

FOR TEACHERS ONLY

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

PS-ES PHYSICAL SETTING/EARTH SCIENCE

Thursday, August 16, 2007 — 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. Check this web site <http://www.emsc.nysed.gov/osa/> and select the link "Examination Scoring Information" for any recently posted information regarding this examination. This site should be checked before the rating process for this examination begins and several times throughout the Regents examination period.

Part A and Part B-1

Allow 1 credit for each correct response.

Part A			Part B-1	
1 1	13 1	25 2	36 2	44 4
2 1	14 2	26 2	37 1	45 3
3 2	15 1	27 3	38 1	46 1
4 1	16 1	28 4	39 2	47 4
5 4	17 4	29 4	40 4	48 3
6 4	18 3	30 2	41 4	49 1
7 3	19 4	31 3	42 1	50 3
8 4	20 2	32 4	43 4	
9 1	21 3	33 4		
10 3	22 2	34 3		
11 2	23 1	35 1		
12 2	24 1			

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 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 check mark 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 Thursday, August 16, 2007. 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 for that administration be used to determine the student's final score.

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. Acceptable responses include, but are not limited to:

- The crusts have a silicate composition.
- The crusts contain the elements oxygen and silicon.

52 [1] Allow 1 credit for *both* Mercury *and* Mars.

53 [1] Allow 1 credit. Acceptable responses include, but are not limited to:

- The terrestrial planets are rocky and composed of heavier elements.
- The terrestrial planets are closer to the Sun.
- The Jovian planets are not rocky and are composed of lighter elements.

54 [1] Allow 1 credit for 1020.1 mb.

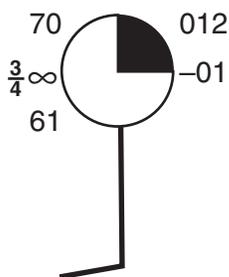
55 [1] Allow 1 credit. Acceptable responses include, but are not limited to:

- The air temperature is closest to the dewpoint in Utica.
- The air pressure in Utica is lowest.
- The amount of cloud cover is 100% in Utica.
- The relative humidity is highest in Utica.
- Air pressure is decreasing in Utica.

56 [2] Allow 2 credits allocated as follows:

- Allow 2 credits if three or four variables are placed in their proper locations and in the correct format.
- Allow 1 credit if only two variables are placed in their proper locations and in the correct format.

Example of a 2-credit response:



Note: The feather for the wind speed may be placed on either side of the staff.

57 [1] Allow 1 credit for 10°C to 15°C.

58 [1] Allow 1 credit. Acceptable responses include, but are not limited to:

- City X is located farther inland from the ocean.
- City Y is located closer to a large body of water.

59 [1] Allow 1 credit. Acceptable responses include, but are not limited to:

- Both cities have their highest temperatures in June, July, and August.

60 [1] Allow 1 credit for sandstone.

61 [1] Allow 1 credit for gneiss.

62 [1] Allow 1 credit for a correct description of *two* or more characteristics. Acceptable responses include, but are not limited to:

Characteristic of Granite	Description
Texture	coarse nonvesicular 1 mm to 10 mm
Color	light colored white pink gray
Density	low 2.7 g/cm ³

63 [1] Allow 1 credit. Acceptable responses include, but are not limited to:

- subduction
- convergence

64 [1] Allow 1 credit. Acceptable responses include, but are not limited to:

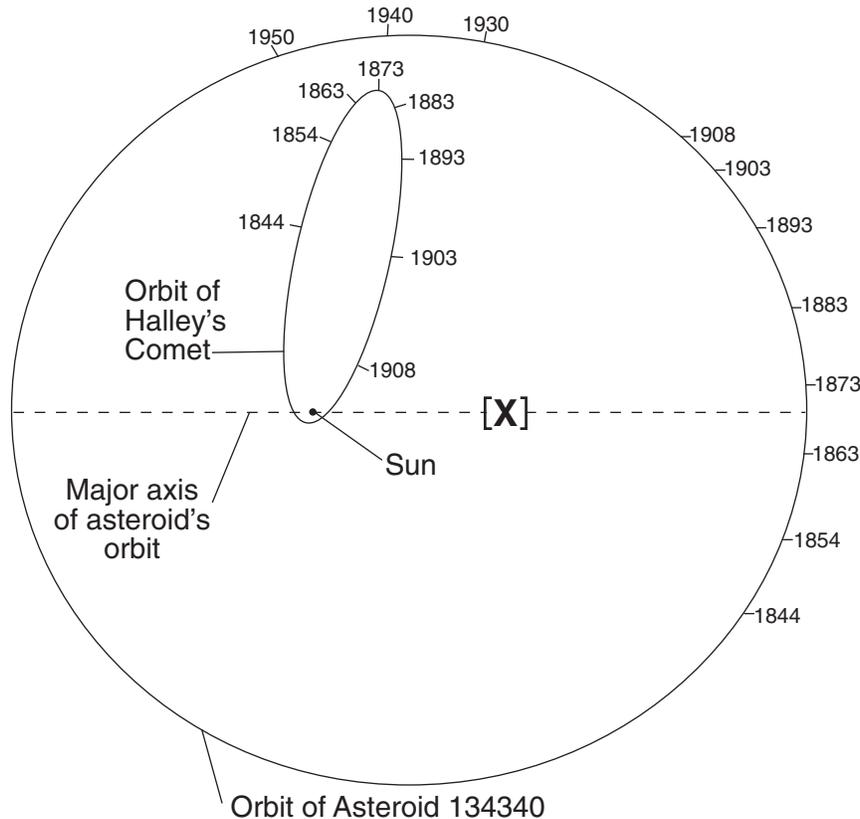
- transform movement
- faulting
- The plates slide past each other.

Part C

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

65 [1] Allow 1 credit if the center of the student's **X** is within the bracket shown below.

Example of a 1-credit response:



66 [1] Allow 1 credit for Halley's Comet and an acceptable reason. Acceptable reasons include, but are not limited to:

- The comet traveled a greater distance during that time.
- Halley's orbit is closer to the Sun.

67 [1] Allow 1 credit. Acceptable responses include, but are not limited to:

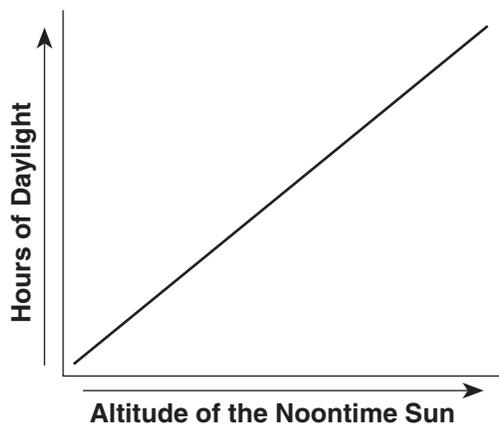
- Halley's Comet orbits the Sun.

68 [2] Allow 2 credits, allocated as follows:

- Allow 1 credit for any value from 2.8 to 3.2.
- Allow 1 credit for the correct units. Acceptable units include, but are not limited to:
 - mb/h
 - millibars/hour

- 69 [1] Allow 1 credit. Acceptable responses include, but are not limited to:
- passage of a low-pressure system
 - passage of a cold front
 - arrival of a warm air mass followed by the arrival of a cold air mass
- 70 [1] Allow 1 credit for any response from 490 to 443 million years.
- 71 [1] Allow 1 credit. Acceptable responses include, but are not limited to:
- The channel at A has a V-shape.
 - Running water produces V-shaped channels.
- 72 [1] Allow 1 credit for the correct order below:
1. till
 2. stratified drift
 3. clay and silt
 4. wind-blown sand
- 73 [1] Allow 1 credit. Acceptable responses include, but are not limited to:
- Glacial deposits are unsorted.
 - Till is a direct ice deposit.
- 74 [1] Allow 1 credit. Acceptable responses include, but are not limited to:
- The gentle slope of the dune is on the southwest side.
 - The windward side has a less steep slope.
 - The steeper side is leeward.
- 75 [1] Allow 1 credit for a line on the graph showing that, as the altitude of the noontime Sun increases, the hours of daylight increase.

Example of a 1-credit response:

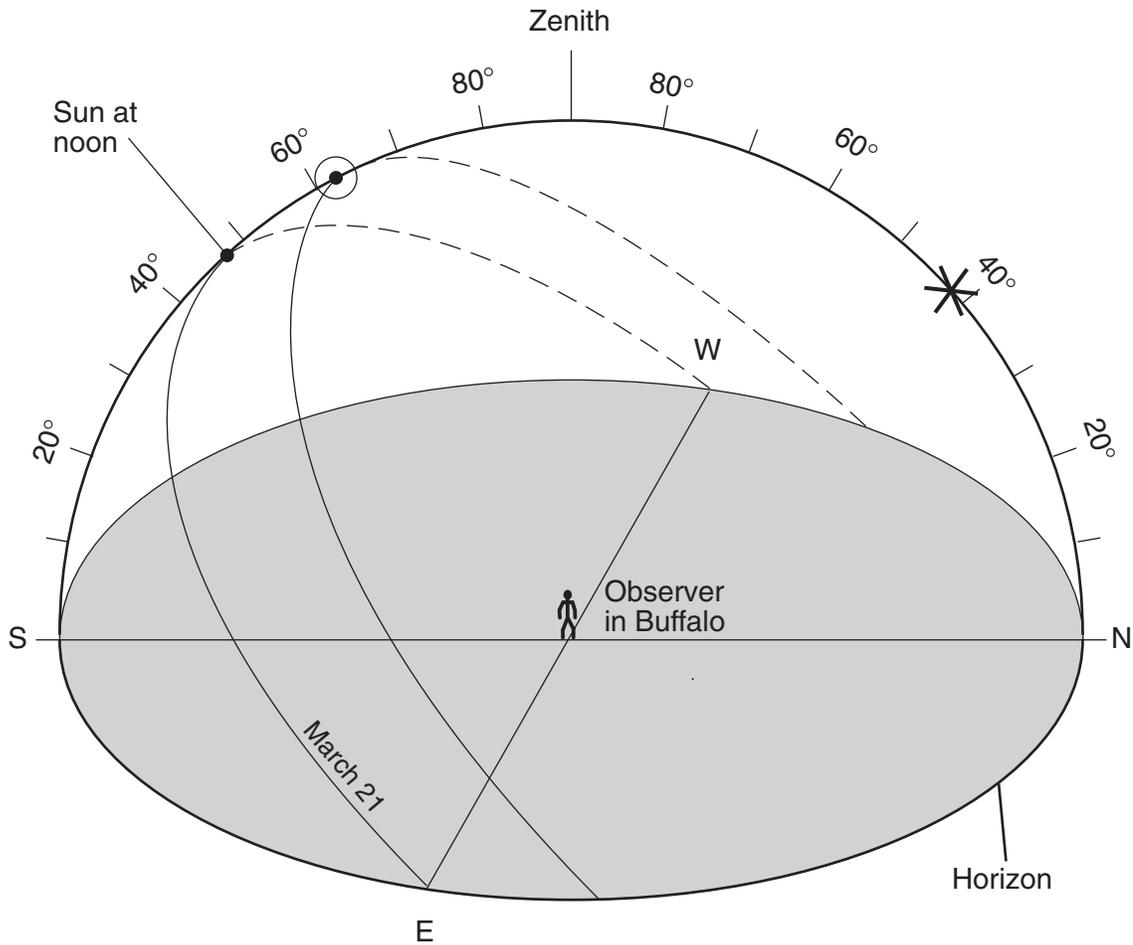


76 [2] Allow a maximum of 2 credits, allocated as follows:

- Allow 1 credit if the Sun's apparent path is drawn so the altitude of the Sun at noon is within the circle shown below.
- Allow 1 credit for a path that starts north of east on the horizon and ends north of west on the horizon.

77 [1] Allow 1 credit if the center of the asterisk is between 40° and 45° .

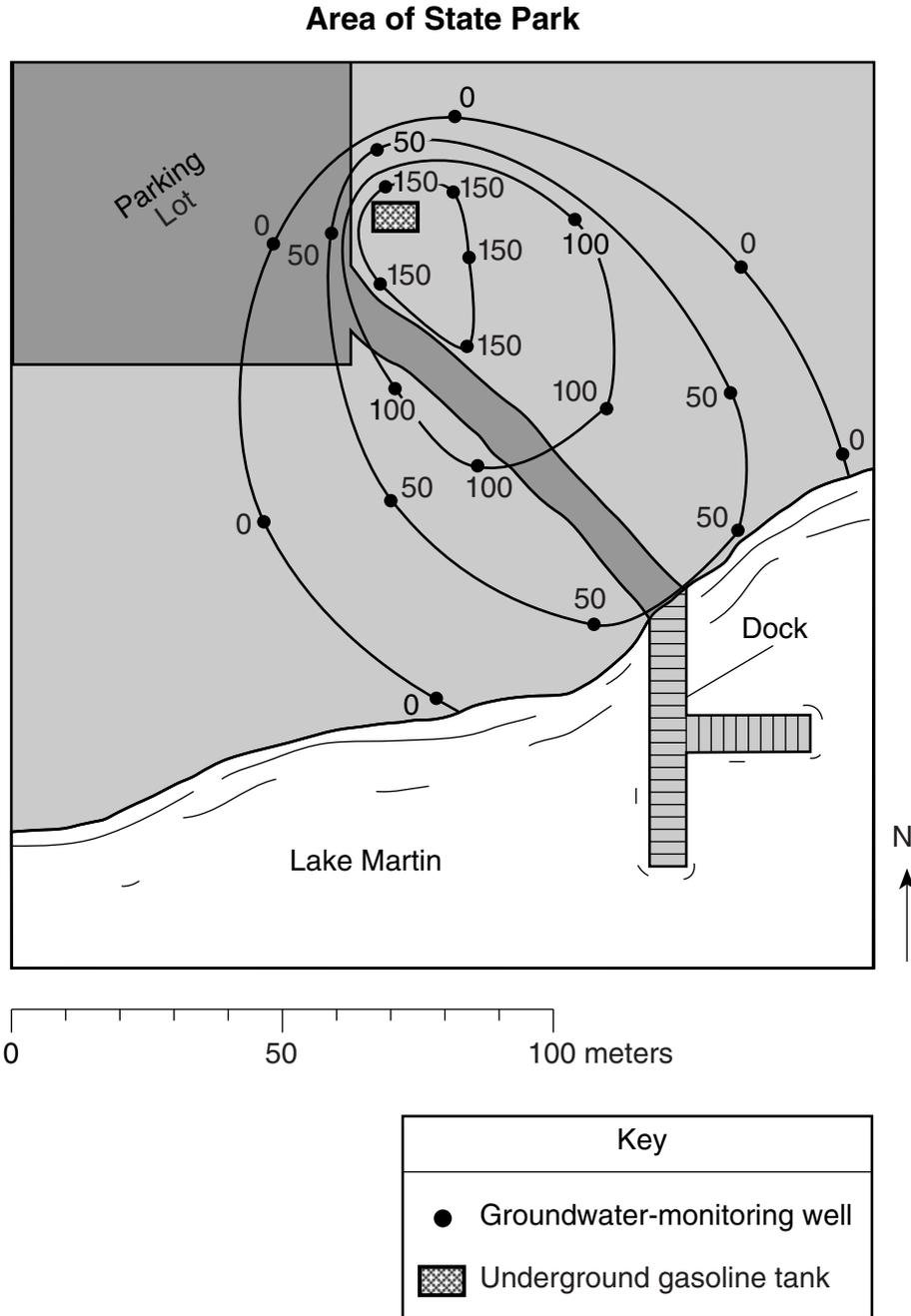
Example of a 3-credit response for questions 76 and 77:



78 [1] Allow 1 credit for *three* correctly drawn isolines.

Note: If the student draws additional isolines, all must be correct to receive credit. Allow credit even if the isolines extend into Lake Martin.

Example of a 1-credit response:



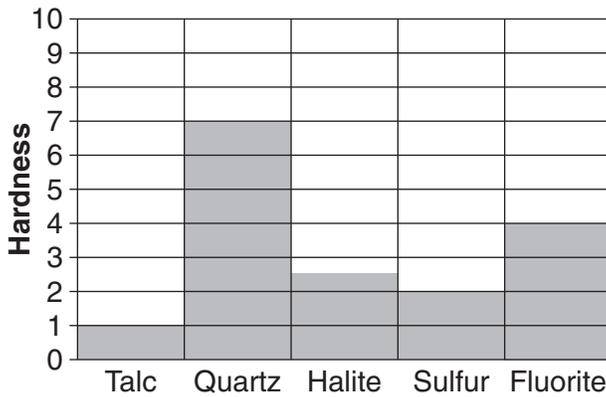
79 [1] Allow 1 credit. Acceptable responses include, but are not limited to:

- As distance from the tank increases, the concentration of contaminants in the groundwater decreases.
- An inverse relationship exists between the distance from the tank and the concentration of contaminants in the groundwater.

80 [1] Allow 1 credit. Acceptable responses include, but are not limited to:

- Place the tank above ground to observe leaks more easily.
- Build an extra liner around the tank.
- Replace tanks regularly.

81 [1] Allow 1 credit if all *five* bars are correctly drawn.



82 [1] Allow 1 credit for quartz and an acceptable reason. Acceptable reasons include, but are not limited to:

- hardest mineral shown
- hardness of 7
- Quartz has the same hardness as garnet, which is used as an abrasive.

Map to Core Curriculum

August 2007 Physical Setting/Earth Science			
Question Numbers			
Key Ideas/Performance Indicators	Part A	Part B	Part C
Standard 1			
Math Key Idea 1			65, 68
Math Key Idea 2	4, 26, 34	57	66, 75, 81
Math Key Idea 3	39		65, 79
Science Inquiry Key Idea 1	14, 23, 27, 29, 35	50, 53, 58	67, 69, 71
Science Inquiry Key Idea 2	16		
Science Inquiry Key Idea 3	5		
Engineering Design Key Idea 1			
Standard 2			
Key Idea 1		55	
Key Idea 2			
Key Idea 3			
Standard 6			
Key Idea 1	18, 20, 26, 30, 35	47, 55	73, 70
Key Idea 2	4, 8, 9, 17, 19, 21, 22, 24, 25, 28, 32, 35	36, 37, 38, 39, 40, 41, 42, 43, 44, 45, 49, 51, 52, 54, 56, 60, 61, 62, 63, 64	65, 66, 67, 68, 71, 72, 74, 76, 77, 78, 81
Key Idea 3	32		65, 66
Key Idea 4			
Key Idea 5	1, 3, 15, 23, 24, 25, 31, 33, 34	36, 38, 39, 41, 48, 49, 55, 58, 59	69, 74, 76, 78, 79, 82
Key Idea 6			
Standard 7			
Key Idea 1			
Key Idea 2			80
Standard 4			
Key Idea 1	1, 2, 3, 4, 5, 6, 9, 13, 16, 29, 32, 33, 34	42, 43, 44, 47, 48, 49, 51, 53, 57, 58	65, 66, 67, 70, 72, 75, 76, 77, 78, 79, 80
Key Idea 2	7, 8, 10, 11, 12, 14, 15, 17, 18, 23, 24, 25, 26, 27, 28, 30, 31, 35	36, 37, 38, 39, 40, 41, 44, 45, 52, 54, 55, 56, 57, 58, 59, 63, 64	68, 69, 71, 73, 74, 78, 79, 80
Key Idea 3	19, 20, 21, 22	50, 51, 60, 61, 62	81, 82
Reference Tables			
ESRT 2001 Edition	5, 7, 12, 13, 17, 20, 21, 22, 23, 26, 27, 28, 29, 30, 31, 32, 33	37, 38, 39, 54, 55, 56, 60, 61, 62, 63	65, 68, 70, 77, 81, 82

Regents Examination in Physical Setting/Earth Science

August 2007

Chart for Converting Total Test Raw Scores to Final Examination Scores (Scaled Scores)

The *Chart for Determining the Final Examination Score for the August 2007 Regents Examination in Physical Setting/Earth Science* will be posted on the Department's web site <http://www.emsc.nysed.gov/osa/> on Thursday, August 16, 2007. 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.

Submitting On-line Teacher Evaluations of the Test to the Department

Suggestions and feedback from teachers provide an important contribution to the test development process. The Department provides an on-line evaluation form for State assessments. It contains spaces for teachers to respond to several specific questions and to make suggestions. Instructions for completing the evaluation form are as follows:

1. Go to www.emsc.nysed.gov/osa/exameval.
2. Select the test title.
3. Complete the required demographic fields.
4. Complete each evaluation question and provide comments in the space provided.
5. Click the SUBMIT button at the bottom of the page to submit the completed form.