

FOR TEACHERS ONLY

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

PS-ES PHYSICAL SETTING/EARTH SCIENCE

Wednesday, January 26, 2005 — 1:15 to 4:15 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. Visit the site <http://www.emsc.nysed.gov/osa/> and select the link "Latest Information" for any recently posted information regarding this examination. This site should be checked before the rating process for this examination begins and at least one more time before the final scores for the examination are recorded.

Part A and Part B-1

Allow 1 credit for each correct response.

Part A			Part B-1	
1 4	13 4	25 2	36 3	44 1
2 2	14 2	26 3	37 3	45 2
3 3	15 4	27 4	38 1	46 2
4 4	16 3	28 4	39 3	47 3
5 4	17 4	29 2	40 3	48 2
6 2	18 4	30 2	41 2	49 4
7 2	19 1	31 2	42 1	50 2
8 1	20 3	32 1	43 1	
9 1	21 1	33 1		
10 2	22 1	34 2		
11 3	23 4	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 Administering and 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 checkmark 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 26, 2005. 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.

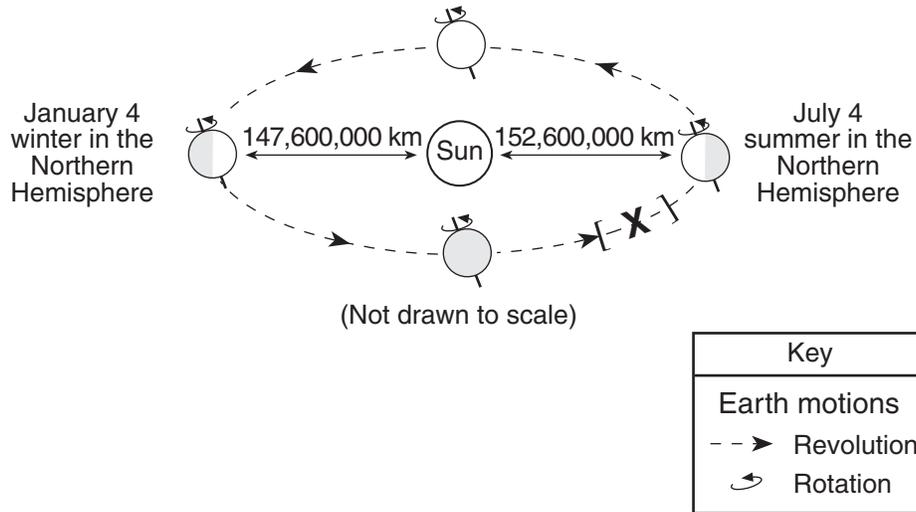
All student answer papers that receive a scaled score of 60 through 64 **must** be scored a second time. For the second scoring, a different committee of teachers may score the student's paper or the original committee may score the paper, except that no teacher may score the same open-ended questions 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 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 for the correct placement of the **X** on the diagram. The center of the **X** must be between the brackets indicated on Earth’s orbit, as shown in the diagram below.



- 52 [1] Allow 1 credit for a correct response. Acceptable responses include, but are not limited to, these examples:

The North Pole is tilted toward the Sun in the summer.

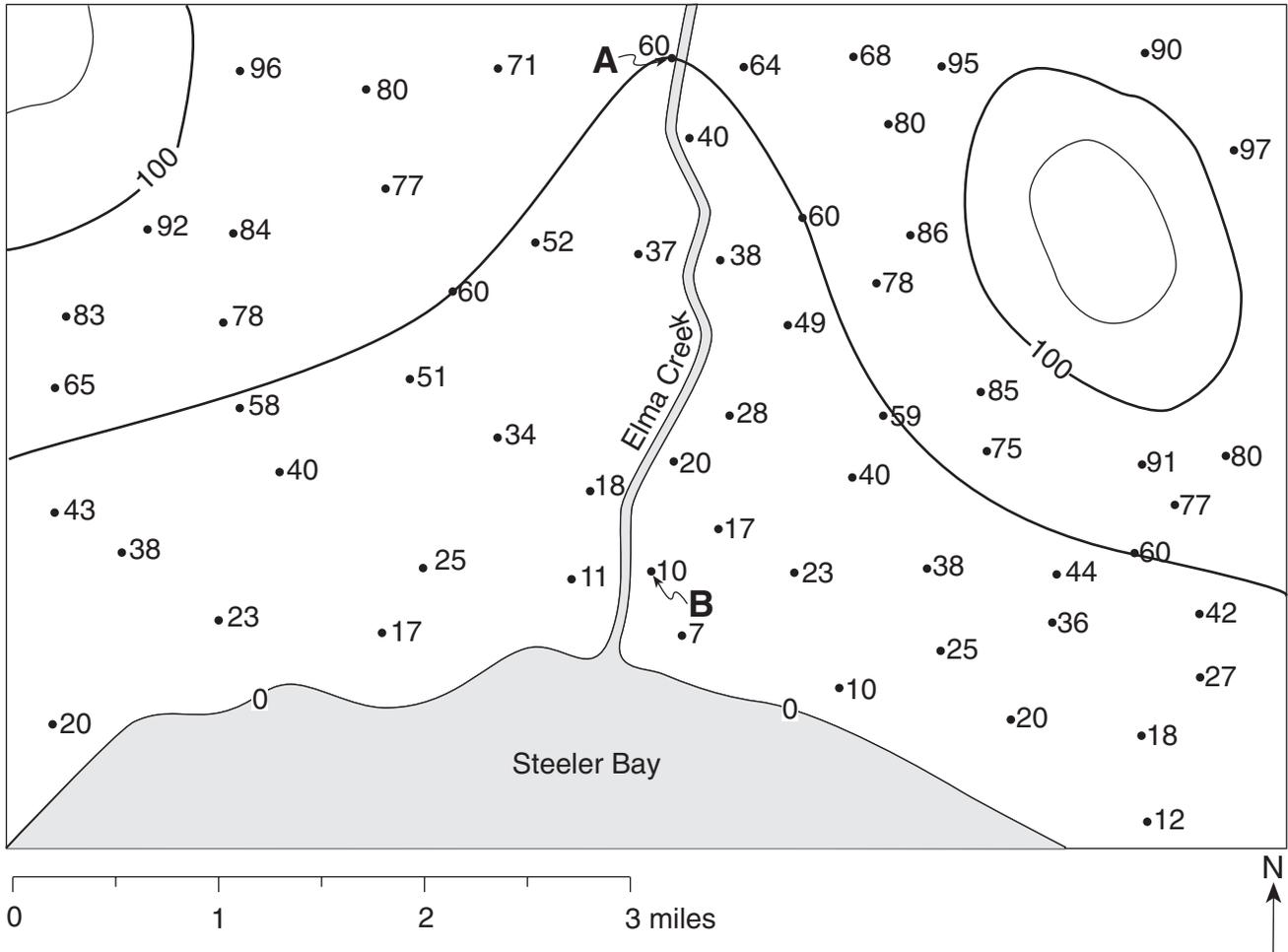
In summer, the Sun is higher in the sky due to the tilt of Earth’s axis.

New York State receives higher angles of insolation in summer when Earth is farthest from the Sun.

New York State receives lower angles of insolation in winter when Earth is closest to the Sun.

greater duration of insolation

- 53 [1] Allow 1 credit for correctly drawing the 60-foot contour line. It must extend to the edges of the map to receive credit. If other contour lines are drawn, all lines must be correct to receive credit. Acceptable responses include, but are not limited to, this example:



- 54 [1] Allow 1 credit for a correct response. Acceptable responses include, but are not limited to, these examples:
 south
 southerly direction
 north to south

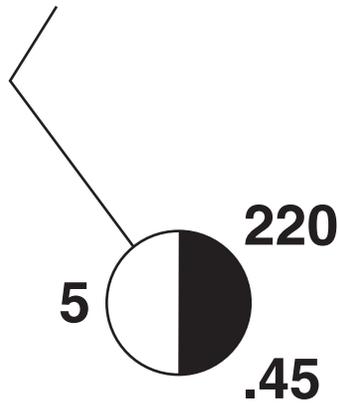
- 55 [2] Allow 1 credit for the value of **20** (± 1).

and

Allow 1 credit for correct units. Acceptable responses include, but are not limited to, these examples:

- feet/mile
- ft/mi
- feet per mile

- 56 [2] An example of a correct response is shown below.



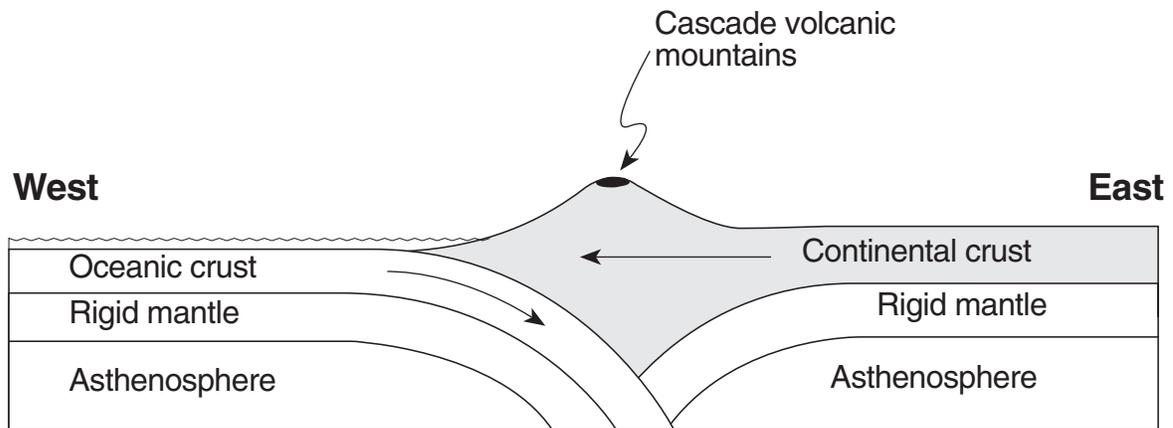
Allow 2 credits if five or six variables are correctly plotted. The feather for wind speed may be on either side of the staff. Allow credit for any overcast indication that shades half of the circle.

Allow only 1 credit if only three or four variables are correctly plotted.

Note: Do *not* allow credit for 1022.2 or 22.0 or 220 mb; 5 mi; .45 inches or 45.

- 57 [1] Allow 1 credit for **Holocene** Epoch.

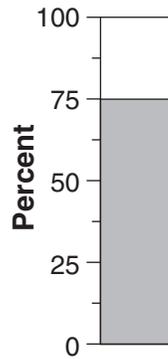
- 58 [1] Allow 1 credit for a correct response. Acceptable responses include, but are not limited to, this example:



(Not drawn to scale)

- 59 [1] Allow 1 credit for **lithosphere**.

- 60 [1] Allow 1 credit for the correct response shown below.



- 61 [1] Allow 1 credit for 5.7×10^3 years or **5,700** years.

- 62 [2] Allow 2 credits, 1 credit for *each* of two correct responses. Acceptable responses include, but are not limited to, these examples:

Air rises.

Air expands.

Air cools.

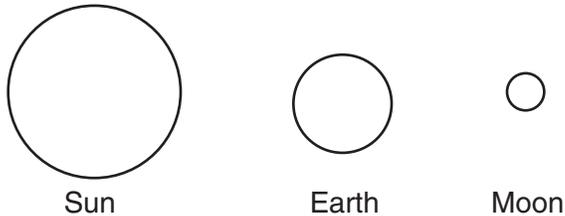
The temperature reaches the dewpoint.

Water vapor condenses.

Part C

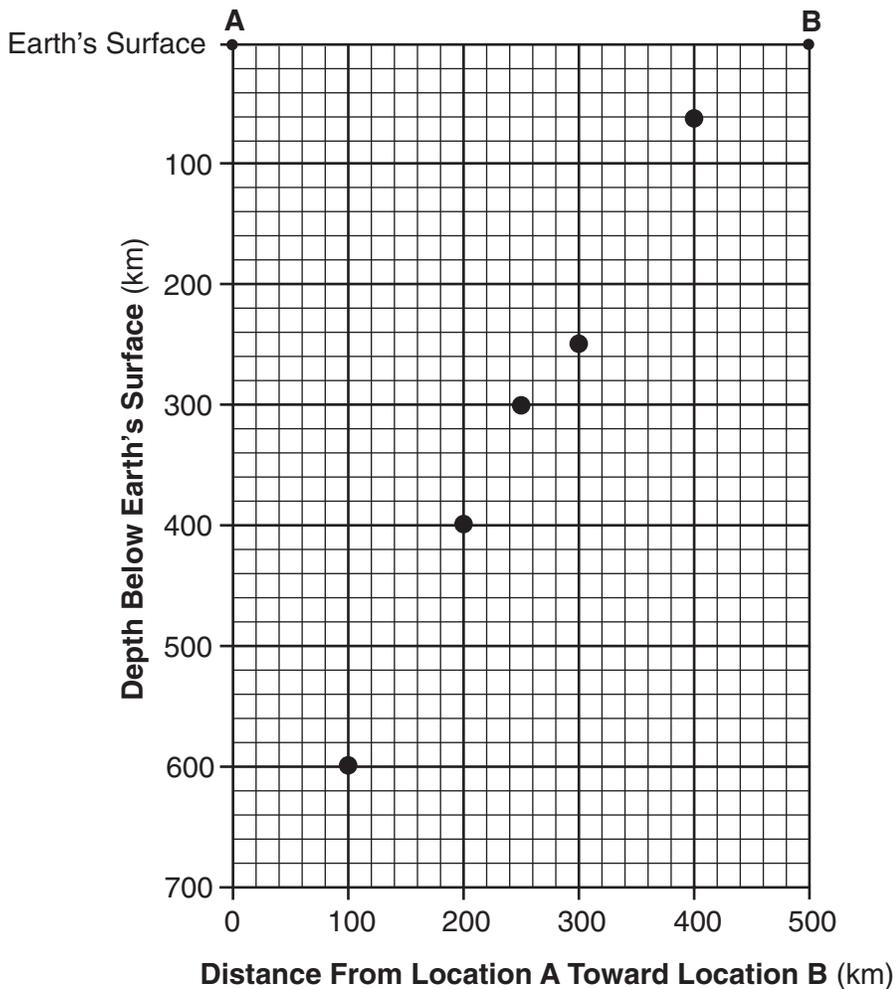
Allow a total of 20 credits for this part. The student must answer all questions in this part.

- 63** [1] Allow 1 credit for a correct response. Acceptable responses include, but are not limited to, this example:
February has only 28 or 29 days and a complete cycle of the Moon phases takes $29\frac{1}{2}$ days.
- 64** [1] Allow 1 credit for **13**.
- 65** [1] Allow 1 credit for Earth being located between the Sun and the Moon. Shading of Earth and the Moon is *not* necessary. The Sun, the Moon, and Earth must be identified but do *not* need to be drawn to scale. Acceptable responses include, but are not limited to, this example:



- 66** [2] Allow 2 credits, 1 credit for *each* of two correct responses. Acceptable responses include, but are not limited to, these examples:
- Friction from Earth's atmosphere causes many meteors to burn up.
 - Many meteors fall into the ocean so craters aren't visible.
 - Old craters are eroded away.
 - Vegetative growth may hide evidence of a crater.
 - Plate tectonics has destroyed some craters.
 - Deposition has buried some craters.

- 67 [1] Allow 1 credit if four or five points are correctly plotted (± 10 km). Acceptable responses include, but are not limited to, this example:



- 68 [1] Allow 1 credit for a correct response. Acceptable responses include, but are not limited to, these examples:

Mariana Trench
 trench
 convergent plate boundary
 subduction zone
 overriding plate
 subduction plate

- 69 [1] Allow 1 credit for a correct response. Acceptable responses include, but are not limited to, these examples:

Stockton sandstone is on the bottom.
 Law of Superposition

- 70** [1] Allow 1 credit for a correct response. Acceptable responses include, but are not limited to, these examples:
- Contact metamorphism can be found on both sides of the Palisade Sill within the Brunswick sandstone.
 - An intrusion is younger than the rock it intrudes.
- 71** [1] Allow 1 credit for a correct response. Acceptable responses include, but are not limited to, these examples:
- earthquakes
 - volcanic eruptions
 - The rifting of North America occurred.
 - Pangea began to break up.
 - North America and Africa began to separate.
- 72** [1] Allow 1 credit for a correct response. Acceptable responses include, but are not limited to, these examples:
- The lower latitudes have longer growing seasons.
 - As latitude increases, the length of the growing season decreases.
- 73** [1] Allow 1 credit for a correct response. Acceptable responses include, but are not limited to, these examples:
- modifying influence of a large body of water
 - Prevailing winds off the lake keep temperatures warmer.
 - nearness to a large body of water
- 74** [1] Allow 1 credit for a correct response. Acceptable responses include, but are not limited to, these examples:
- As elevation increases, the growing season is shorter.
 - The growing season is shorter in the mountain region than in the lowland region.
- 75** [1] Allow 1 credit for a correct response. Acceptable responses include, but are not limited to, these examples:
- unconformity
 - nonconformity
 - time gap in the rock record
 - buried erosional surface

- 76** [1] Allow 1 credit for a correct response. Acceptable responses include, but are not limited to, these examples:
- heat and pressure
 - recrystallizing of preexisting rock
 - metamorphism
- 77** [1] Allow 1 credit for a correct response. Acceptable responses include, but are not limited to, these examples:
- Hexameroceras*
 - Eucalyptocrinus*
 - Eurypterus*
 - Cooksonia*
 - Cystiphyllum*
 - Eospirifer*
- 78** [1] Allow 1 credit for a correct response. Acceptable responses include, but are not limited to, these examples:
- coarse
 - nonvesicular
 - large grains
 - big crystals
- 79** [2] Examples of correct responses are shown below.
- Mineral *A* — potassium feldspar *or* orthoclase
 - Mineral *B* — plagioclase feldspar *or* Na–Ca feldspar
 - Mineral *C* — quartz
- Allow 2 credits if all three minerals are correctly identified.
 Allow only 1 credit if only one or two minerals are correctly identified.
- 80** [1] Allow 1 credit for a correct response. Acceptable responses include, but are not limited to, these examples:
- melting and solidification
 - melting and crystallization
 - cooling and crystallization

The *Chart for Determining the Final Examination Score for the January 2005 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 26, 2005. 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.

Map to Core Curriculum

January 2005 Physical Setting/Earth Science			
Question Numbers			
Key Ideas/Performance Indicators	Part A	Part B	Part C
Standard 1			
Math Key Idea 1		55	67
Math Key Idea 2	16,35		72,74
Math Key Idea 3			
Science Inquiry Key Idea 1	28	38,43,44,49,52	63,66,68,70,73
Science Inquiry Key Idea 2			
Science Inquiry Key Idea 3	1,3,8,10,11,12, 18,20,22,23,26, 27,30	48,59,61	71,77,79,80
English Description Key Idea 1			
Standard 2			
Key Idea 1			
Key Idea 2		41,42	
Key Idea 3			
Standard 6			
Key Idea 1	17,21,34	50,57,62	
Key Idea 2	13,14,19,24,25, 28,31,32,33	16,37,38,39,42, 43,45,47,51,53, 54,56	65,69,70,73,74, 75,78
Key Idea 3		53	
Key Idea 4			
Key Idea 5	25	40,41,46,58,60, 62,64,76	
Key Idea 6			
Standard 7			
Key Idea 1			
Key Idea 2			
Standard 4			
Performance Indicator 1	1,2,3,4,5,7,10, 11,21,22,29	36,37,38,44,48, 49,50,51,52,57, 60,61	63,64,64,66,69, 70,71,75,76,77
Performance Indicator 2	6,8,9,12,13,14, 15,16,17,18,19, 25,28,29,30,31, 32,33,34,35	39,40,41,42,43, 45,46,47,53,54, 55,56,57,58,59, 62	66,67,68,71,72, 73,74
Performance Indicator 3	18,20,23,24,26, 27		76,78,79,80
Reference Tables			
ESRT 2001 Edition	1,3,8,10,11,12, 13,16,18,19,20, 22,23,26,27,30, 32,33	37,39,40,41,42, 48,55,56,57,59, 61	68,71,76,77,78, 79,80

