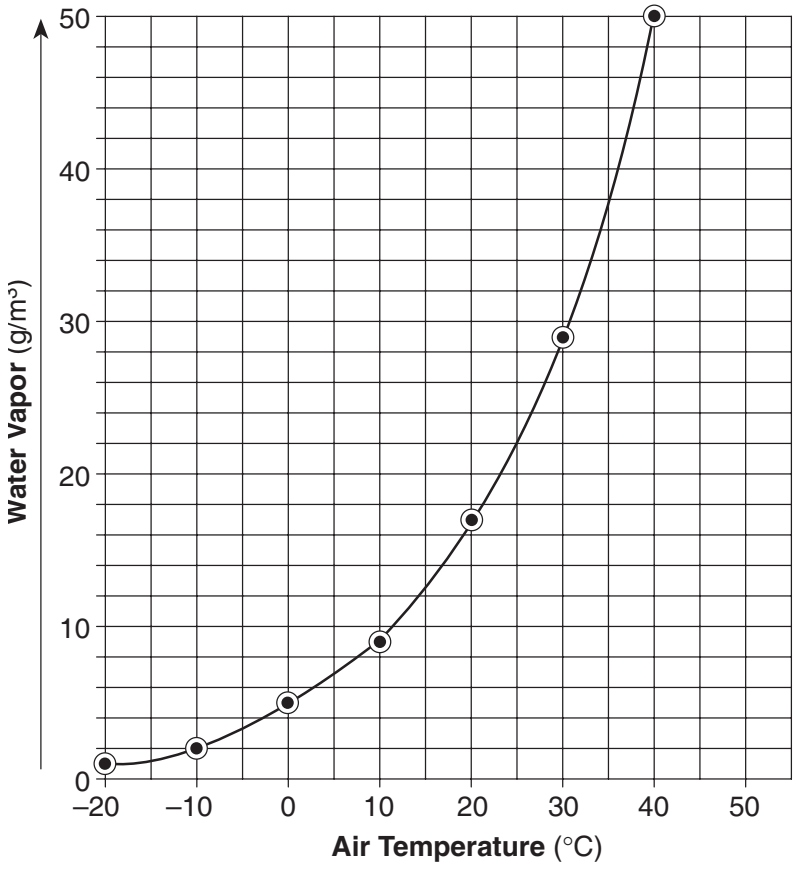
Note: Do *not* allow credit for "The days get longer" because the response does not describe the time of sunrise.

71 [1] Allow 1 credit for a correct response. Acceptable responses include, but are not limited to, these examples:

Earth's rotation

spinning on its axis

72 [3] An example of a correct response is shown below.



a Allow 1 credit for labeling the y-axis **water vapor**, including units **(g/m^3)**.

b Allow 1 credit for marking an appropriate numerical scale along the y-axis.

c Allow 1 credit for correctly plotting six or seven points and connecting them with a line. Allow credit even if the student uses a symbol other than a dot.

Note: Allow credit for a line that passes through six or seven correct points, even if the points are not visible beneath the line.

73 [1] Allow 1 credit for a correct response. Acceptable responses include, but are not limited to, these examples:

As air temperature increases, the amount of water vapor that the air can hold increases.

Warm air can hold more water vapor than cool air.

It is a direct relationship.

The higher the air temperature, the greater the amount of water vapor required to saturate the air.

74 [1] Allow 1 credit for a correct response. Acceptable responses include, but are not limited to, these examples:

Continent shapes fit together like puzzle parts.

Sea-floor spreading occurs at mid-ocean ridges.

Bedrock can be correlated on the opposite sides of some oceans.

Fossil evidence is found in the matching bedrock of South America and Africa.

matching mountain ranges between continents

75 [1] Allow 1 credit for a correct response. Acceptable responses include, but are not limited to, these examples:

west coast of South America

Aleutian Trench

boundary of Juan de Fuca Plate and North American Plate

76 [1] Allow 1 credit for any response from 70 to 700 kilometers.

77 [1] Allow 1 credit for **Triassic** Period.

The *Chart for Determining the Final Examination Score for the August 2004 Regents Examination in Physical Setting/Earth Science* will be posted on the Department's web site http://www.emsc.nysed.gov/osa/ on Tuesday, August 17, 2004. Conversion charts provided for previous administrations of the Regents Examination in Physical Setting/Earth Science must NOT be used to determine students' final scores for this administration.

August 2004 Physical Setting/Earth Science			
Question Numbers			
Key Ideas/Performance Indicators	Part A	Part B	Part C
Standard 1			
Math Key Idea 1	4,5		65
Math Key Idea 2	8,25,26,34	37,41,55, 58,63	64,72,73
Math Key Idea 3			
Sci. Inq. Key Idea 1		44,49,53,57	67,73,74
Sci. Inq. Key Idea 2			
Sci. Inq. Key Idea 3			
Eng. Des. Key Idea 1		56	
Standard 2			
Key Idea 1			
Key Idea 2			
Key Idea 3			
Standard 6			
Key Idea 1			68, 69
Key Idea 2	2,5,6,9,11, 13,15,16,17, 21,22,23,27	36,37,54	66,72,76,77
Key Idea 3	3,5,11,25		
Key Idea 4	18		
Key Idea 5	6,12,23	38,39,40,41, 42,45,46,49, 54,59,60	70,71
Key Idea 6			
Standard 7			
Key Idea 1			
Key Idea 2			
Standard 4			
Performance Indicator 1	1,2,3,4,5,6,7, 8,9,10,13,24, 26,30,32,33	37,39,40, 41,57,58	70,71
Performance Indicator 2	11,12,14,15,16, 17,18,23,25,27 28,29,31,35	36,38,42,44,45, 46,47,48,49,51, 52,53,54,55,56	64,65,66,67, 68,69,72,73, 74,75,76,77
Performance Indicator 3	19,20,21,22	48,59,60,61,62	
Reference Tables			
ESRT 2001 Edition	3,4,5,11,13,17, 21,22,23,25,29, 30,31,33,34	43,47,48,49,51, 52,58,59,60,62	68,69,75,76,77