

FOR TEACHERS ONLY

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

PHYSICAL SETTING/EARTH SCIENCE

Thursday, June 19, 2014 — 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/assessment/> 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 2	10 1	19 1	28 3
2 4	11 3	20 2	29 4
3 1	12 4	21 4	30 2
4 3	13 3	22 3	31 1
5 1	14 2	23 3	32 2
6 1	15 1	24 2	33 2
7 2	16 3	25 4	34 1
8 2	17 3	26 4	35 1
9 4	18 1	27 3	

Part B-1

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

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. If the student's responses for the multiple-choice questions are being hand scored prior to being scanned, the scorer must be careful not to make any marks on the answer sheet except to record the scores in the designated score boxes. Marks elsewhere on the answer sheet will interfere with the accuracy of the scanning.

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. Teachers may not score their own students' answer papers.

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 hand scoring, 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/assessment/> on Thursday, June 19, 2014. 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.

Schools are not 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 administration 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 for Peru Current.

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

- rotation
- turning on its axis
- spinning

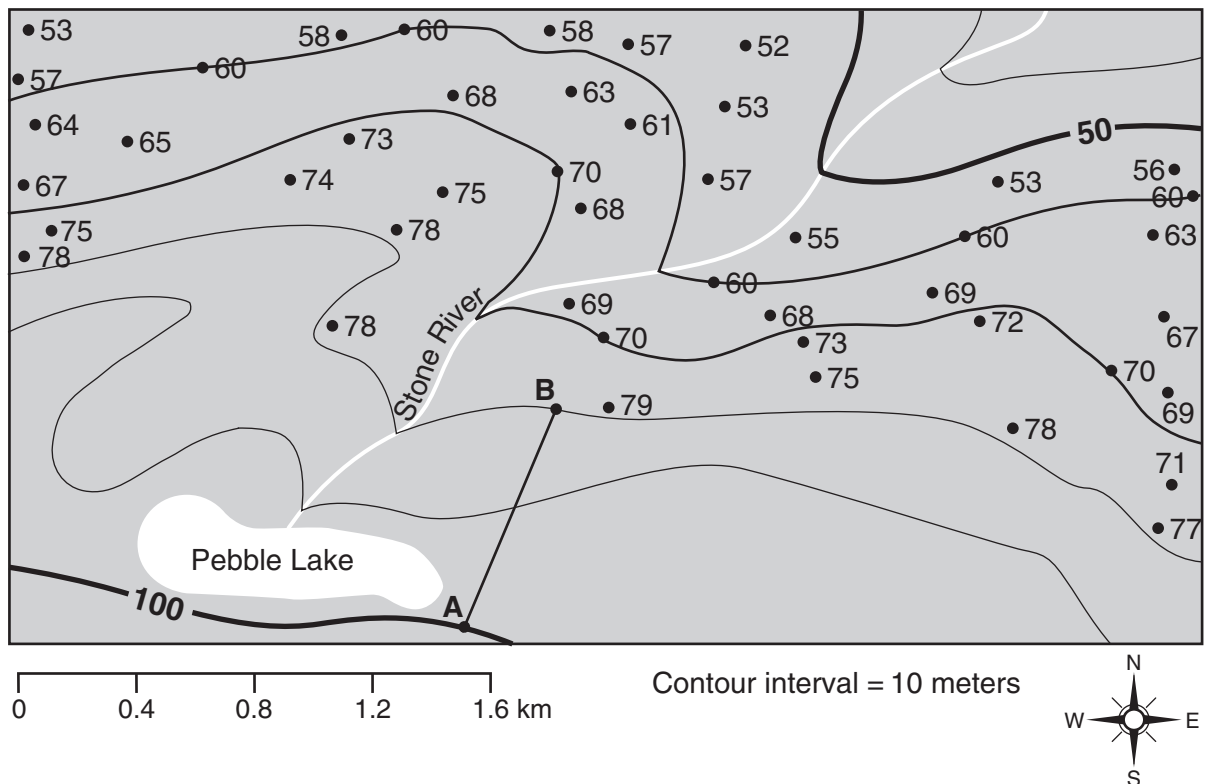
53 [1] Allow 1 credit. Acceptable responses include, but are not limited to:

- southwest winds and northeast winds
- NE winds and SW winds
- prevailing southwesterly winds and northeast trade winds

54 [1] Allow 1 credit for correctly drawing *both* the 60-m and 70-m contour lines extended to the edges of the map.

Note: If additional contour lines are drawn, all must be drawn correctly to receive credit.

Example of a 1-credit response:



55 [1] Allow 1 credit for any value greater than 90 m, but less than 100 m.

56 [1] Allow 1 credit for any value from 22 m/km to 29 m/km.

57 [1] Allow 1 credit if *all three* weather variables for 12 noon Thursday are correctly recorded.

Time and Day	Actual Barometric Pressure (mb)	Cloud Cover (%)	Wind Direction From the
12 noon Thursday	1001.2	100	SW or SSW

58 [1] Allow 1 credit for 100%.

59 [1] Allow 1 credit for 1.5 in/h or $1\frac{1}{2}$ in/h.

Note: Do *not* allow credit for $\frac{12}{8}$ or $\frac{3}{2}$ in/h because these do not show a complete calculation.

60 [1] Allow 1 credit for *two* acceptable items. Acceptable responses include, but are not limited to:

- first aid kit
- blankets
- batteries
- radio
- flashlight
- bottled water
- food
- generator
- necessary medications

61 [1] Allow 1 credit for transpiration *or* evaporation/vaporization *or* evapotranspiration.

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

- infiltration
- water seeping into the ground
- absorption/recharge of the storage
- seeping/seepage/percolation
- water entering/soaking/sinking into the soil

Note: Do *not* allow credit for:

- “precipitation” (The arrows are underground.)
- “saturation” (It is not a process.)
- “drainage” (Drainage can also be surface runoff.)

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

- As precipitation/rainfall increases, runoff increases.
- More rain leads to more runoff.
- direct relationship
- Runoff is usually less than rainfall.

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

- the Sun
- insolation
- solar radiation/solar energy
- sunlight

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

- convection
- convective circulation
- slab pull
- subduction
- convection currents
- magma rising

Part C

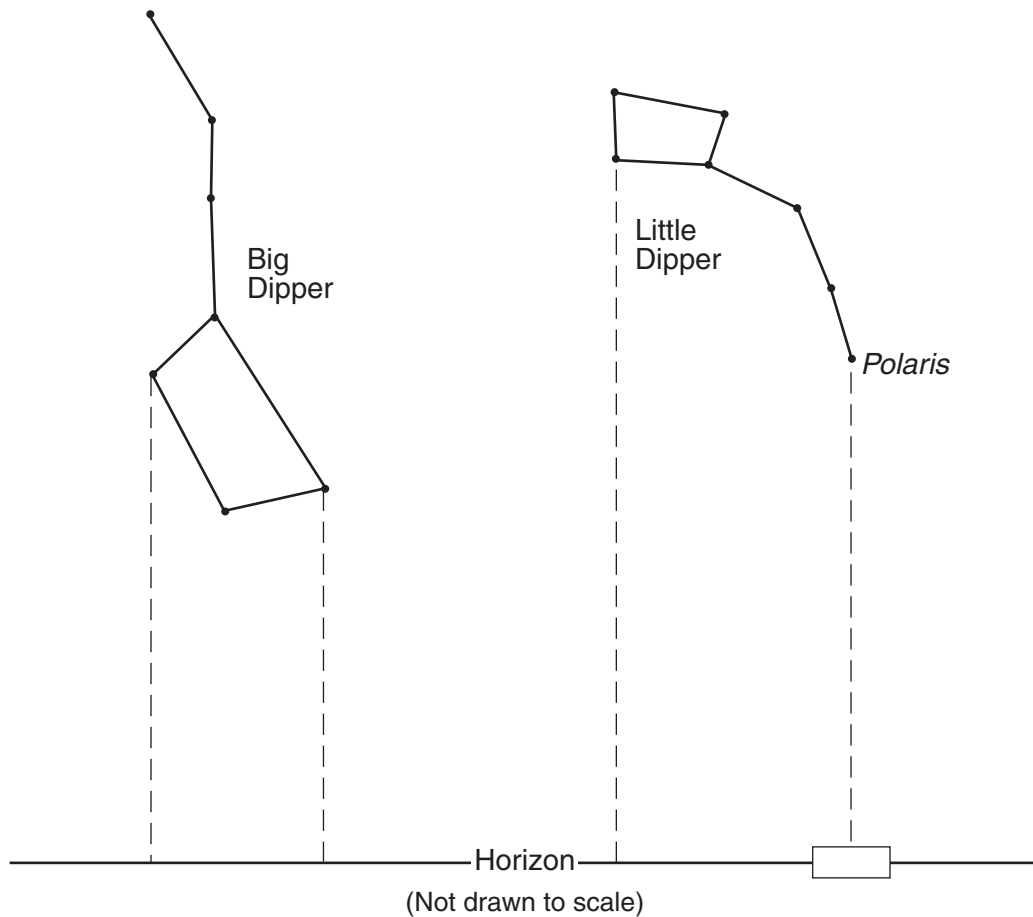
- 66** [1] Allow 1 credit if *both* the tide height and time of day, including p.m., are correct.
Tide height: any value from 0.58 m to 0.6 m.
Time: any value from 8:30 p.m. to 9:00 p.m.
- 67** [1] Allow 1 credit. Acceptable responses include, but are not limited to:
- The Moon is closer to Earth.
 - The Moon’s gravitational pull is stronger because the Moon is closer to Earth than the Sun is.
- Note:** Do *not* allow credit for “The Moon’s gravity is stronger” alone because the Moon’s distance from Earth is not described.
- 68** [1] Allow 1 credit for the correct month and day of March 19 *or* March 20 *or* March 21 *or* March 22.
- 69** [1] Allow 1 credit for any value from 23.4° S to 23.5° S. The acceptable unit and compass direction must be included.
- Note:** Allow credit if the student indicates a fraction, such as $23\frac{1}{2}^{\circ}$ or minute form, such as $23^{\circ} 30' S$, for the decimal value.
- 70** [1] Allow 1 credit for 24 h.
- 71** [1] Allow 1 credit. Acceptable responses include, but are not limited to:
- Earth’s axis is tilted 23.5 degrees from a line perpendicular to the plane of Earth’s orbit.
 - axis is tilted
 - Earth’s axis is always parallel to itself at any other place in Earth’s orbit.
 - parallelism of Earth’s axis
 - Earth’s axis is always aligned with the North Star (*Polaris*) as Earth orbits the Sun.

- 72** [1] Allow 1 credit for Middle Cambrian Epoch.
- 73** [1] Allow 1 credit. Acceptable responses include, but are not limited to:
- They were rapidly buried by sediment deposition.
 - Oxygen was lacking.
 - It was a deep-water environment.
- 74** [1] Allow 1 credit for 4, 5, 7, *or* 9.
- 75** [1] Allow 1 credit for delta *or* any specific type of delta.
- 76** [1] Allow 1 credit. Acceptable responses include, but are not limited to:
- Larger particles are deposited in shallow water and smaller particles are carried farther from the shore.
 - horizontal sorting/biggest to smallest
 - boulders, pebbles, sand, silt, clay/decreasing order of sizes
 - The sediment is sorted.
 - The sediment is arranged in beds or layers/vertically sorted.
 - Higher-density particles are deposited first.
- 77** [1] Allow 1 credit for any value from 0.0008 cm to 0.001 cm.
- 78** [1] Allow 1 credit for limestone.

79 [1] Allow 1 credit if the center of the student's **X** is located within or touches the clear rectangle.

Note: Allow credit if a symbol other than an **X** is used.

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

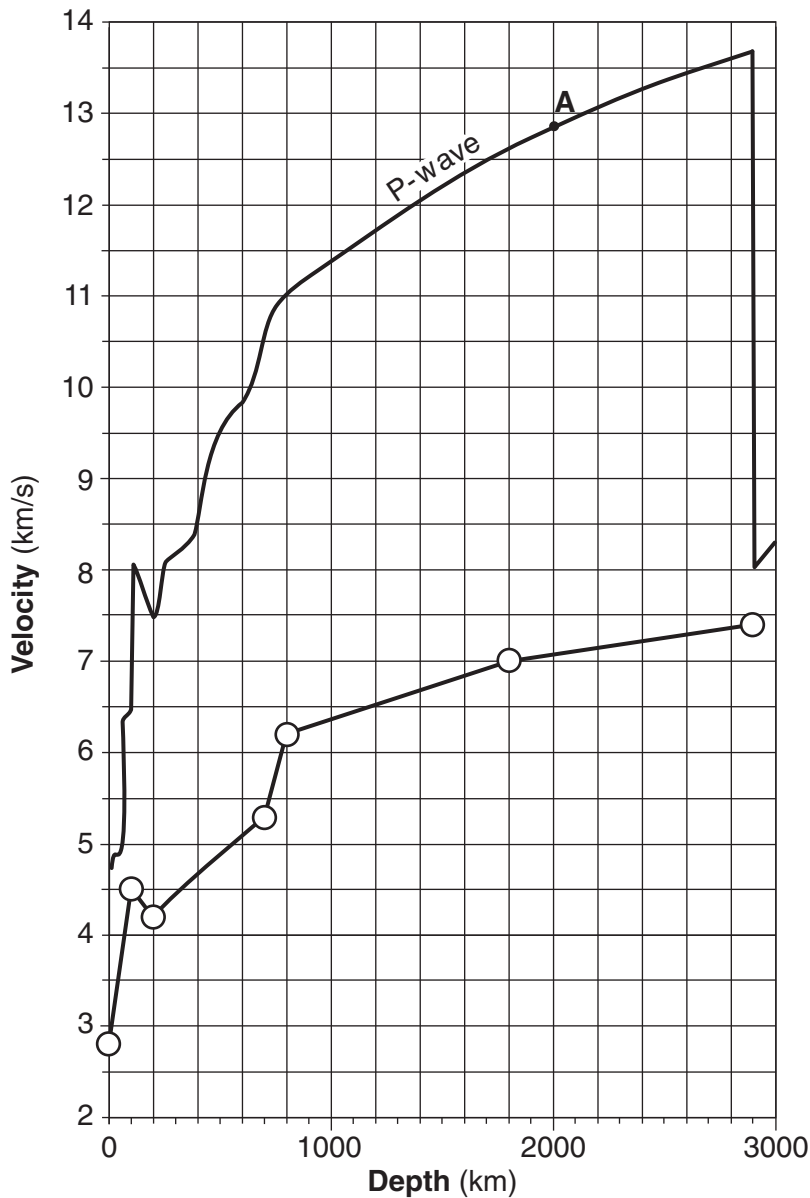


80 [1] Allow 1 credit for 42°.

81 [1] Allow 1 credit if the centers of *all seven* student plots are within or touch the circles shown below and are correctly connected with a line that passes within or touches the circles.

Note: Allow credit even if the student extends the line beyond 2900 km.

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



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

- The outer core is a liquid.
- The interior temperature of Earth is above the melting point.
- The outer core absorbs S-waves.
- S-waves cannot travel through a liquid.
- They can not travel through a fluid.

83 [1] Allow 1 credit if *both* responses are correct.

Pressure: any value from 0.7 million atmospheres to 0.9 million atmospheres.

Interior temperature: any value from 4100°C to 4300°C.

84 [1] Allow 1 credit. Acceptable responses include, but are not limited to:

— gravity

— gravitational attraction

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

Diameter:

— increases

— becomes larger

Luminosity:

— increases

— higher rate of energy emission

— The star appears brighter.

Regents Examination in Physical Setting/Earth Science

June 2014

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

The *Chart for Determining the Final Examination Score for the June 2014 Regents Examination in Physical Setting/Earth Science* will be posted on the Department's web site at: <http://www.p12.nysed.gov/assessment/> on Thursday, June 19, 2014. 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 2014 Physical Setting/Earth Science			
Question Numbers			
Key Ideas/Performance Indicators	Part A	Part B	Part C
Standard 1			
Math Key Idea 1		56, 59	66
Math Key Idea 2	5, 11, 32	38, 40, 63	77, 82, 83
Math Key Idea 3	34	54	
Science Inquiry Key Idea 1	6, 14, 15, 29	39, 44, 46, 51, 53	67, 71, 84
Science Inquiry Key Idea 2			
Science Inquiry Key Idea 3	8, 25, 26, 27, 28	37, 48, 50	72, 78
Engineering Design Key Idea 1			
Standard 2			
Key Idea 1		42, 57	
Key Idea 2			
Key Idea 3			
Standard 6			
Key Idea 1	3, 9, 10, 12, 15, 22, 31	42, 44, 49, 50, 51, 52, 64, 65	73, 75, 76, 78, 84
Key Idea 2	1, 2, 4, 7, 16, 18, 19, 20, 21, 23, 24, 26, 28, 29, 30, 31, 32, 33, 34, 35	36, 37, 38, 39, 41, 42, 46, 47, 49, 51, 53, 54, 55, 57, 61, 62	68, 69, 70, 74, 75, 79, 80, 81, 84, 85
Key Idea 3		54	
Key Idea 4			
Key Idea 5	2, 5, 11, 13, 29, 31, 32, 33	36, 43, 45, 56, 63	68, 69, 70, 71, 76, 82, 83, 85
Key Idea 6	17		
Standard 7			
Key Idea 1			
Key Idea 2		60	
Standard 4			
Key Idea 1	1, 2, 3, 5, 6, 7, 8, 9, 10, 11, 29, 30, 31	36, 37, 38, 39, 40, 45, 46, 47, 49, 52, 61, 62, 63	66, 67, 68, 71, 72, 73, 74, 79, 80, 84, 85
Key Idea 2	4, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 32, 33, 34, 35	41, 42, 43, 44, 51, 53, 54, 55, 56, 57, 58, 59, 60, 64, 65	69, 70, 75, 76, 77, 78, 81, 82, 83
Key Idea 3	25, 26, 27, 28	48, 50	
Reference Tables			
ESRT 2011 Edition (Revised)	1, 7, 8, 11, 15, 16, 18, 19, 20, 21, 24, 25, 26, 27, 28	37, 40, 41, 48, 50, 51, 53, 56, 57, 59, 65	72, 74, 77, 78, 80, 82, 83, 85