

FOR TEACHERS ONLY

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

PS-ES PHYSICAL SETTING/EARTH SCIENCE

Wednesday, January 25, 2006 — 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. 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 1	13 4	25 2	36 2	44 2
2 3	14 2	26 1	37 4	45 1
3 2	15 2	27 3	38 2	46 2
4 2	16 2	28 4	39 1	47 1
5 3	17 3	29 2	40 3	48 4
6 1	18 3	30 2	41 1	49 2
7 2	19 3	31 3	42 3	50 1
8 3	20 4	32 1	43 1	
9 3	21 4	33 2		
10 2	22 1	34 2		
11 1	23 4	35 4		
12 3	24 1			

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 25, 2006. 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.

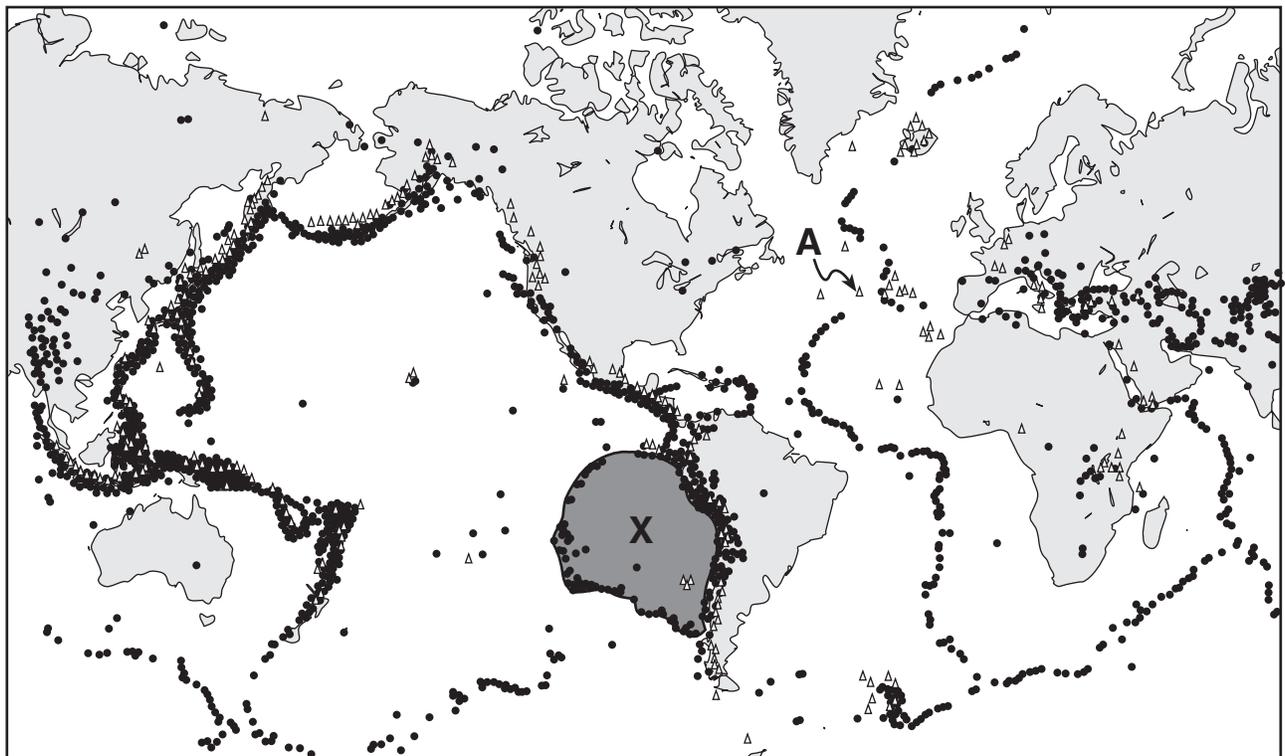
Part B–2

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:
- Cosmic background radiation remains.
 - There is a redshift in the light from stars in distant galaxies.
 - the apparent expansion of the universe
 - More-distant stars are moving away from Earth at a greater rate than nearby stars.

- 52 [1] Allow 1 credit for 1300 (± 200) million years.

- 53 [1] Allow 1 credit if the center of the student-drawn **X** is located somewhere on the Nazca Plate shaded below.



Key	
● Earthquakes	△ Volcanoes

- 54** [1] Allow 1 credit. Acceptable responses include, but are not limited to:
- Most major earthquakes occur at tectonic plate boundaries.
 - Most earthquakes occur at the location of major fault zones.
 - Crustal movement at plate boundaries causes frequent earthquake activity.
- 55** [1] Allow 1 credit. Acceptable responses include, but are not limited to:
- a hot spot
 - a magma plume
 - the mantle
- 56** [1] Allow 1 credit. Acceptable responses include, but are not limited to:
- divergent
 - diverging lithospheric plates
 - seafloor spreading
 - rifting
- 57** [1] Allow 1 credit. Acceptable responses include, but are not limited to:
- revolution
 - The Moon orbits Earth.
 - The Moon travels around Earth.
- 58** [1] Allow 1 credit. Acceptable responses include, but are not limited to:
- The Moon’s shadow misses Earth.
 - The Moon orbits in a different plane than Earth.
 - The Moon’s orbit is tilted.
 - The Moon’s shadow does not reach Earth.
- 59** [1] Allow 1 credit. Acceptable responses include, but are not limited to:
- spring
 - fall
 - autumn

60 [1] Allow 1 credit for Silurian Period.

61 [1] Allow 1 credit. Acceptable responses include, but are not limited to:

- existed for a short geologic time
- widespread geographically

62 [1] Allow 1 credit if *all* three fossil groups are correctly identified as shown below.

Fossil Classification

Index Fossil	<i>Eospirifer</i>	<i>Manticoceras</i>	<i>Phacops</i>
General Fossil Group	Brachiopod	Ammonoid	Trilobite

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

- quartz
- feldspar
- amphibole
- mica

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

- The fragment shows light and dark banding.
- banded foliation
- layering of minerals

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

- Rocks and minerals are nonrenewable resources.
- Mining can result in pollution of the land, water, and air in the region.
- Mining can result in the removal of topsoil.
- danger to miners
- destruction of natural habitats
- landscape destruction

Part C

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

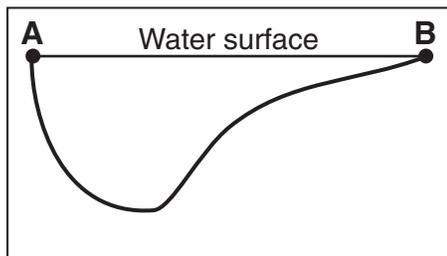
- 66 [1] Allow 1 credit. Acceptable responses include, but are not limited to:
- Cold air holds very little water vapor.
 - Very little evaporation takes place in Antarctica.
 - Antarctica is in a region where air is sinking, therefore, clouds seldom form.
 - Very little precipitation occurs in a high-pressure area.

- 67 [1] Allow 1 credit. Acceptable responses include, but are not limited to:
- fossils
 - volcanic dust
 - pollen
 - trapped gases
 - microbes

- 68 [1] Allow 1 credit. Acceptable responses include, but are not limited to:
- Sea level would most likely rise.
 - The shape of Long Island would change.
 - submergence
 - Long Island would become smaller.
 - Buildings would be flooded.

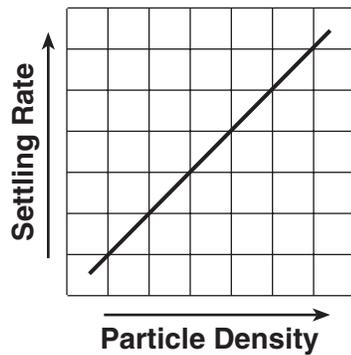
- 69 [1] Allow 1 credit if the student’s cross section shows that the water is deeper near point A.

Example of a 1-credit response:

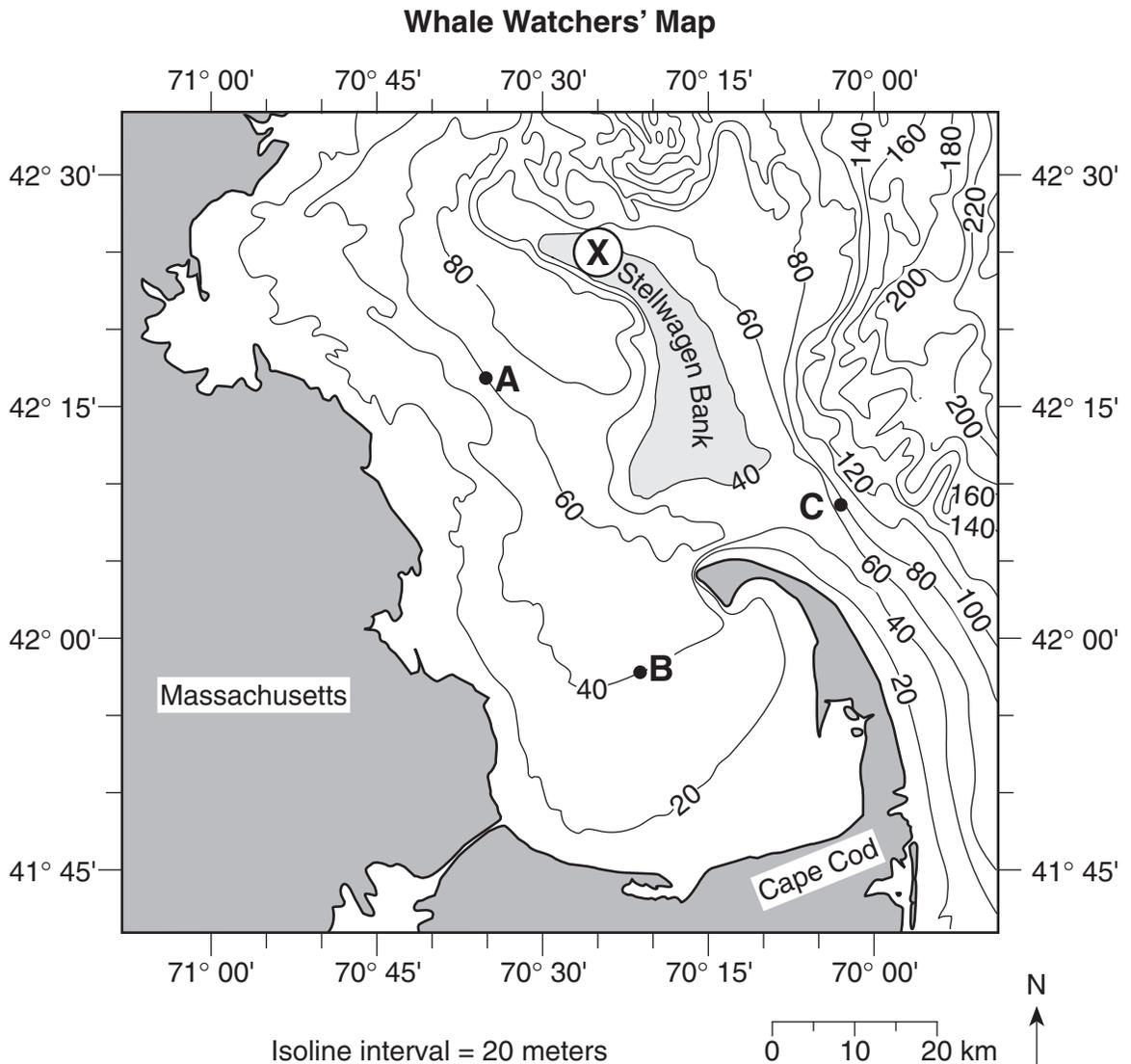


- 70** [1] Allow 1 credit. Acceptable responses include, but are not limited to:
- a direct relationship
 - As the stream velocity increases, the stream can carry bigger sediment.
- 71** [1] Allow 1 credit if *both* the size and shape changes are correctly described. Acceptable responses include, but are not limited to:
- Size: The pebbles become smaller.
The size of the pebbles decreases.
 - Shape: The pebbles become rounder.
The pebbles become more spherical.
- 72** [1] Allow 1 credit for pebbles or sand.
- 73** [1] Allow 1 credit for a straight or curved line that shows a direct relationship.

Example of a 1-credit response:



- 74 [1] Allow 1 credit if the center of the student-drawn **X** is within the circle shown below.



- 75 [1] Allow 1 credit for Labrador Current.
- 76 [1] Allow 1 credit. Acceptable responses include, but are not limited to:
— Isolines are close together.
- 77 [2] Allow 1 credit for the value 0.5 (± 0.02) or .5 (± 0.02).

and

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

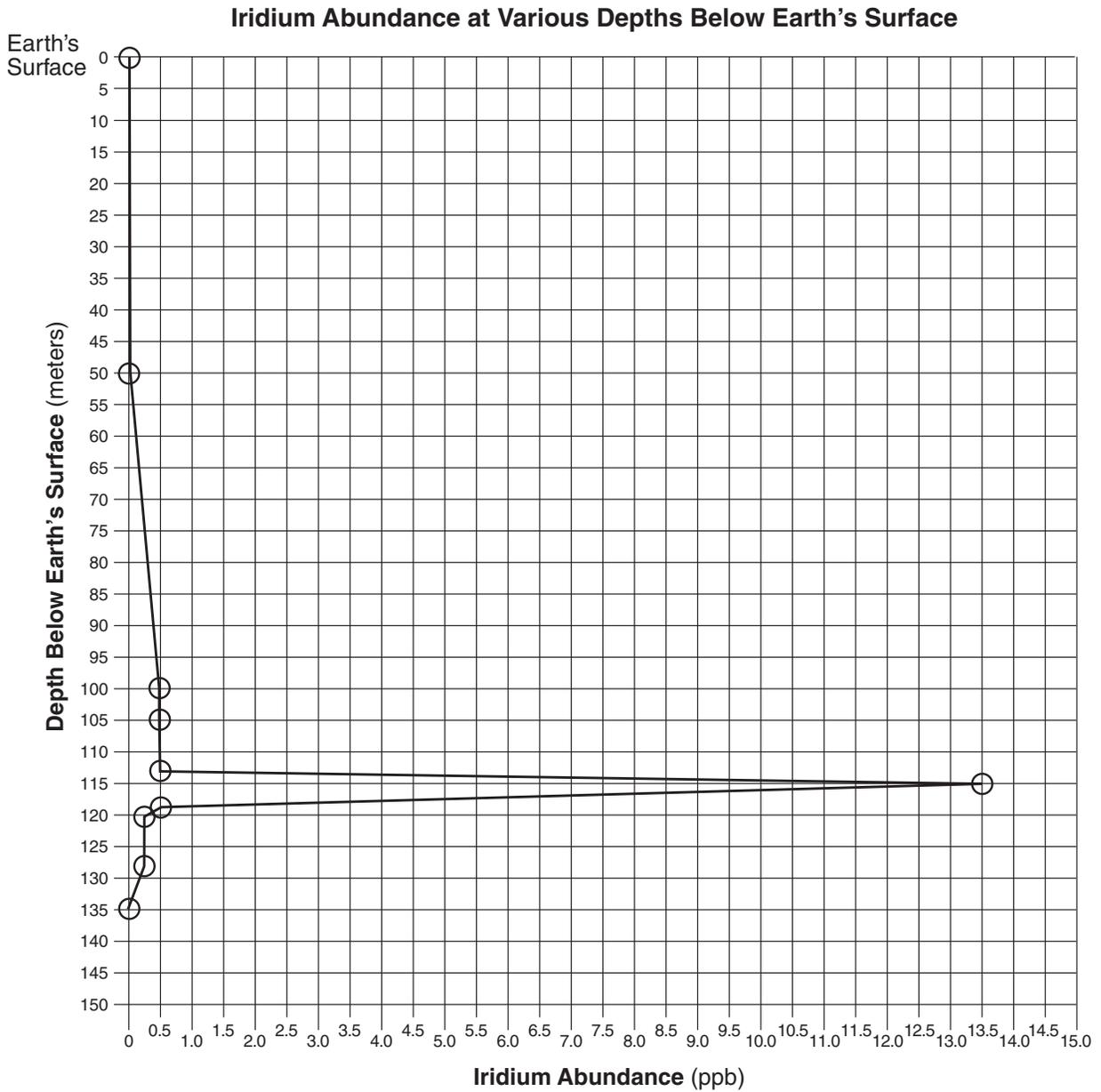
- meters/kilometer
- m/km

78 [2] Allow a maximum of 2 credits, allocated as follows:

- Allow 2 credits if the center of all ten **X**s are within the circles shown on the graph below, and the **X**s are correctly connected with a line.
- Allow 1 credit if only seven to nine centers of the **X**s are within the circles shown on the graph below, and the **X**s are correctly connected with a line.

or

- Allow 1 credit if the center of all ten **X**s are within the circles shown on the graph below, but the **X**s are not correctly connected with a line.



- 79 [1] Allow 1 credit. Acceptable responses include, but are not limited to:
- Cretaceous Period and Tertiary Period
 - Paleogene Period and Cretaceous Period

- 80 [1] Allow 1 credit. Acceptable responses include, but are not limited to:
- crater
 - large ocean waves
 - impact crater
 - large hole

- 81 [1] Allow 1 credit for the correct response shown below.



2



1



4



3

- 82 [1] Allow 1 credit. Acceptable responses include, but are not limited to:
- contact metamorphism
 - Contact metamorphism is shown in both the sandstone and shale layers.
 - An igneous intrusion is younger than the bedrock it intrudes.

- 83 [1] Allow 1 credit for a response that includes any *two* of the processes involved in forming an unconformity. Acceptable responses include, but are not limited to:
- uplift
 - weathering
 - erosion
 - submergence
 - deposition
 - burial

The *Chart for Determining the Final Examination Score for the January 2006 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 25, 2006. 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 2006 Physical Setting/Earth Science			
Question Numbers			
Key Ideas/Performance Indicators	Part A	Part B	Part C
Standard 1			
Math Key Idea 1		44	73,77,78
Math Key Idea 2	5,8,25,33	52	
Math Key Idea 3	14		76
Science Inquiry Key Idea 1		36,40,41,46,61	66,68,71,80,83
Science Inquiry Key Idea 2			
Science Inquiry Key Idea 3	1,6,8,15,21,22	36,49,50,62,64	67,70,72,75,79
Engineering Design Key Idea 1			
Standard 2			
Key Idea 1			
Key Idea 2			
Key Idea 3			
Standard 6			
Key Idea 1			
Key Idea 2	4,17,18,24,26, 30,32	36,37,38,39,40, 41,47,48,50,53, 54,55,56,57,58, 59,60,63	69,74,76,81,82
Key Idea 3		43,51	
Key Idea 4			
Key Idea 5	5	54	81
Key Idea 6			
Standard 7			
Key Idea 1		65	
Key Idea 2			
Standard 4			
Key Idea 1	1,2,3,4,5,6,7,8, 10,11,12,13,14, 15	39,40,41,49,51, 52,57,58,59,60, 61,62	67,74,78,79,80, 81,82,83
Key Idea 2	9,16,17,18,19,20, 21,22,23,24,25, 26,27,28,29,30, 31,32,33	36,37,38,47,48, 50,53,54,55,56	66,68,69,70,71, 72,73,75,76,77
Key Idea 3	34,35	42,43,44,45,46, 63,64,65	
Reference Tables			
ESRT 2001 Edition	1,6,8,12,14,15, 18,21,22,23,25, 26,27,32,33,34, 35	44,47,49,50,52, 53,54,55,56,60, 62,63,64	70,72,75,77,79

