FOR TEACHERS ONLY

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

PS–ES PHYSICAL SETTING/EARTH SCIENCE

Thursday, January 26, 2012 — 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 . . . . . **2**	10 . . . . . **3**	19 . . . . . **2**	28 . . . . . **1** . . . . .
2 . . . . . **3**	11 . . . . . **3**	20 . . . . . **2**	29 . . . . . **1** . . . . .
3 . . . . . **2**	12 . . . . . **2**	21 . . . . . **1**	30 . . . . . **1** . . . . .
4 . . . . . **3**	13 . . . . . **4**	22 . . . . . **1**	31 . . . . . **3** . . . . .
5 . . . . . **1**	14 . . . . . **2**	23 . . . . . **2**	32 . . . . . **2** . . . . .
6 . . . . . **1**	15 . . . . . **2**	24 . . . . . **2**	33 . . . . . **2** . . . . .
7 . . . . . **4**	16 . . . . . **4**	25 . . . . . **4**	34 . . . . . **1** . . . . .
8 . . . . . **4**	17 . . . . . **3**	26 . . . . . **2**	35 . . . . . **2** . . . . .
9 . . . . . **1**	18 . . . . . **1**	27 . . . . . **3**	

Part B–1

36 . . . . . **4**	40 . . . . . **2**	44 . . . . . **1**	48 . . . . . **3** . . . . .
37 . . . . . **3**	41 . . . . . **1**	45 . . . . . **3**	49 . . . . . **4** . . . . .
38 . . . . . **2**	42 . . . . . **1**	46 . . . . . **2**	50 . . . . . **2** . . . . .
39 . . . . . **4**	43 . . . . . **3**	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. 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 Thursday, January 26, 2012. 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.

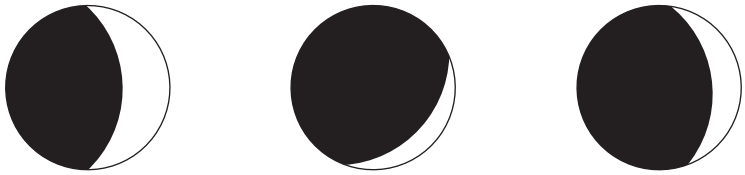
Because scale scores corresponding to raw scores in the conversion chart may change from one administration to another, it is crucial that for each administration, the conversion chart provided for that administration be used to determine the student's final score.

Part B–2

Allow a maximum of 15 credits for this part.

51 [1] Allow 1 credit if the student shades more than half of the Moon, leaving a lighted portion on the right edge as shown below.

Examples of 1-credit responses:



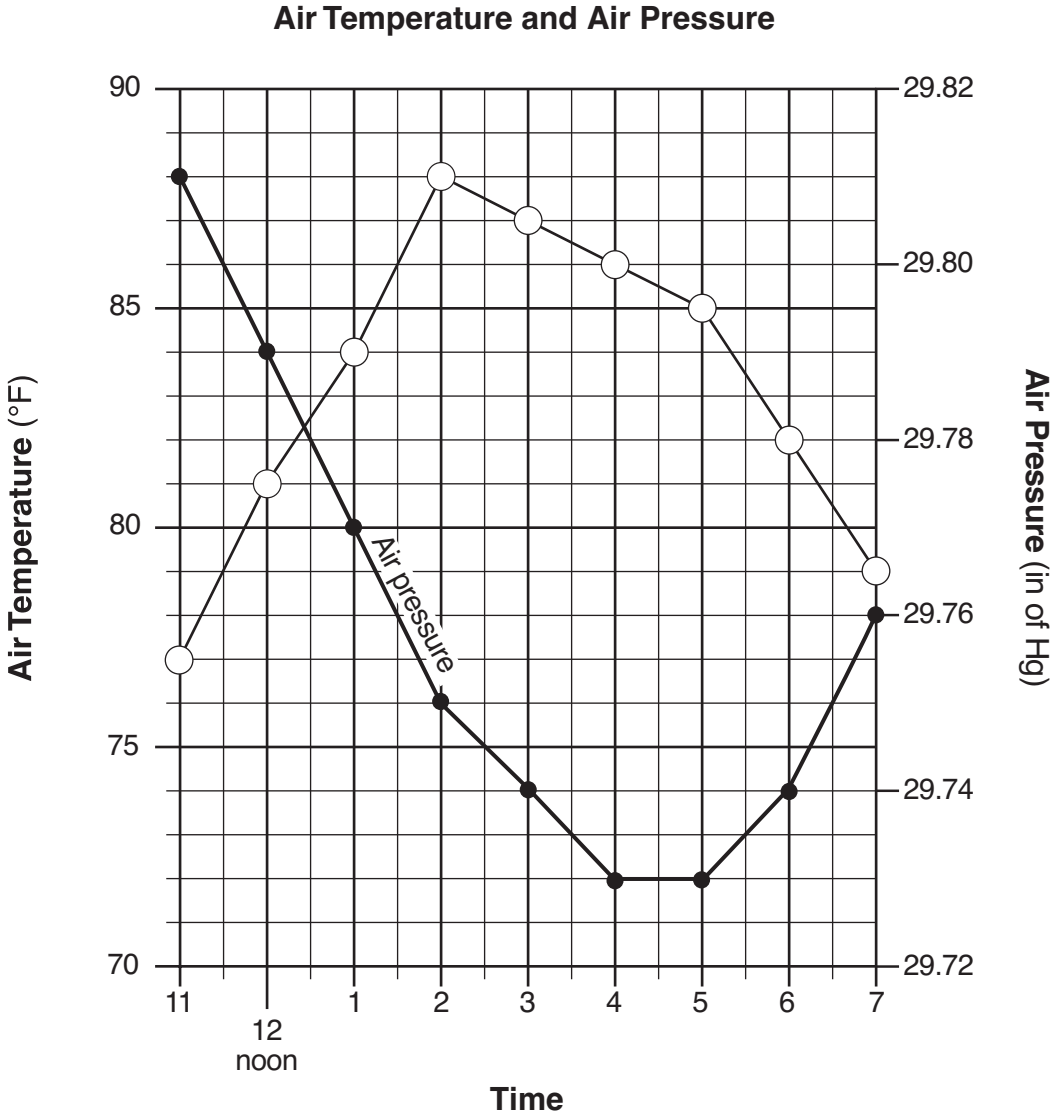
52 [1] Allow 1 credit for position number 8.

53 [1] Allow 1 credit for any value from 29 d to 30 d.

54 [1] Allow 1 credit for position number 4 *or* 8.

55 [1] Allow 1 credit if the centers of *all nine* plots are within the circles shown and are correctly connected with a line that passes within each circle.

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



56 [1] Allow 1 credit. Acceptable responses include, but are not limited to:

— As temperature increased, pressure decreased.

— There is an inverse relationship between air temperature and air pressure.

— As one variable increases, the other variable decreases.

57 [1] Allow 1 credit if *both* responses are correct: Quaternary Period and Pleistocene Epoch.

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

— mastodont

— beluga whale

— condor

— humans

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

— The rate at which water infiltrates the soil will decrease if the soil is frozen.

— Frozen ground is mostly impermeable.

— Ice fills the pore spaces.

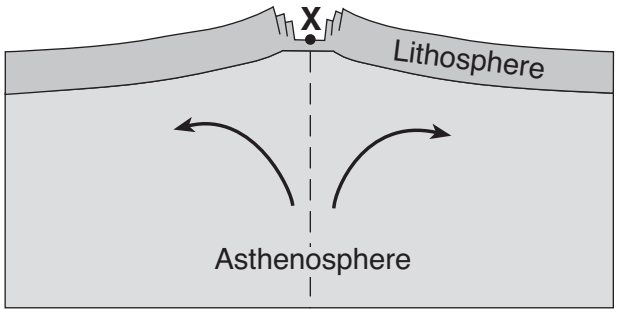
— The ground is frozen.

— The soil is composed of small particles.

60 [1] Allow 1 credit for any value from 23 million years ago to 1.8 million years ago.

61 [1] Allow 1 credit for correctly drawn arrows that rise and curve away from the dashed line.

Example of a 1-credit response:



62 [1] Allow 1 credit for Arabian Plate and African Plate.

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

— The 90°-angle plate received more intense radiation.

— It received the most concentrated/more direct rays.

— It absorbed the most light.

— It reflected the least amount of light.

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

Final temperatures:

— lower

— cooler

Explanation:

— More light is reflected off the white surface.

— Less energy is absorbed by the white surface.

— Black absorbs energy better.

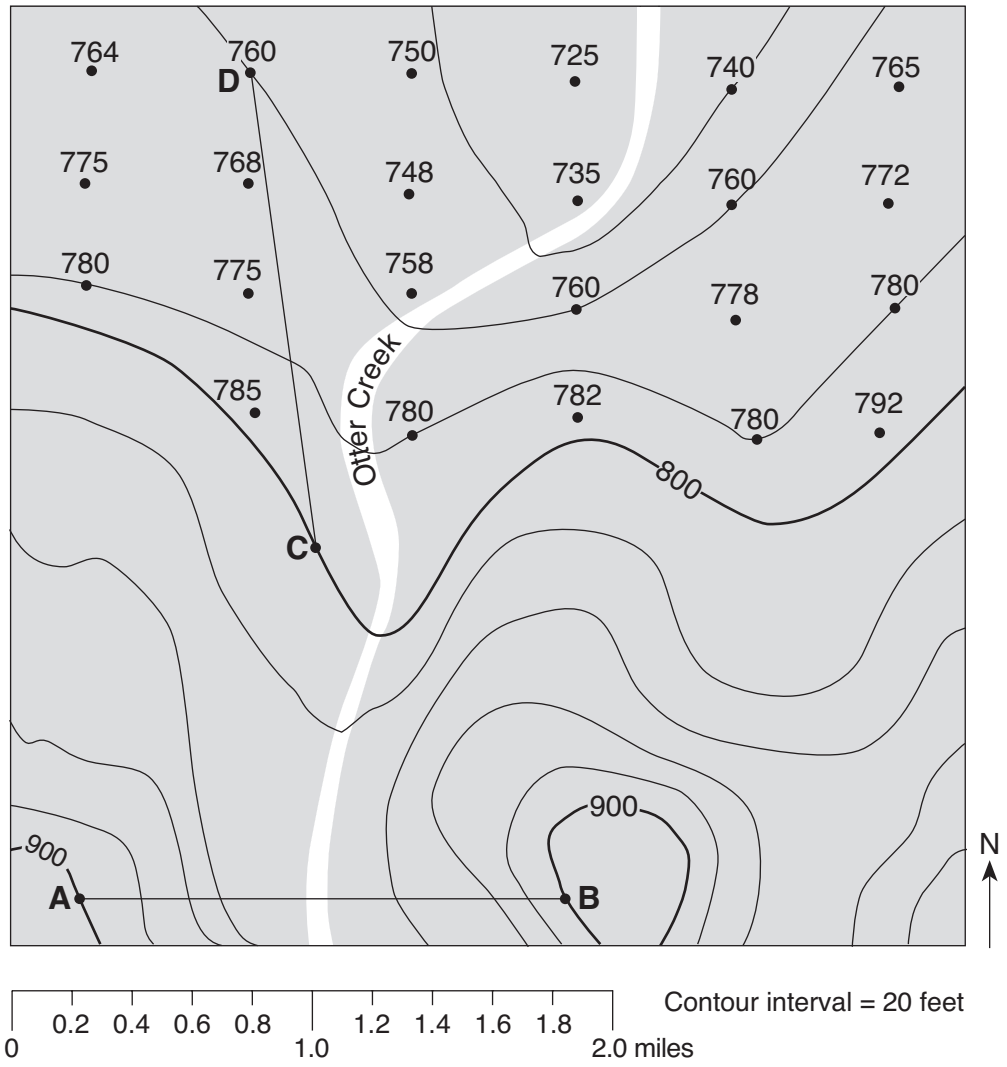
65 [1] Allow 1 credit for 0° latitude *or* the equator.

Part C

Allow a maximum of 20 credits for this part.

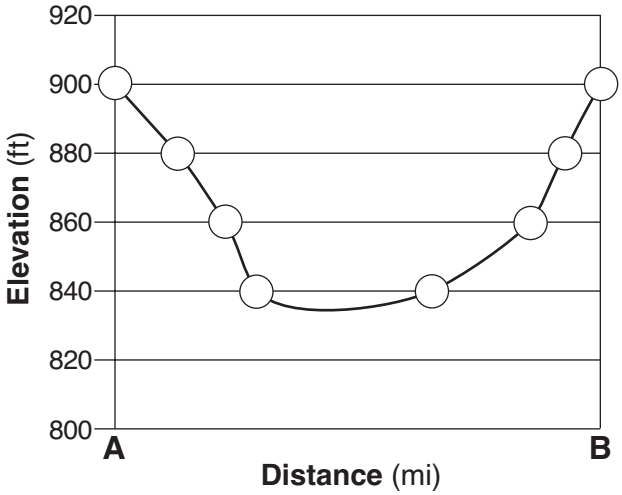
66 [1] Allow 1 credit if *all three* contour lines are correctly drawn. Contour lines must extend to the edges of the map to receive credit. If additional contour lines are drawn, *all* must be correct to receive credit.

Example of a 1-credit response:



67 [1] Allow 1 credit if the centers of *all eight* plots are within the circles shown and are correctly connected with a line that passes within the circles. The line must show a valley lower than 840 feet but higher than 820 feet.

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



68 [1] Allow 1 credit for any value from 23 to 27 with the correct units. Acceptable units include, but are not limited to:

— feet/mile

— ft per mi

69 [1] Allow 1 credit. Acceptable responses include, but are not limited to:

— Contour lines bend upstream forming a V-shape.

— Streams flow from higher-elevation isolines to lower-elevation isolines.

— Isolines bend uphill when they cross streams.

70 [1] Allow 1 credit. Acceptable responses include, but are not limited to:

— When precipitation increases, the water table will rise (or get closer to the surface).

— The level of the water table above the bedrock will increase with greater precipitation.

— Less precipitation will cause a lower water table.

— There is a direct relationship between the amount of precipitation and the height of the water table above the impermeable bedrock.

71 [1] Allow 1 credit. Acceptable responses include, but are not limited to:

— an increase in temperature

— The stream's surface area increased.

— increase in wind

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

U-shaped:

— It was eroded by glaciers.

— A glacier formed the valley.

— formed by glacial ice

V-shaped:

— Running water cut the V-shaped valley.

— A stream formed the valley.

73 [1] Allow 1 credit for *X* and a correct explanation. Acceptable explanations include, but are not limited to:

— Point *X* is on the outside of a meander curve.

— Stream velocity is greater at point *X*.

— More deposition occurs at *Y*.

74 [1] Allow 1 credit. Acceptable responses include, but are not limited to:

— The stream began to flow over a nearly flat landscape.

— Stream velocity decreased.

— Gradient decreases from the mountains to the floodplain.

— The stream flows more slowly on the floodplain.

— The floodplain is composed of loose sediment.

75 [1] Allow 1 credit for sandstone.

76 [1] Allow 1 credit for Fordham gneiss *or* gneiss.

77 [1] Allow 1 credit. Acceptable responses include, but are not limited to:

— The marble shows deformation.

— The rock formation is folded.

— The marble is located between two other regional metamorphic rocks.

78 [1] Allow 1 credit for *two* correct responses. Acceptable responses include, but are not limited to:

— uplift *or* folding

— erosion

— weathering

— subsidence *or* submergence

— deposition

79 [1] Allow 1 credit for *two* different chemical elements. Acceptable responses include, but are not limited to:

— Ca *or* calcium

— Na *or* sodium

— Al *or* aluminum

— Si *or* silicon

— O *or* oxygen

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

— hardness of 5–6

— black to green color

— shows cleavages *or* cleaves in two directions at a 90° angle

— nonmetallic luster

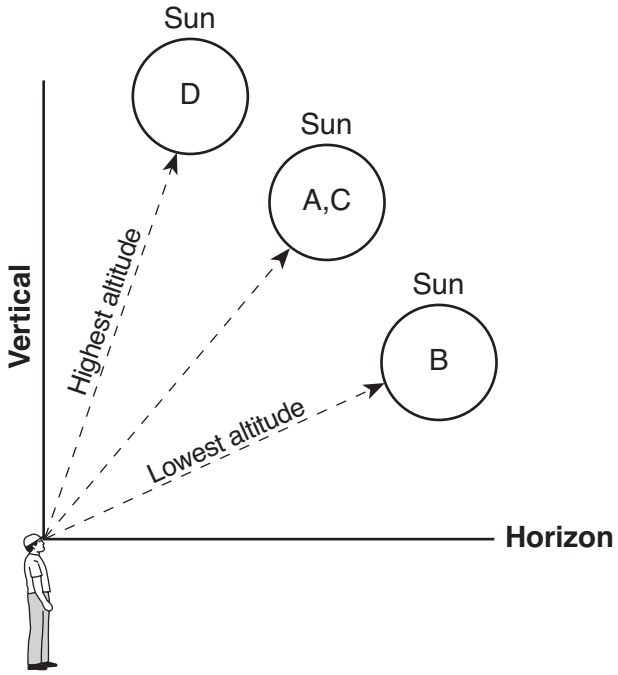
81 [1] Allow 1 credit for gneiss.

82 [1] Allow 1 credit for *D or* June 21.

83 [1] Allow 1 credit for 12 h.

84 [1] Allow 1 credit if *all four* letters are written within or adjacent to the correct circles.

Example of a 1-credit response:



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

Relative depth:

— greater depth

— deeper

Relative temperature:

— higher temperature

— hotter

Regents Examination in Physical Setting/Earth Science

January 2012

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

The *Chart for Determining the Final Examination Score for the January 2012 Regents Examination in Physical Setting/Earth Science* will be posted on the Department's web site at: http://www.p12.nysed.gov/apda/ on Thursday, January 26, 2012. 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

January 2012 Physical Setting/Earth Science			
Question Numbers			
Key Ideas/Performance Indicators	Part A	Part B	Part C
Standard 1			
Math Key Idea 1	11, 15	50	68
Math Key Idea 2	20, 22, 27, 29, 31	36, 41, 44, 55, 56	66, 67, 75, 85
Math Key Idea 3		55	
Science Inquiry Key Idea 1	9, 27, 34	38, 47, 48, 49, 52, 53, 59, 60, 61, 64	69, 72, 74
Science Inquiry Key Idea 2			
Science Inquiry Key Idea 3	12, 14, 19	40	
Engineering Design Key Idea 1			
Standard 2			
Key Idea 1	18		
Key Idea 2			
Key Idea 3			
Standard 6			
Key Idea 1		39, 47, 59, 61	69, 70, 73, 74, 78, 82
Key Idea 2	6, 8, 13, 21, 23, 24, 26, 28, 30, 33, 35	37, 39, 40, 42, 43, 44, 45, 46, 47, 48, 49, 51, 54, 62, 63	66, 67, 69, 70, 73, 76, 77, 79, 80, 81, 82, 83, 84, 85
Key Idea 3	32	57, 58, 60	
Key Idea 4			73
Key Idea 5	20, 25, 34	44, 51, 52, 53, 54, 56, 65	71, 82, 83, 84, 85
Key Idea 6			
Standard 7			
Key Idea 1			
Key Idea 2			
Standard 4			
Key Idea 1	1, 2, 3, 4, 5, 6, 7, 8, 11, 12, 13, 20, 22, 28, 31, 32, 35	38, 39, 40, 41, 49, 50, 51, 52, 53, 54, 57, 58, 59, 60, 65	70, 71, 76, 78, 82, 84
Key Idea 2	9, 10, 14, 17, 18, 19, 21, 23, 24, 25, 26, 27, 29, 30, 33, 34	36, 37, 42, 43, 44, 45, 46, 47, 48, 55, 56, 61, 62, 63, 64	66, 67, 68, 69, 72, 73, 74, 77, 83
Key Idea 3	15, 16		75, 79, 80, 81, 85
Reference Tables			
ESRT 2011 Edition (Revised)	1, 6, 8, 9, 10, 11, 12, 14, 15, 16, 17, 18, 20, 21, 23, 25, 26, 29, 30, 32, 35	36, 37, 40, 41, 42, 43, 44, 45, 57, 58, 60, 61, 62, 65	68, 75, 76, 77, 79, 80, 81