

FOR TEACHERS ONLY

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

PS-ES PHYSICAL SETTING/EARTH SCIENCE

Wednesday, January 26, 2011 — 9:15 a.m. to 12:15 p.m., only

SCORING KEY AND RATING GUIDE

Directions to the Teacher:

Refer to the directions on page 2 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.p12.nysed.gov/osa/> and select the link "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 4	25 4	36 1	44 2
2 2	14 4	26 1	37 3	45 3
3 3	15 3	27 3	38 2	46 3
4 3	16 3	28 1	39 4	47 4
5 1	17 4	29 1	40 2	48 3
6 1	18 4	30 4	41 2	49 1
7 2	19 3	31 2	42 1	50 1
8 3	20 1	32 2	43 1	
9 3	21 3	33 3		
10 4	22 2	34 4		
11 2	23 3	35 3		
12 3	24 3			

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.

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 scale score by using the conversion chart that will be posted on the Department's web site <http://www.p12.nysed.gov/osa/> on Wednesday, January 26, 2011. The student's scale score should be entered in the labeled box on the student's answer booklet. The scale score is the student's final examination score. On the front of the student's answer booklet, raters must enter their initials on the lines next to "Rater 1" or "Rater 2."

All student answer papers that receive a scale 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 scale 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 maximum of 15 credits for this part.

51 [1] Allow 1 credit if *all four* letters are correct.

Season	Earth's Position
spring	A
summer	C
fall	E
winter	G

52 [1] Allow 1 credit for any value from 88 to 94 d.

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

- From point *A* to point *B*, the age of the surface bedrock decreases and from *B* to *C*, the age of the surface bedrock increases.
- The surface bedrock at point *B* is younger than the surface bedrock at point *A* and point *C*.
- gets younger, then older

54 [1] Allow 1 credit for Cenozoic Era.

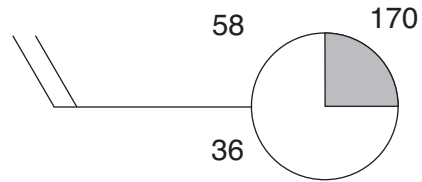
55 [1] Allow 1 credit for basalt *or* vesicular basalt *or* diabase.

56 [1] Allow 1 credit for North American Plate *and* Eurasian Plate.

57 [1] Allow 1 credit. Acceptable responses include, but are not limited to:

- hot spot
- rising convection currents
- magma chamber
- rising magma

58 [1] Allow 1 credit if *all six* weather conditions are correctly located and in the proper format.



Note: Accept *any* quadrant for 1/4 shading to represent sky conditions. Allow credit for two whole feathers on *either* side of the staff.

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

- Temperature and dewpoint values are far apart.
- Relative humidity is very low.
- Cloud cover is only 25%.
- Air pressure of 1017.0 mb most likely indicates the presence of a high-pressure system.

60 [1] Allow 1 credit. Acceptable responses include, but are not limited to:

- methane
- water vapor
- carbon dioxide (CO₂)
- ozone

61 [1] Allow 1 credit. Acceptable responses include, but are not limited to:

- Greenhouse gases absorb the longer wave radiation coming from Earth's surface.
- Greenhouse gases trap the heat given off by Earth.
- Greenhouse gases absorb infrared energy.

62 [1] Allow 1 credit. Acceptable responses include, but are not limited to:

- The comet orbits the Sun.
- The comet doesn't orbit Earth.

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

- The comet moves farther from the Sun than Earth's greatest distance from the Sun.
- During most of its orbit the comet is moving slower than Earth.
- The comet's average distance from the Sun is greater.
- The comet has a larger orbit.

64 [1] Allow 1 credit if *all four* responses are correct.

A: Jupiter

B: Saturn

C: Uranus

D: Neptune

65 [1] Allow 1 credit. Acceptable responses include, but are not limited to:

— the farther from the Sun, the greater the period of revolution

— Planets closer to the Sun take less time to complete an orbit.

— direct relationship

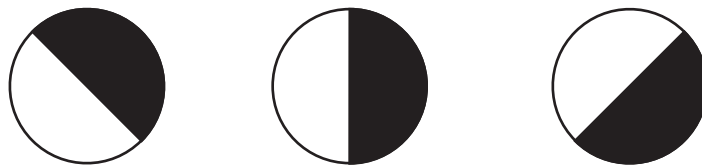
Part C

Allow a maximum of 20 credits for this part.

- 66** [1] Allow 1 credit for quartzite *or* hornfels.
- 67** [1] Allow 1 credit for Cambrian *or* Ordovician *or* Silurian *or* Devonian Period.
- 68** [1] Allow 1 credit if *both* responses are correct. Acceptable responses include, but are not limited to:
- Evidence for inference 1:
 - A fault is younger than any rock through which it cuts.
 - Rock unit *G* had to be in place before it was cut by the fault.
 - law of crosscutting relationships
 - Evidence for inference 2:
 - Rock unit *C* is below rock unit *A*.
 - Younger sedimentary rock is deposited on top of older sedimentary rock.
 - law of superposition
- 69** [1] Allow 1 credit for *two* acceptable responses. Acceptable responses include, but are not limited to:
- deposition
 - cementation
 - compaction
 - burial
- 70** [1] Allow 1 credit for any value from 0.0004 to 0.006 cm.
- 71** [1] Allow 1 credit for Saturn *or* Uranus *or* Neptune.
- 72** [1] Allow 1 credit if *both* responses are correct. Acceptable responses include, but are not limited to:
- Diameter: smaller
 - Density: greater
- 73** [1] Allow 1 credit if *both* responses are correct.
- Color: yellow
 - Luminosity: 1

74 [1] Allow 1 credit.

Examples of 1-credit responses:



75 [1] Allow 1 credit if *all four* ocean tides are correct.

W: high tide

X: low tide

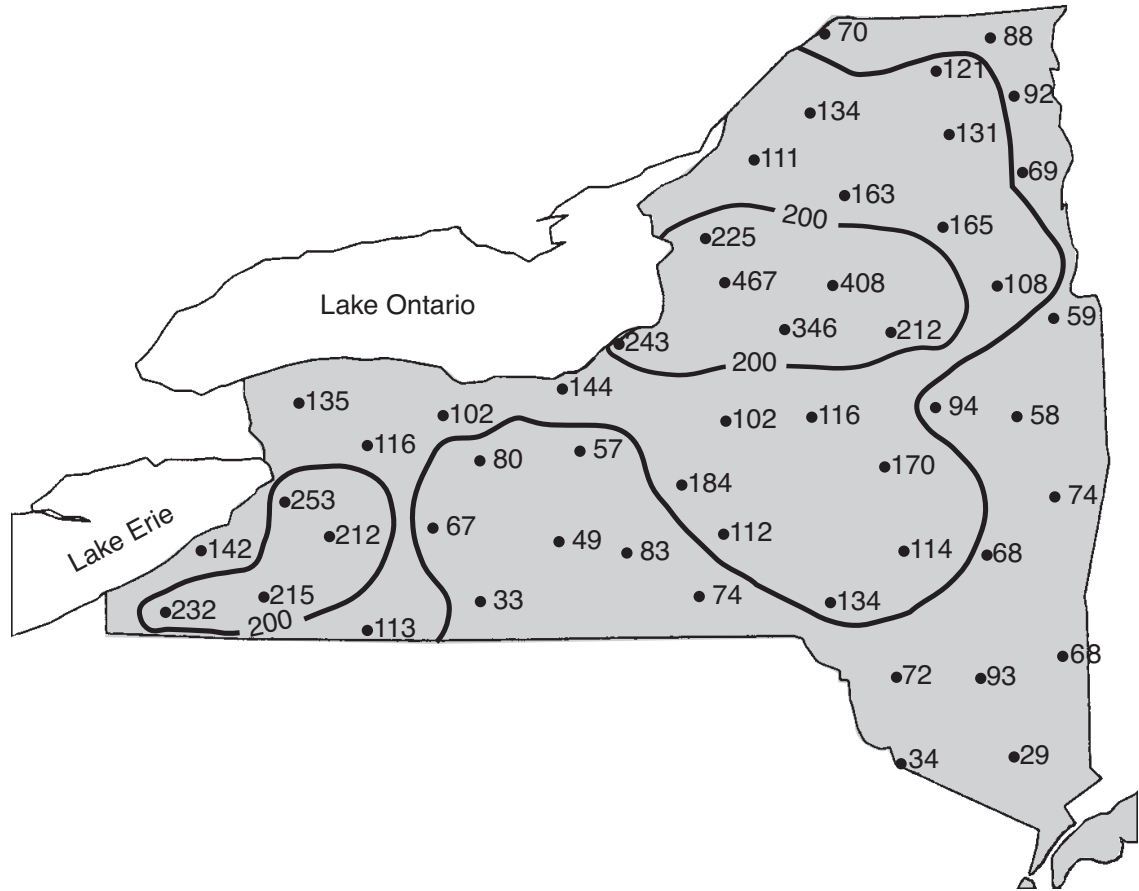
Y: high tide

Z: low tide

76 [1] Allow 1 credit for 6 p.m.

77 [1] Allow 1 credit for a correctly drawn 100-inch isoline. If the student draws additional isolines, all must be correct to receive credit.

Example of a 1-credit response:



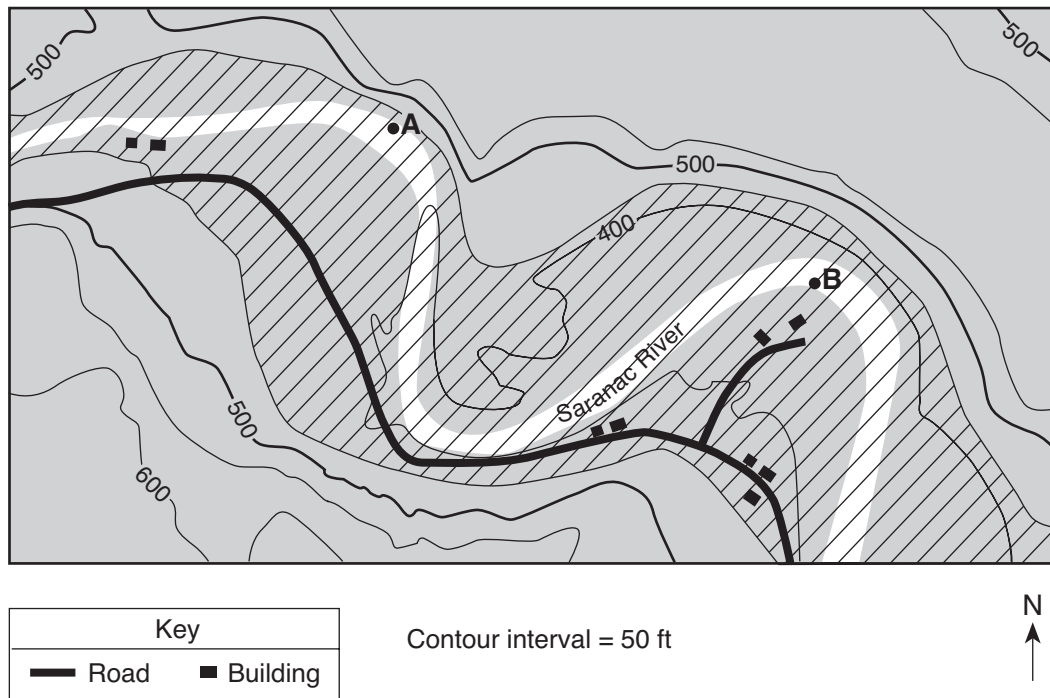
78 [1] Allow 1 credit for 70 in.

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

- prevailing wind direction
- higher elevations
- lake-effect snow
- nearness to large bodies of water

80 [1] Allow 1 credit.

Example of a 1-credit response:



Note: Allow credit even if the diagonal line pattern does *not* cover the river.

81 [1] Allow 1 credit. Acceptable responses include, but are not limited to:

- The contour line bends upstream when crossing the river.
- The elevation of the river near the western edge of the map is 450 ft, but is only 400 ft farther east.

82 [1] Allow 1 credit. Acceptable responses include, but are not limited to:

- Erosion is greater on the outside of the meander curve.
- The velocity of the stream is greater at point A.

83 [1] Allow 1 credit. Acceptable responses include, but are not limited to:

- move to higher ground
- build levees
- build flood-control dams upriver
- plan evacuation routes

84 [1] Allow 1 credit for any value from 2001 cm to 2199 cm.

85 [1] Allow 1 credit. Acceptable responses include, but are not limited to:

- Warm air from over the South Equatorial Current is less dense.
- The air mass is warmer.
- More moisture is present in the warmer air over the South Equatorial Current.
- The Benguela Current causes the air to be cooler.

Regents Examination in Physical Setting/Earth Science

January 2011

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

The Chart for Determining the Final Examination Score for the January 2011 Regents Examination in Physical Setting/Earth Science will be posted on the Department's web site <http://www.p12.nysed.gov/osa/> on Wednesday, January 26, 2011. 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 Online 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 online 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 <http://www.forms2.nysed.gov/emsc/osa/exameval/reexameval.cfm>.
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.

Map to Core Curriculum

January 2011 Physical Setting/Earth Science			
Question Numbers			
Key Ideas/Performance Indicators	Part A	Part B	Part C
Standard 1			
Math Key Idea 1	16	65	
Math Key Idea 2	7, 16, 26	64, 65	
Math Key Idea 3			
Science Inquiry Key Idea 1		49, 50, 51, 52, 62	66, 67, 68, 69, 79, 82
Science Inquiry Key Idea 2	19	51	
Science Inquiry Key Idea 3			
Engineering Design Key Idea 1			
Standard 2			
Key Idea 1	29	47	
Key Idea 2			
Key Idea 3			83
Standard 6			
Key Idea 1		60	73, 82
Key Idea 2	11, 12, 16, 17, 19, 21, 24, 27, 28, 29, 30, 31, 32, 33, 34, 35	36, 38, 39, 40, 41, 42, 43, 44, 45, 46, 47, 48, 51, 52, 53, 54, 55, 56, 57, 58, 59, 61, 62, 63	66, 67, 68, 69, 70, 71, 72, 73, 74, 75, 76, 77, 79, 80, 81, 82, 84, 85
Key Idea 3			77, 78, 81
Key Idea 4			
Key Idea 5	1, 21, 33	49	76, 82
Key Idea 6		61	
Standard 7			
Key Idea 1			
Key Idea 2			83
Standard 4			
Key Idea 1	1, 2, 3, 4, 5, 9, 10, 17, 18, 19, 27, 28, 33, 34	39, 46, 48, 51, 52, 54, 62, 63, 64, 65	66, 67, 68, 71, 72, 73, 74, 75, 76, 84
Key Idea 2	6, 7, 8, 9, 11, 12, 13, 14, 15, 16, 17, 21, 22, 26, 29, 30, 31, 32	38, 39, 40, 41, 42, 43, 44, 45, 47, 49, 50, 53, 56, 57, 58, 59, 60, 61	76, 77, 78, 79, 80, 81, 82, 83, 84, 85
Key Idea 3	20, 23, 24, 25, 35	36, 37, 55	66, 69, 70
Reference Tables			
ESRT 2010 Edition (Revised)	3, 7, 9, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 25, 26, 29, 32, 34, 35	36, 41, 43, 45, 48, 54, 55, 56, 57, 58, 59, 64, 65	66, 67, 69, 70, 71, 72, 73, 79, 85