

FOR TEACHERS ONLY

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

PS-ES PHYSICAL SETTING/EARTH SCIENCE

Friday, June 17, 2011 — 1:15 to 4:15 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 at: <http://www.p12.nysed.gov/apda/> 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

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

Part B-1

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

Directions to the Teacher

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

Do *not* attempt to *correct* the student's work by making insertions or changes of any kind.

Allow 1 credit for each correct response.

At least two science teachers must participate in the scoring of the Part B–2 and Part C open-ended questions on a student's paper. 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 more than approximately one-half of 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. On the student's separate answer sheet, for each question, record the number of credits earned and the teacher's assigned rater/scorer letter.

Fractional credit is *not* allowed. Only whole-number credit may be given for a response. If the student gives more than one answer to a question, only the first answer should be rated. Units need not be given when the wording of the questions allows such omissions.

For handscoring, raters should enter the scores earned in the appropriate boxes printed on the separate answer sheet. Next, the rater should add these scores and enter the total in the space provided. The student's score for the Earth Science Performance Test should be recorded in the space provided. Then the student's raw scores on the written test and the performance test should be converted to a scale score by using the conversion chart that will be posted on the Department's web site at: <http://www.p12.nysed.gov/apda/> on Friday, June 17, 2011. The student's scale score should be entered in the box labeled "Scale Score" on the student's answer sheet. The scale score is the student's final examination score.

Beginning in June 2011, schools are no longer permitted to rescore any of the open-ended questions on this exam after each question has been rated once, regardless of the final exam score. Schools are required to ensure that the raw scores have been added correctly and that the resulting scale score has been determined accurately.

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. Acceptable responses include, but are not limited to:

- Erie-Ontario Lowlands
- Erie-Ontario plains
- interior lowlands

52 [1] Allow 1 credit. Acceptable responses include, but are not limited to:

- S
- south
- SE
- SW

53 [1] Allow 1 credit for transpiration *or* sublimation.

54 [1] Allow 1 credit. Acceptable responses include, but are not limited to:

- a decrease in slope
- increased vegetation
- increased infiltration
- a more permeable surface

55 [1] Allow 1 credit for 2260 J.

56 [1] Allow 1 credit for cA *or* cP.

Note: Do *not* allow credit if the letters are reversed. Allow credit whether or not capital letters are used.

- 57 [1] Allow 1 credit. Acceptable responses include, but are not limited to:
- Reykjavik has a maritime climate.
 - The ocean around Iceland moderates Reykjavik’s climate.
 - Reykjavik is located near a large body of water which heats and cools more slowly than inland locations.
 - Yakutsk is located farther inland.
- 58 [1] Allow 1 credit. Acceptable responses include, but are not limited to:
- Yakutsk receives less precipitation during the year than Reykjavik.
 - Yakutsk receives more of its precipitation in summer than in winter.
 - Yakutsk receives a higher percentage of precipitation as snowfall.
- 59 [1] Allow 1 credit for *two* correct responses. Acceptable responses include, but are not limited to:
- Warm: Norwegian Current *or* North Atlantic Current
Cool: East Greenland Current
- 60 [1] Allow 1 credit for *Polaris or* North Star.
- 61 [1] Allow 1 credit for 45°.
- 62 [1] Allow 1 credit. Acceptable responses include, but are not limited to:
- rotation
 - Earth spinning on its axis
- 63 [1] Allow 1 credit.

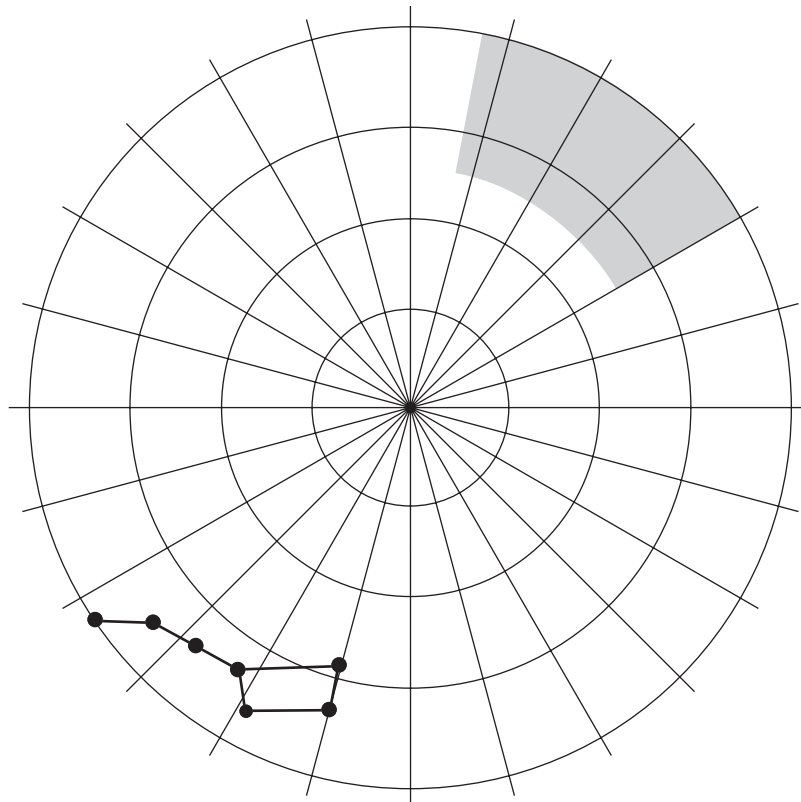
Example of a 1-credit response:

Star	Luminosity	Temperature (K)	Classification
<i>Merak</i>			
<i>Dubhe</i>			giant

- 64 [1] Allow 1 credit for the Milky Way.

65 [1] Allow 1 credit if the center of the **X** is drawn within the shaded area shown.

Note: It is recommended that an overlay of the same scale as the student answer booklet be used to ensure reliability in rating.



Part C

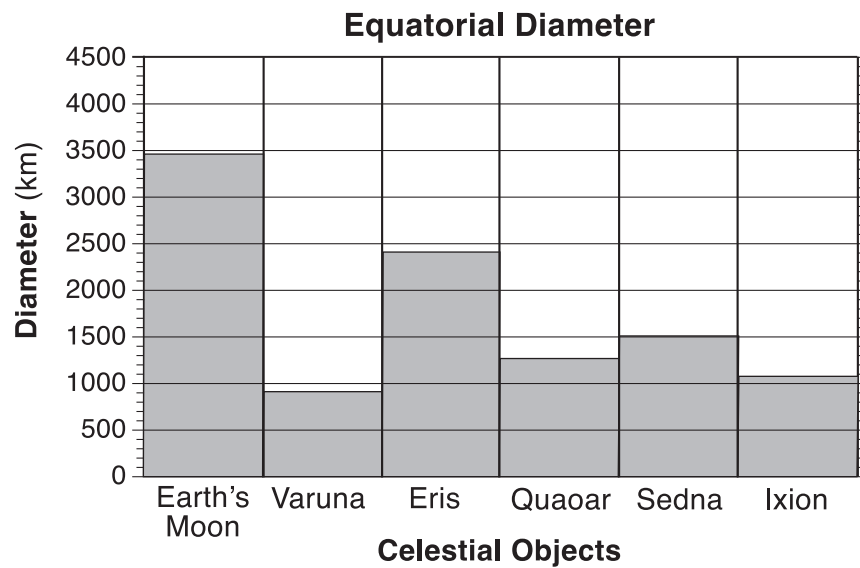
Allow a maximum of 20 credits for this part.

66 [1] Allow 1 credit if the center of the **X** is drawn anywhere on the orbit of Neptune ± 2 mm.

67 [1] Allow 1 credit if *all* bars are correctly graphed ± 100 km.

Note: It is recommended that an overlay of the same scale as the student answer booklet be used to ensure reliability in rating.

Example of a 1-credit graph:



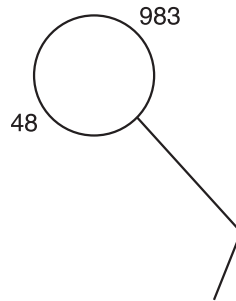
68 [1] Allow 1 credit for Sedna *and* acceptable evidence. Acceptable evidence includes, but is not limited to:

- Sedna is the farthest from the Sun at its closest approach.
- Sedna travels the farthest away from the Sun.
- Its average distance from the Sun is greatest.

69 [1] Allow 1 credit if *all four* weather variables are correctly located in the proper format.

Note: Allow credit for a wind-speed feather drawn at the end, and on either side, of the wind-direction line.

Example of a 1-credit response:

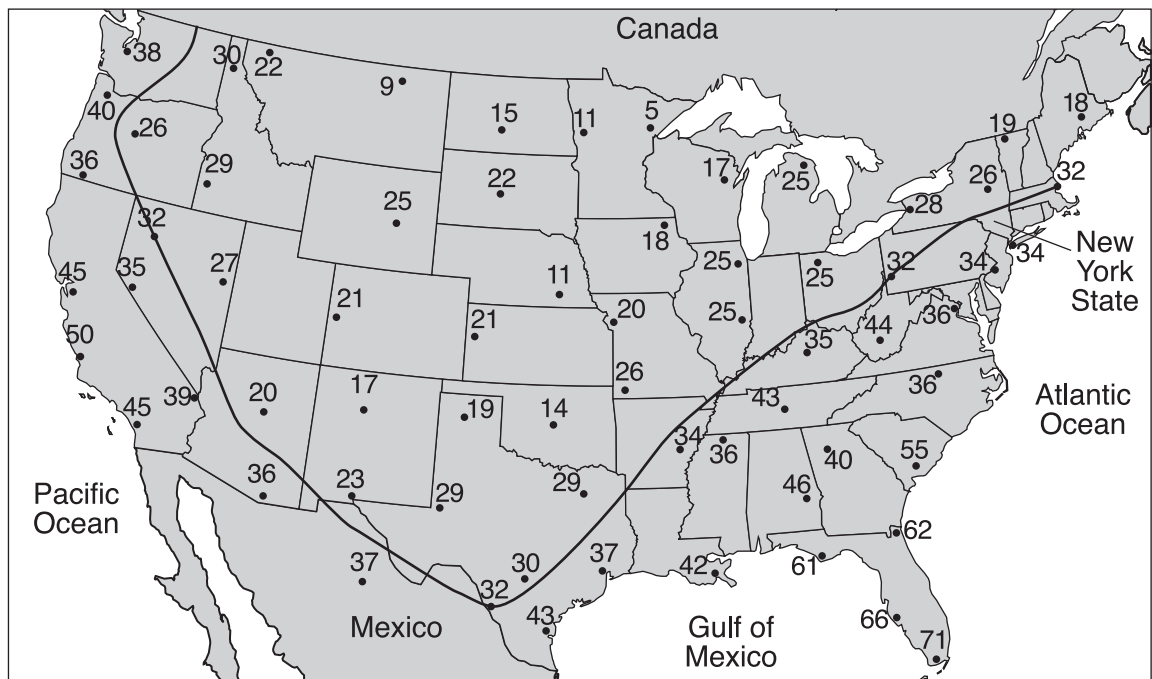


70 [1] Allow 1 credit for a correctly drawn 32°F isotherm. The line must pass through the points for 32°F. If additional isotherms are drawn, all isotherms must be correct to receive credit.

Note: Allow credit if the isoline extends to the edge of the map.

Example of a 1-credit response:

Map 1—Temperatures (°F)

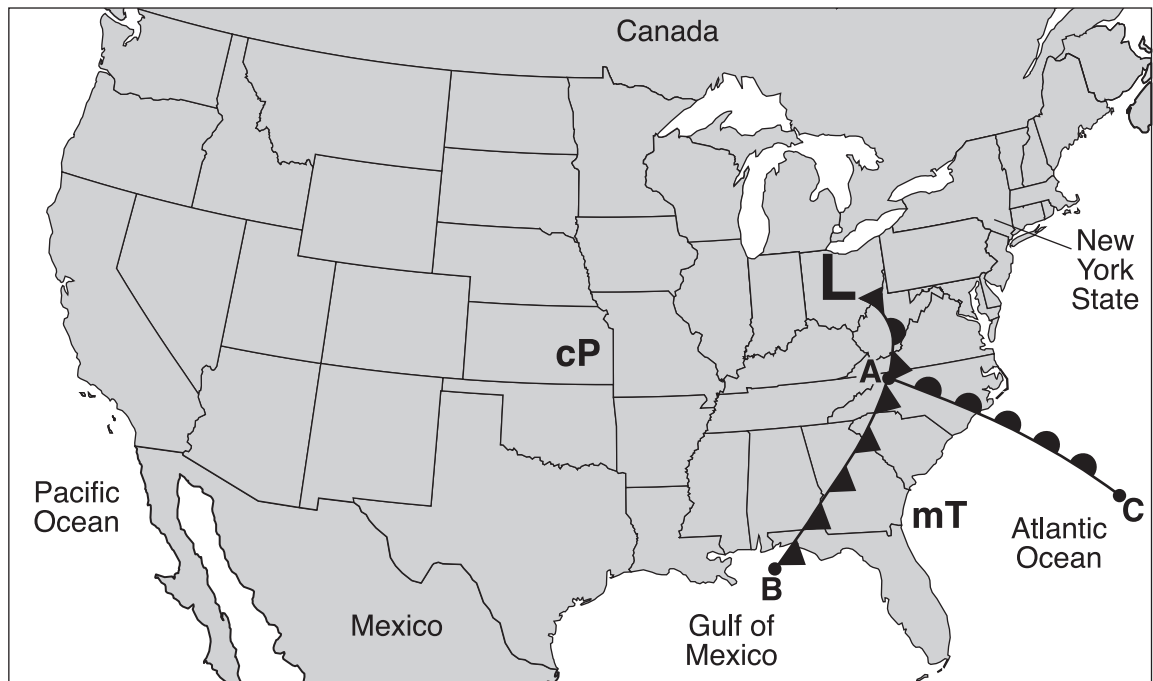


71 [1] Allow 1 credit for the placement of the correct symbol facing in the correct direction for both fronts.

Note: Allow credit even if symbols are *not* shaded in.

Example of a 1-credit response:

Map 2–Weather Fronts



72 [1] Allow 1 credit. Acceptable responses include, but are not limited to:

- Winds are moving counterclockwise.
- Winds are moving inward toward the low-pressure center.
- in and counterclockwise

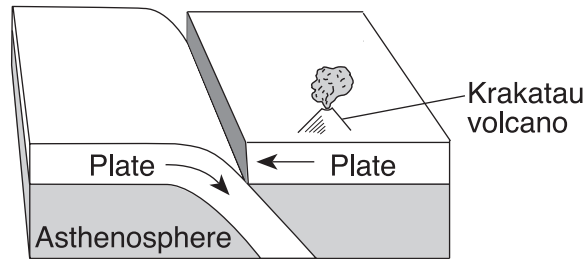
73 [1] Allow 1 credit. Acceptable responses include, but are not limited to:

- Prevailing winds blow toward the northeast.
- New York State is located in the southwesterly wind belt.
- The jet stream moved the low-pressure system in that direction.
- prevailing winds
- Winds are moving the system northeast.

- 74** [1] Allow 1 credit. Acceptable responses include, but are not limited to:
- Residents should have purchased extra supplies, such as food and water.
 - Residents should have obtained battery-powered radios, flashlights, and/or candles.
 - Rock salt or de-icing pellets should have been obtained to clear ice from sidewalks and driveways.
 - Check to make sure enough fuel for heat is on hand to last several days.
 - People who have emergency generators should check to make sure they are working properly.
- 75** [1] Allow 1 credit. Acceptable responses include, but are not limited to:
- The intrusion has not been broken and offset.
 - The igneous rhyolite cuts across the fault.
- 76** [1] Allow 1 credit for Devonian Period.
- 77** [1] Allow 1 credit for the correct crystal size *and* an acceptable explanation. Acceptable responses include, but are not limited to:
- Crystal size:
- fine grained
 - less than 1-mm crystal size
- Explanation:
- The magma cooled rapidly.
 - It cooled over a short period of time.
- 78** [1] Allow 1 credit for quartzite *or* hornfels.
- 79** [1] Allow 1 credit. Acceptable responses include, but are not limited to:
- The valley is U-shaped.
 - The valley has grooved, scratched, and polished bedrock.

80 [1] Allow 1 credit if *both* arrows show the plates coming toward each other.

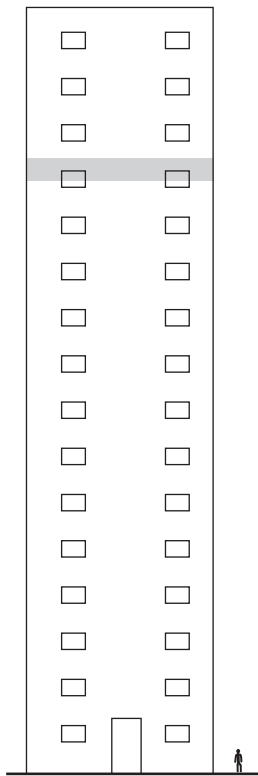
Example of a 1-credit response:



(Not drawn to scale)

81 [1] Allow 1 credit for correctly indicating the maximum height of the tsunami wave on the building, within the shaded region shown below.

Note: It is recommended that an overlay of the same scale as the student answer booklet be used to ensure reliability in rating.



Scale: 1 centimeter = 5 meters

- 82 [1] Allow 1 credit for 530 *and* the correct units. Acceptable units include, but are not limited to:
- kilometers/hour
 - km/h

Note: Allow credit for a correct calculation expressed in other acceptable units, i.e., 8.8 kilometers/minute.

- 83 [1] Allow 1 credit for stratosphere.

- 84 [1] Allow 1 credit. Acceptable responses include, but are not limited to:
- The ash particles blocked out the Sun's rays.
 - Dust particles reflect the Sun's rays.
 - Less insolation reached Earth's surface.

- 85 [1] Allow 1 credit if the texture *and* density are correct. Acceptable responses include, but are not limited to:

Texture:

- vesicular
- filled with gas pockets

Note: Do *not* accept glassy, only.

Density:

- low density
- density less than 1 g/cm³
- less dense than water

Regents Examination in Physical Setting/Earth Science

June 2011

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

The *Chart for Determining the Final Examination Score for the June 2011 Regents Examination in Physical Setting/Earth Science* will be posted on the Department's web site at: <http://www.p12.nysed.gov/apda/> on Friday, June 17, 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.

Online Submission of 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

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