FOR TEACHERS ONLY

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

PS–ES PHYSICAL SETTING/EARTH SCIENCE

Wednesday, January 24, 2007 — 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

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

Part B–1

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

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 24, 2007. 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

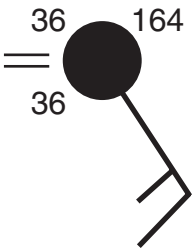
Allow a total of 15 credits for this part. The student must answer all questions in this part.

51 [2] Allow a maximum of 2 credits, allocated as follows:

- Allow 2 credits if four or five of the weather map symbols are shown in the correct positions and in the proper format.
- Allow 1 credit if only two or three of the weather map symbols are shown in the correct positions and in the proper format.

Note: The feathers for wind speed may be placed on either side of the staff.

Example of a 2-credit response:



52 [2] Allow a maximum of 2 credits, allocated as follows:

- Allow 1 credit for any value from 9.75 to 10.25.
- Allow 1 credit for the correct units. Acceptable responses include, but are not limited to:
  - — ft/mi
  - — feet/mile
  - — ft per mile

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

- — The slope decreased.
- — The gradient decreased from location *B* to location *C*.
- — The surface was steeper near *B* and flatter near *C*.

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

- — less than 0.0004 cm
- — any number given that is less than 0.0004 cm

55 [1] Allow 1 credit for slate.

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

— nonvesicular

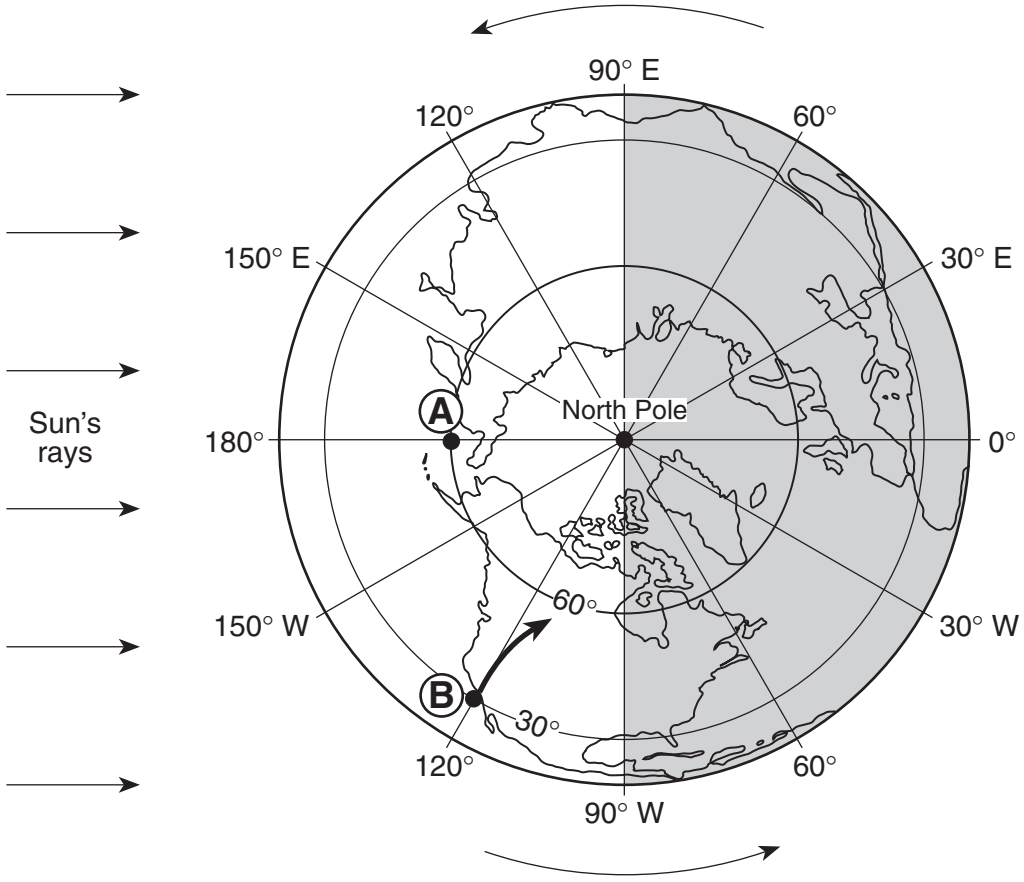
— coarse

— large crystal

57 [1] Allow 1 credit for an arrow beginning at point *B* and curving to the northeast or curving to the right. Allow credit even if the arrow is not curved or if it does not start at point *B*, but is drawn from southwest to northeast.

Note: Do *not* allow credit if the arrow extends past the 60° north latitude line.

Example of a 1-credit response:



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

— 12 noon

— noon

— 12 p.m.

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

— March 20, 21, *or* 22

— September 21, 22, 23, *or* 24

— equinox

60 [1] Allow 1 credit. Acceptable responses include, but are not limited to:

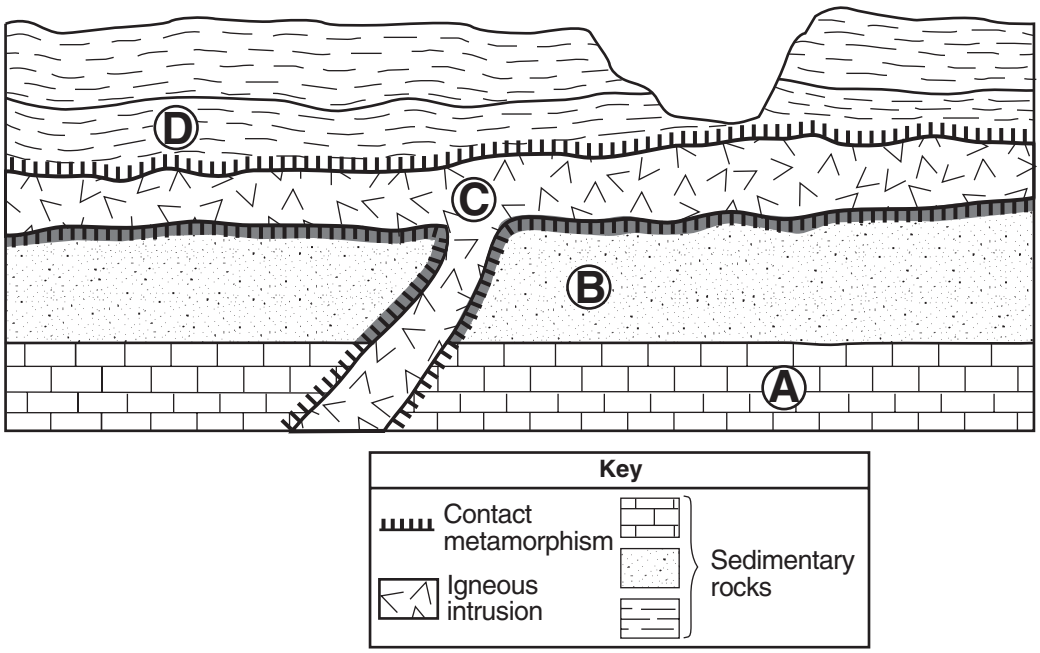
— *B* is located at a lower latitude.

— *B* is located closer to the equator.

— *A* is farther north.

— *A* is located at a greater distance from the latitude receiving direct Sun rays on this day.

61 [1] Allow 1 credit for placing an **X** whose center falls within the shaded zone of contact metamorphism shown in the diagram below.



62 [1] Allow 1 credit for calcite.

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

— Intrusions are younger than any rock they metamorphose.

— Contact metamorphism can be seen between rock layer *D* and the igneous intrusion.

Part C

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

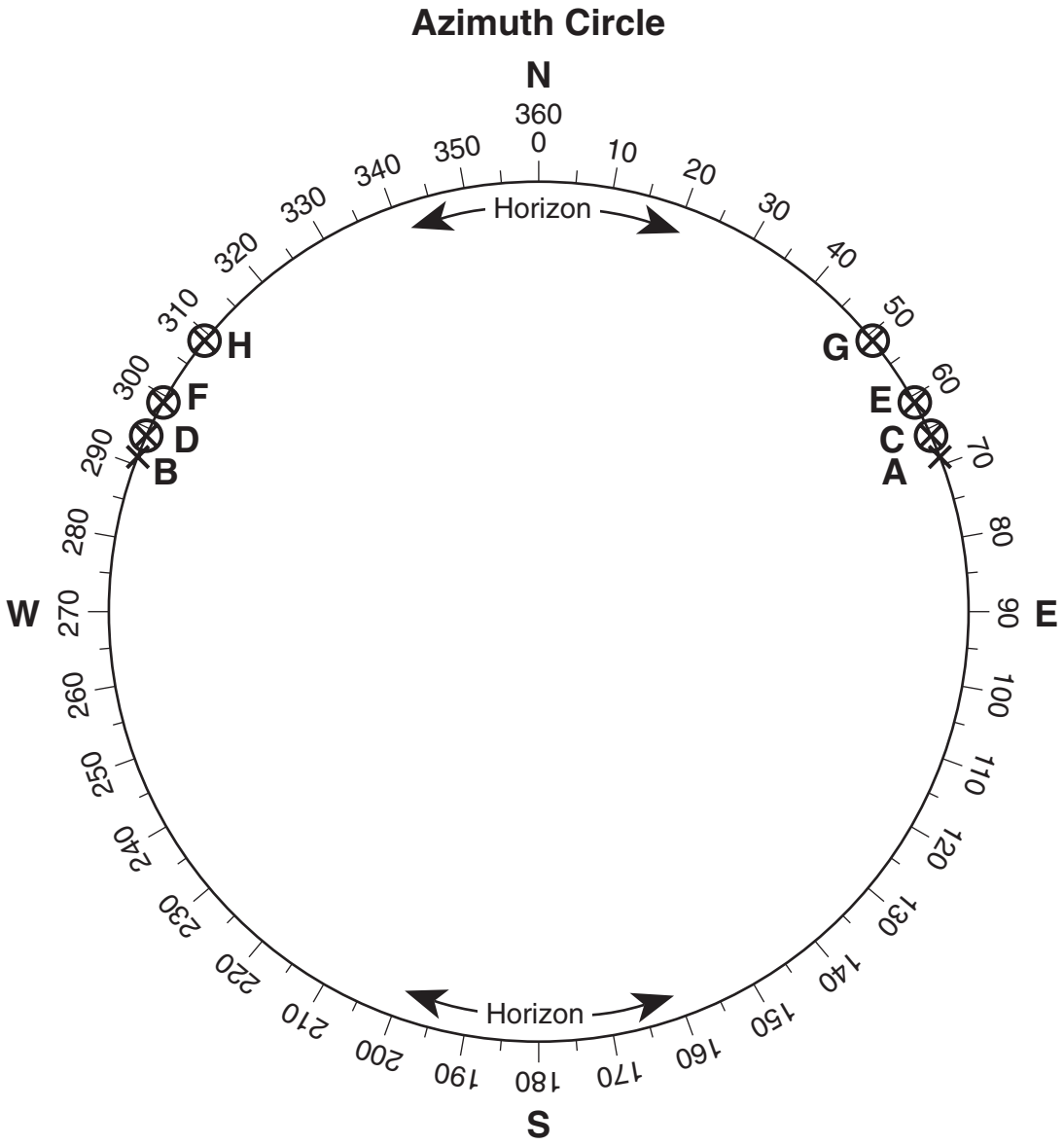
64 [2] Allow a maximum of 2 credits, allocated as follows:

- Allow 2 credits if five or six **X**s are correctly plotted and labeled. The center of each **X** must fall within the circles shown in the diagram below.

- Allow 1 credit if only three or four **X**s are correctly plotted and labeled. The center of each **X** must fall within the circles shown in the diagram below.

or

Allow 1 credit if five or six **X**s are correctly plotted but are not correctly labeled. The center of each **X** must fall within the circles shown in the diagram below.



65 [1] Allow 1 credit. Acceptable responses include, but are not limited to:
— As the latitude of the observer increases, the azimuth decreases.
— As the latitude increases, the sunrise is farther north of east.

66 [1] Allow 1 credit for frozen gases.

67 [1] Allow 1 credit for any value from 150 K to 200 K.

68 [1] Allow 1 credit. Acceptable responses include, but are not limited to:
— As distance from the Sun increases, temperature decreases.
— There is an inverse relationship between distance and temperature.

69 [1] Allow 1 credit for 5.2 AU.

70 [1] Allow 1 credit. Acceptable responses include, but are not limited to:
— Warmer air rises because it is less dense.
— As temperature increases, density decreases.

71 [1] Allow 1 credit for 43.5°F.

72 [1] Allow 1 credit for 100%.

73 [1] Allow 1 credit for any value from 500°C to 1200°C.

74 [1] Allow 1 credit for Indian-Australian Plate.

75 [1] Allow 1 credit. Acceptable responses include, but are not limited to:
— subduction
— convergence
— plate collision

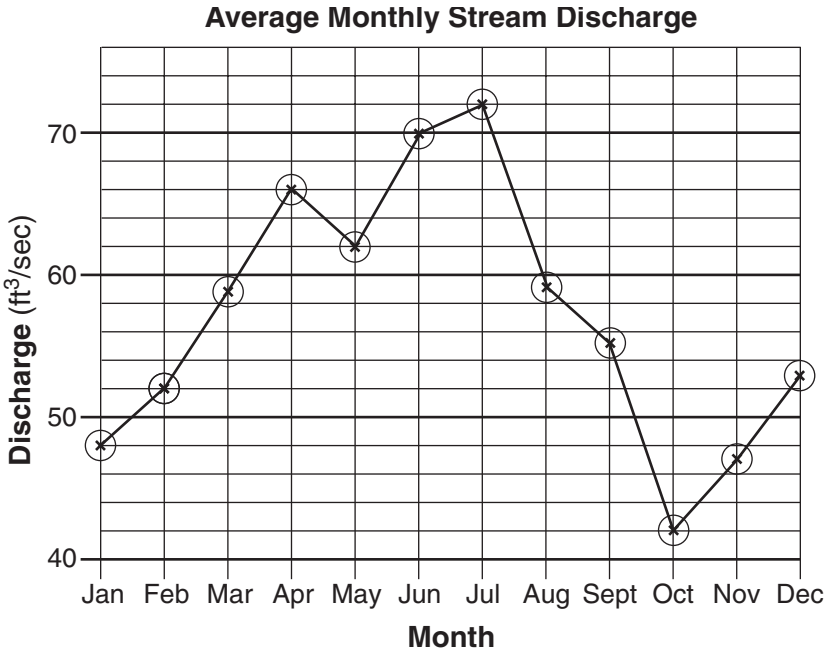
76 [1] Allow 1 credit. Acceptable responses include, but are not limited to:

— move to higher ground

— evacuate

— move inland

77 [1] Allow 1 credit if the center of 10, 11, or 12 **X**s are plotted within the circles shown on the graph below and are correctly connected with a line that passes within the circles.



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

— As stream discharge increases, suspended sediment increases.

— There is a direct relationship between stream discharge and suspended sediment.

79 [1] Allow 1 credit. Acceptable responses include, but are not limited to:

— Snowmelt in April results in a greater discharge.

— greater rainfall in April

— Saturated ground would cause more runoff in April.

80 [1] Allow 1 credit for stratosphere.

81 [1] Allow 1 credit. Acceptable responses include, but are not limited to:

— The ozone layer absorbs some of the harmful ultraviolet radiation from the Sun.

— The layer decreases the amount of ultraviolet radiation reaching Earth.

— The ozone protects humans from skin cancer and eye damage.

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

— June 20, 21, *or* 22

— the first day of summer

— summer solstice

Regents Examination in Physical Setting/Earth Science

January 2007

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

The *Chart for Determining the Final Examination Score for the January 2007 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 24, 2007. 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 2007 Physical Setting/Earth Science			
Question Numbers			
Key Ideas/Performance Indicators	Part A	Part B	Part C
Standard 1			
Math Key Idea 1		52	64, 69, 71, 77
Math Key Idea 2	16, 30, 34	40	65, 66, 67, 68, 78
Math Key Idea 3			
Science Inquiry Key Idea 1	2, 32	44, 60	70, 79
Science Inquiry Key Idea 2			
Science Inquiry Key Idea 3	11, 30	54, 55	80
Engineering Design Key Idea 1			
Standard 2			
Key Idea 1			
Key Idea 2			
Key Idea 3			
Standard 6			
Key Idea 1	29, 35	37, 39, 46, 49, 53, 63	65, 78, 82
Key Idea 2	4, 9, 11, 13, 14, 15, 19, 23, 25, 27, 28, 29, 33, 34, 35	36, 38, 41, 42, 43, 44, 45, 47, 49, 50, 51, 52, 53, 55, 56, 57, 58, 60, 61, 62, 63	64, 66, 67, 68, 70, 71, 72, 73, 74, 75
Key Idea 3		43, 45, 47	69
Key Idea 4			
Key Idea 5	16	48, 57, 58, 59	70, 71, 75
Key Idea 6			81
Standard 7			
Key Idea 1			
Key Idea 2			76
Standard 4			
Key Idea 1	1, 2, 3, 4, 5, 6, 7, 11, 12, 13, 15, 16	36, 38, 39, 41, 42, 43, 49, 50, 57, 58, 59, 60, 61, 62, 63	64, 65, 66, 67, 68, 69, 79
Key Idea 2	8, 9, 14, 17, 19, 20, 21, 22, 23, 24, 25, 26, 27, 28, 29, 30, 31, 32, 33, 34, 35	36, 37, 40, 44, 45, 47, 48, 51, 52, 53, 60	70, 71, 72, 73, 74, 75, 76, 77, 78, 80, 81, 82
Key Idea 3	10, 18	46, 54, 55, 56, 61, 62	
Reference Tables			
ESRT 2001 Edition	1, 6, 7, 10, 11, 16, 17, 18, 19, 20, 22, 25, 26, 27, 30, 32	41, 42, 46, 51, 52, 54, 55, 56, 57, 61, 62	69, 72, 73, 74, 80