

FOR TEACHERS ONLY

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

PS-ES PHYSICAL SETTING/EARTH SCIENCE

Wednesday, January 23, 2008 — 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 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 2	13 3	25 2	36 2	44 1
2 3	14 4	26 1	37 2	45 2
3 4	15 3	27 1	38 3	46 1
4 3	16 2	28 4	39 4	47 2
5 3	17 1	29 3	40 1	48 1
6 2	18 1	30 3	41 2	49 3
7 2	19 2	31 4	42 4	50 4
8 1	20 3	32 4	43 3	
9 3	21 1	33 1		
10 1	22 4	34 2		
11 1	23 1	35 4		
12 3	24 4			

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 Wednesday, January 23, 2008. 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:

- calcite
- CaCO_3

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

- Limestone reacts with acids in groundwater.
- Acids in water cause limestone to dissolve.
- chemical weathering of limestone
- Water flowing through cracks removes limestone.

53 [1] Allow 1 credit for .

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

- seismic wave recordings
- *P*-waves and *S*-waves
- seismograms
- damage reports

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

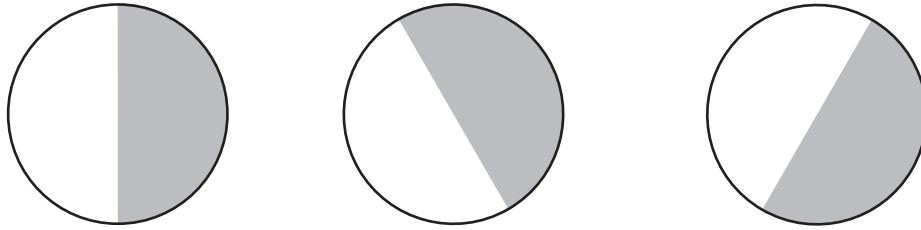
- They are all located at or near tectonic plate boundaries.
- They are located where crustal plates meet.

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

- convection currents
- convection
- density currents

- 57 [1] Allow 1 credit if approximately $\frac{1}{2}$ of the Moon is shaded on the right-hand side.

Examples of 1-credit responses:



- 58 [1] Allow 1 credit. Acceptable responses include, but are not limited to:
- Moon phases are caused by the Moon revolving around Earth.
 - The Moon traveling around Earth causes the Moon to show a cycle of phases.
 - Different amounts of the lighted half of the Moon are seen from Earth.
- 59 [1] Allow 1 credit for first quarter.
- 60 [1] Allow 1 credit. Acceptable responses include, but are not limited to:
- The Moon's rate of rotation equals the Moon's rate of revolution.
 - The Moon completes one spin on its axis in the same amount of time it takes to complete one orbit around Earth.

61 [1] Allow 1 credit if both the color and classification are correct.

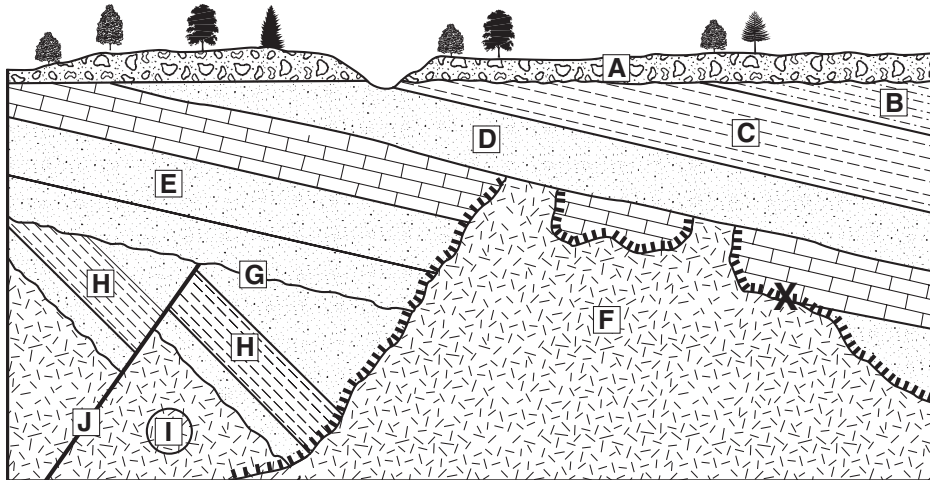
Example of a 1-credit response:

Star	Color	Classification
<i>Procyon B</i>	yellow or yellow white	white dwarf

62 [1] Allow 1 credit for circling letter *I*.

63 [1] Allow 1 credit if the center of the **X** is located anywhere in the contact metamorphic zone in the limestone layer.

Example of a correct response for questions 62 and 63:



Key	
	Igneous rock
	Contact metamorphism

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

- There is no contact metamorphism shown in rock unit *D*.
- Rock unit *F* was eroded, then rock unit *D* was formed.
- There is a buried erosional surface between *F* and *D*.
- Rock unit *D* is on top of rock unit *F*.

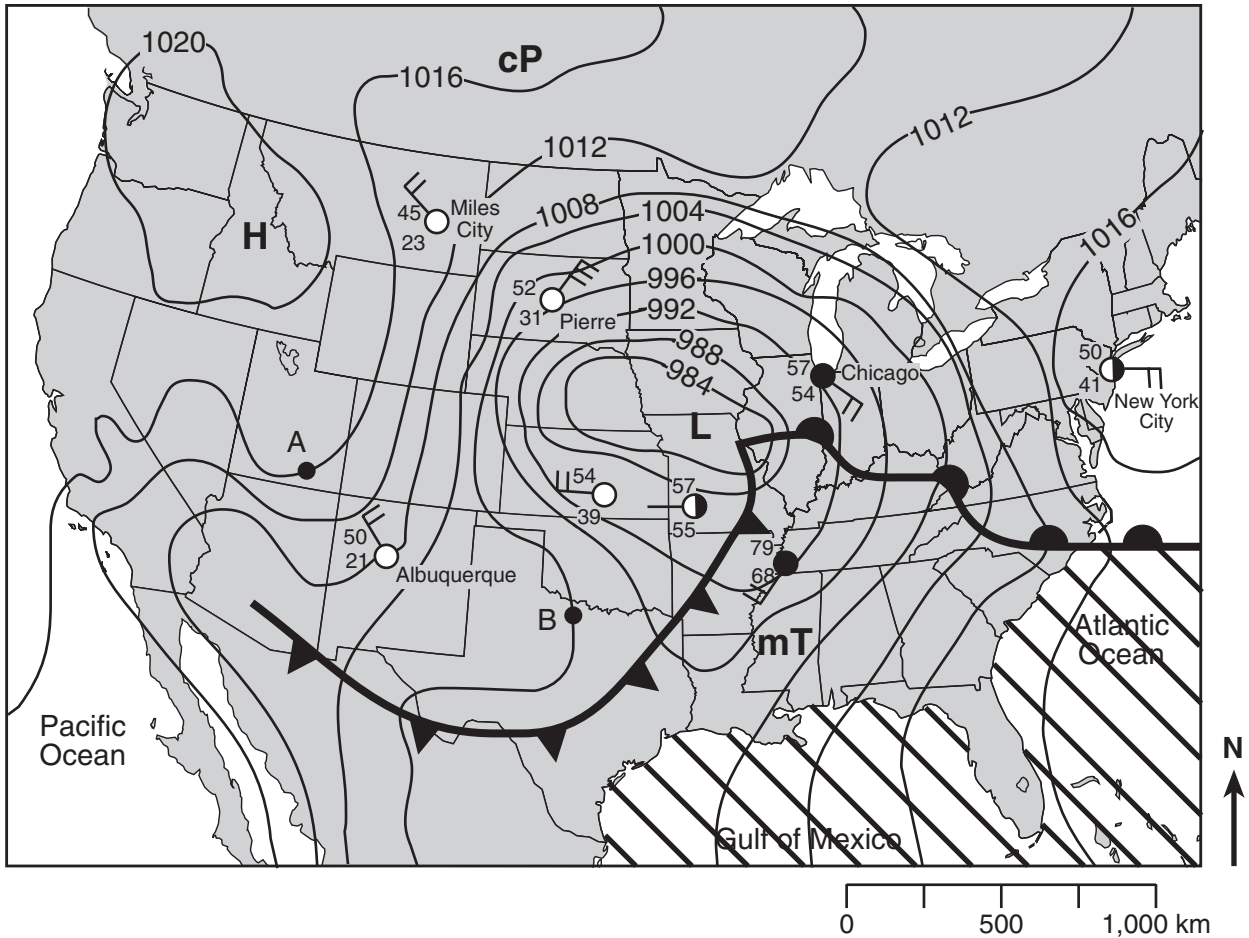
65 [1] Allow 1 credit. Acceptable responses include, but are not limited to:

- Rock unit *H* was displaced by movement along a fault.
- Rock unit *H* was broken when an earthquake occurred.

Part C

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

66 [1] Allow 1 credit if the center of the student's **X** is located over the water in the diagonally lined area.

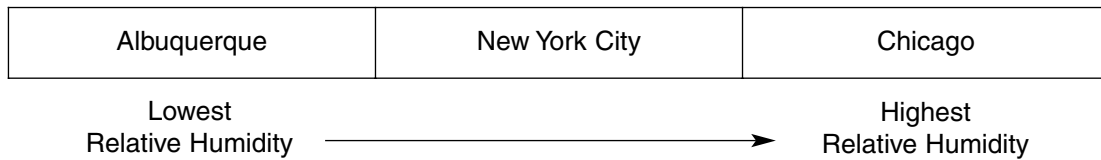


67 [2] Allow a maximum of 2 credits, allocated as follows:

- Allow 1 credit for any value from 0.016 to 0.018.
- Allow 1 credit for the correct units. Acceptable responses include, but are not limited to:
 - millibars per kilometer
 - mb/km

- 68** [1] Allow 1 credit. Acceptable responses include, but are not limited to:
- The isobars are close together between Miles City and Pierre.
 - There is a large pressure gradient between Miles City and Pierre.
 - The feathers on the station models indicate strong winds in that area.

- 69** [1] Allow 1 credit.



- 70** [1] Allow 1 credit. Acceptable responses include, but are not limited to:
- inward
 - counterclockwise
 - counterclockwise and toward the center

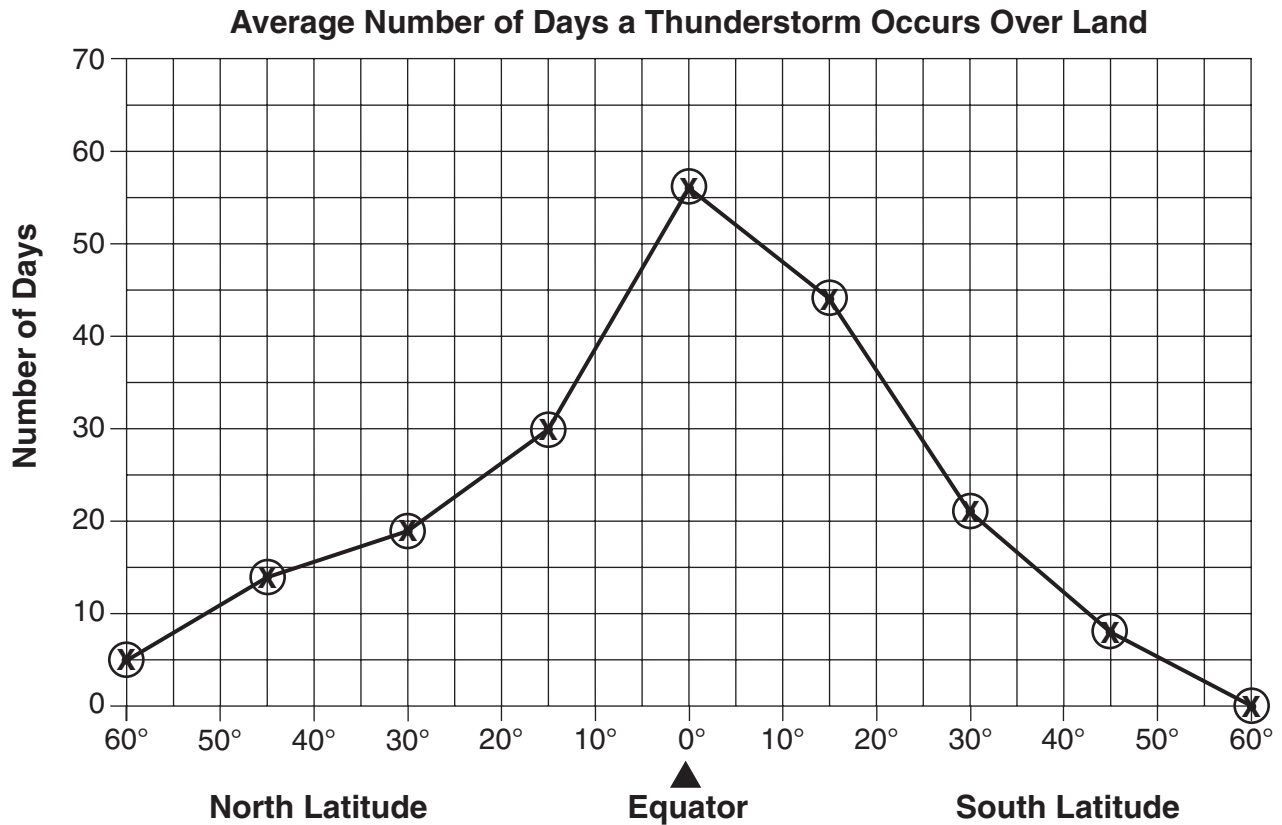
- 71** [1] Allow 1 credit for 11 p.m. Do *not* allow credit for 11 or 11 a.m.

- 72** [1] Allow 1 credit. Acceptable responses include, but are not limited to:
- Earth rotates at a rate of $15^\circ/\text{hr}$.
 - Earth's period of rotation is 24 hours.
 - Earth spins 360° in 24 hours.

- 73 [1] Allow 1 credit if the centers of eight or nine **X**s are within the circles shown on the graph and are correctly connected with a line that passes through the circles.

Note: An overlay should be used to rate this graph.

Example of a 1-credit response:



- 74 [1] Allow 1 credit. Acceptable responses include, but are not limited to:
- As latitude increases, the number of days with thunderstorms decreases.
 - Lower latitudes have more thunderstorms.
 - an inverse relationship between latitude and number of days with thunderstorms

75 [1] Allow 1 credit for evaporation.

76 [1] Allow 1 credit. Acceptable responses include, but are not limited to:

— Condensation is the phase change from water vapor (gas) to water (liquid).

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

— The soil is saturated.

— Rate of rainfall exceeds the rate of infiltration.

— The ground is frozen.

— The land has a steep slope.

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

— Plants release water into the air by transpiration.

— Runoff is slowed by plants, so more infiltration can occur.

79 [1] Allow 1 credit for 80 calories/gram.

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

— moraines

— grooved bedrock

— scratched bedrock

— polished bedrock

— U-shaped valleys

81 [1] Allow 1 credit for 24 hours.

82 [1] Allow 1 credit if both latitude and longitude are correct.

Latitude: 80° S

Longitude: 120° W

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

- unsorted
- mixed
- not in layers

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

- snow removal by wind
- decreased rate of ice flow
- increased melting
- global warming
- iceberg formation
- decreased snowfall

Regents Examination in Physical Setting/Earth Science

January 2008

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

The *Chart for Determining the Final Examination Score for the January 2008 Regents Examination in Physical Setting/Earth Science* will be posted on the Department's web site <http://www.emsc.nysed.gov/osa/> on Wednesday, January 23, 2008. 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 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 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.

Map to Core Curriculum

January 2008 Physical Setting/Earth Science			
Question Numbers			
Key Ideas/Performance Indicators	Part A	Part B	Part C
Standard 1			
Math Key Idea 1	18		67, 73
Math Key Idea 2	2, 7, 11, 16, 25, 26	50, 53, 61	72, 74
Math Key Idea 3	29	60	68
Science Inquiry Key Idea 1	15, 31	43, 56, 57, 58	81, 84
Science Inquiry Key Idea 2			
Science Inquiry Key Idea 3	2, 4, 9, 11, 26, 28, 30, 32		
Engineering Design Key Idea 1			
Standard 2			
Key Idea 1			
Key Idea 2			
Key Idea 3			
Standard 6			
Key Idea 1	12, 35	56, 57, 58, 65	75, 76, 77, 78, 79, 83
Key Idea 2	9, 12, 13, 18, 22, 23, 24, 32, 34, 35	36, 37, 38, 39, 40, 41, 42, 44, 45, 46, 47, 48, 49, 50, 51, 55, 57, 59, 61, 62, 63, 64, 65	66, 67, 68, 69, 71, 75, 80, 81, 82
Key Idea 3		54	67, 68, 69, 70
Key Idea 4			
Key Idea 5	13, 29	48, 50, 52, 57, 59	66, 70, 77, 84
Key Idea 6			
Standard 7			
Key Idea 1			
Key Idea 2			
Standard 4			
Key Idea 1	1, 2, 3, 4, 5, 6, 11, 28, 29, 30, 31, 32	43, 47, 48, 49, 50, 57, 58, 59, 60, 61, 62, 63, 64, 65	71, 72, 75, 76, 77, 78, 79, 82
Key Idea 2	7, 8, 9, 10, 12, 13, 14, 15, 16, 17, 20, 21, 23, 24, 25, 26, 27, 33, 34, 35	36, 37, 38, 39, 40, 41, 45, 46, 50, 52, 54, 55, 56	66, 67, 68, 69, 70, 73, 74, 80, 81, 83, 84
Key Idea 3	18, 19, 22	42, 43, 44, 51, 53, 63	
Reference Tables			
ESRT 2001 Edition	2, 4, 7, 9, 11, 15, 16, 17, 18, 19, 21, 22, 24, 25, 26, 28, 30, 31, 32	36, 37, 41, 42, 43, 44, 46, 51, 52, 53, 55, 56, 60, 61, 63	66, 67, 68, 69, 79

