

FOR TEACHERS ONLY

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

PHYSICAL SETTING/EARTH SCIENCE

Friday, January 24, 2020 — 9:15 a.m. to 12:15 p.m., only

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/assessment/> 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.

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*.

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. Teachers may not score their own students’ answer papers.

Students’ responses must be scored strictly according to the 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. Do not attempt to correct the student’s work by making insertions or changes of any kind. 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. If the student gives more than one answer to a question, only the first answer should be rated. Units need not be given when the wording of the questions allows such omissions.

For hand scoring, 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/assessment/> on Friday, January 24, 2020. 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.

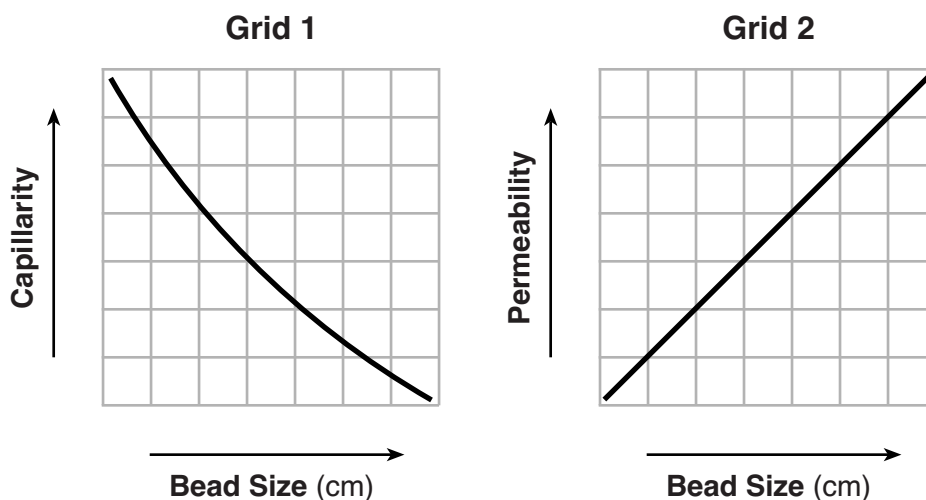
Part B–2

Allow a maximum of 15 credits for this part.

To ensure the accuracy of overlays, select a printer setting such as *full*, *actual size*, or *100%* when printing this document. Do **not** select the *fit to page* setting.

51 [1] Allow 1 credit for grid 1 showing an inverse relationship, and grid 2 showing a direct relationship.

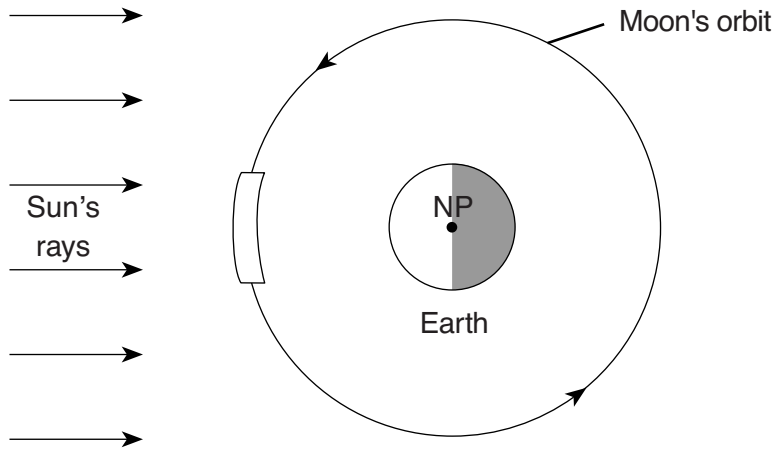
Example of a 1-credit response:



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

- Mix beads of two or more sizes.
- Use beads of varying shapes.
- Use an unsorted mixture of beads.
- Pack the beads more tightly together.

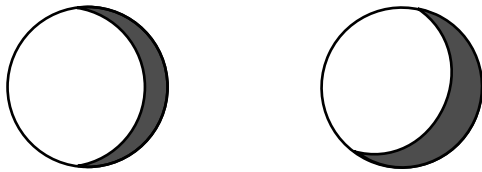
53 [1] Allow 1 credit if the center of the **X** is within or touches the clear region on the Moon's orbit shown below.



(Not drawn to scale)

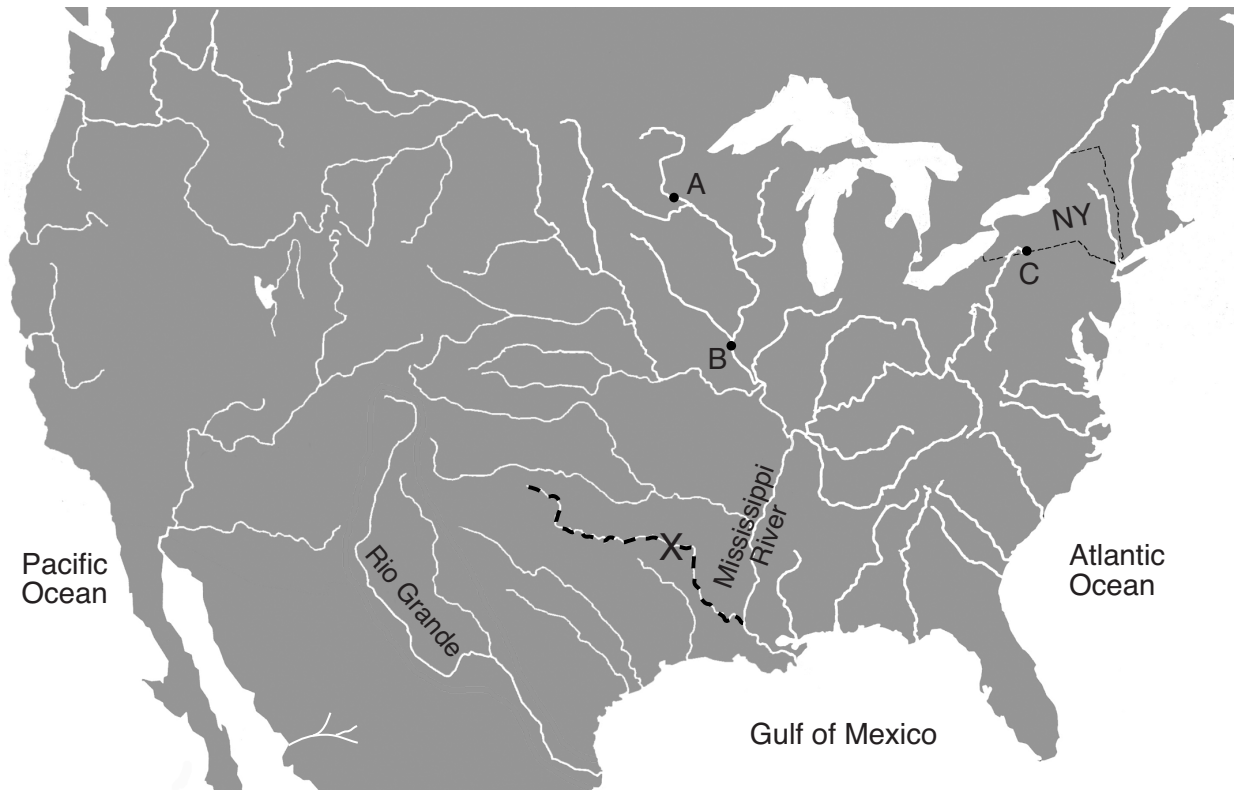
54 [1] Allow 1 credit for shading in less than half of the right side of the Moon.

Examples of a 1-credit response:



55 [1] Allow 1 credit if the center of the **X** is on or touches the dashed line as shown below.

Example of a 1-credit response.



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

Change in shape:

- The sediments become more rounded.
- less angular

Change in size:

- The sediments become smaller.
- Bigger sediments are broken into smaller pieces.

Note: Do *not* allow credit for “smooth” alone for change in shape because smooth is not a shape.

57 [1] Allow 1 credit for Allegheny Plateau *or* Appalachian Plateau (Uplands).

58 [1] Allow 1 credit for the symbol Cl and a correct environmental impact. Acceptable responses include, but are not limited to:

- reacts with and destroys ozone
- Chlorine breaks down ozone molecules.
- increases the amount of UV rays reaching Earth's surface

Note: Do *not* allow credit for “chlorine” for the chemical symbol because this is the name of the element not the chemical symbol.

Do *not* allow credit for “CL” for the chemical symbol because this is not the correct format for writing chemical symbols.

59 [1] Allow 1 credit for troposphere and mesosphere.

60 [1] Allow 1 credit for any value from 38,750 T/y to 41,250 T/y.

Note: Allow credit if the answer is expressed as a negative value.

61 [1] Allow 1 credit for Germany and China.

62 [1] Allow 1 credit for Carboniferous *or* Pennsylvanian Period.

Note: Do *not* allow credit for “Early Pennsylvanian” or “Late Pennsylvanian” because these terms denote epochs not periods.

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

- compaction
- compression
- metamorphism/heat and/or pressure

Note: Do *not* allow credit for “cementation” because coal is formed from compacted plant remains.

64 [1] Allow 1 credit for carbon *or* C.

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

- CH₄/methane
- H₂O gas/water vapor
- N₂O/nitrous oxide
- O₃/ozone
- CFCs/chlorofluorocarbons

Part C

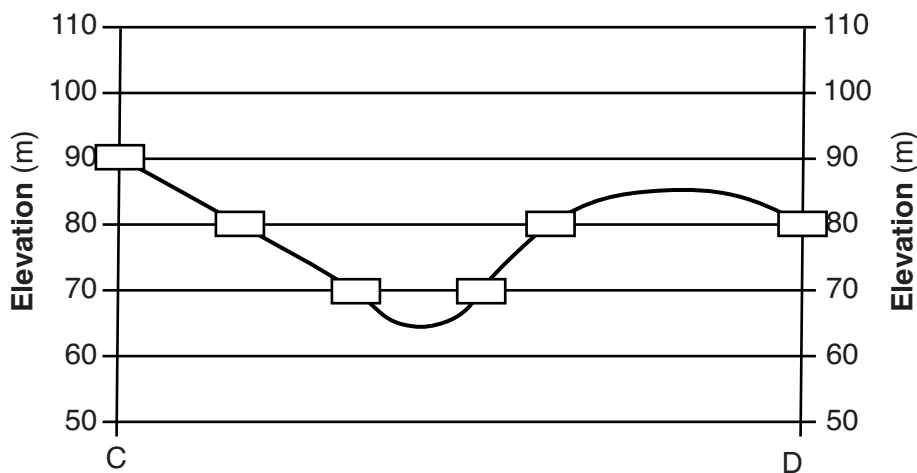
Allow a maximum of 20 credits for this part.

- 66 [1] Allow 1 credit for any value from 12.1 to 12.9 and the correct units. Units include, but are not limited to:
- m/km
 - meters per kilometer

- 67 [1] Allow 1 credit if the centers of *all six* plots are within or touch the rectangles shown below and are correctly connected with a line from *C* to *D* that passes within or touches each rectangle. The line should extend below 70 m but not touch 60 m in the valley. The line should extend above 80 m, but not touch 90 m on the hill.

Note: Allow credit if the line does not pass through the student plots, but is still within or touches the rectangles.

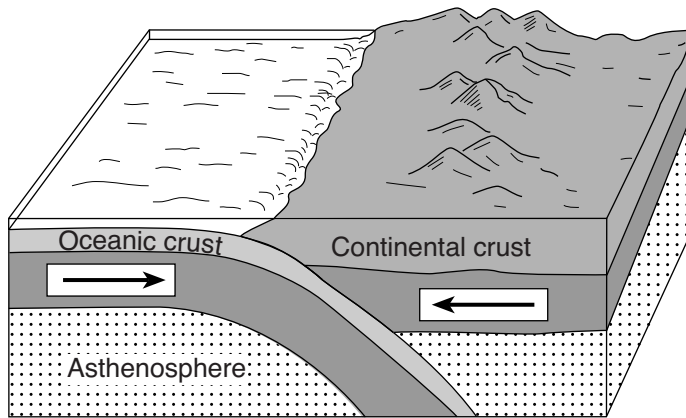
It is recommended that an overlay of the same scale as the student answer booklet be used to ensure reliability in rating.



- 68 [1] Allow 1 credit for any value greater than 100 meters, but less than 110 meters.
- 69 [1] Allow 1 credit for summer.
- 70 [1] Allow 1 credit for 12 h.
- 71 [1] Allow 1 credit. Acceptable responses include, but are not limited to:
- the greater the latitude, the greater the duration of insolation
 - direct relationship

72 [1] Allow 1 credit if *both* arrows are correctly drawn and indicate convergence.

Example of a 1-credit response:



(Not drawn to scale)

73 [1] Allow 1 credit for Nazca Plate.

74 [1] Allow 1 credit for any value from 4 min 40 s to 4 min 50 s.

75 [1] Allow 1 credit. Acceptable responses include, but are not limited to:

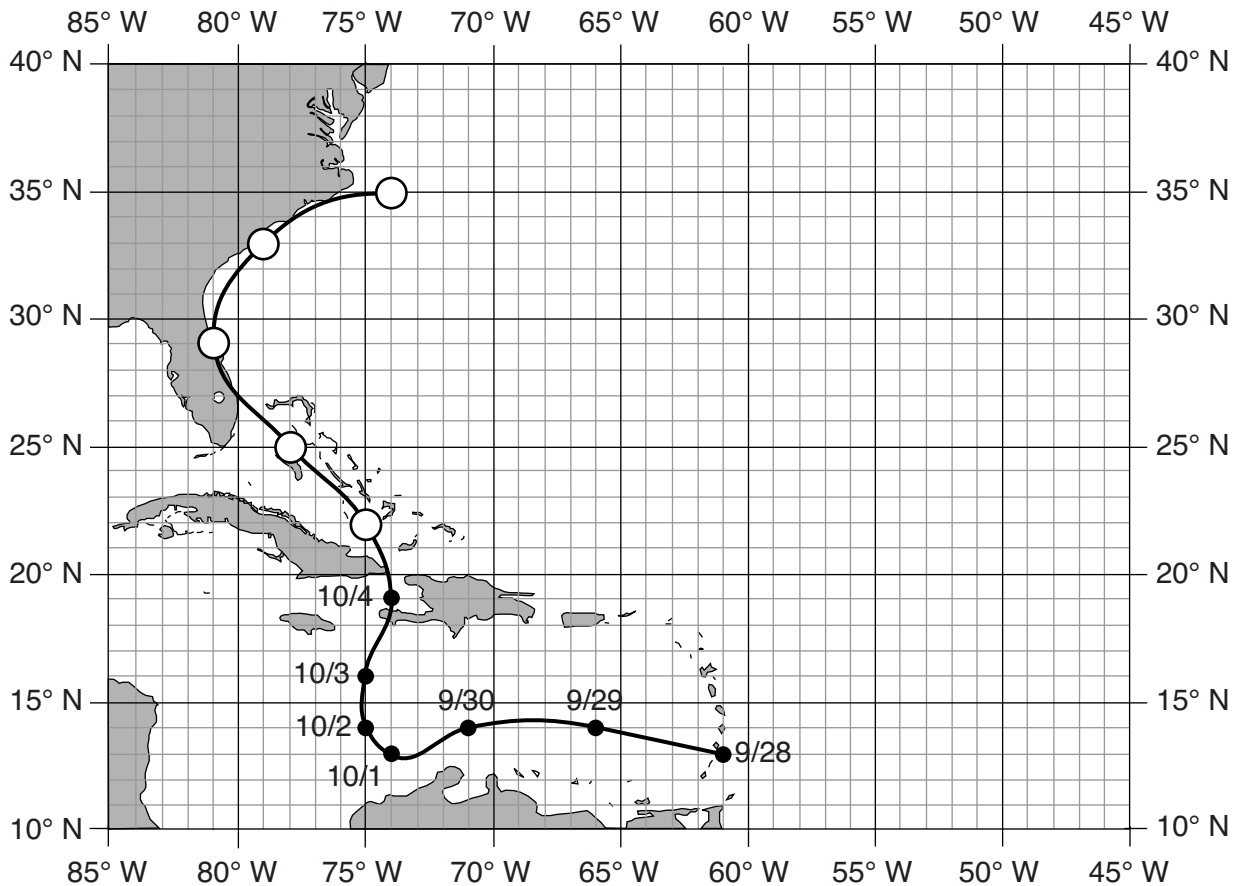
- Evacuate coastal areas.
- Move inland.
- Get to higher ground.
- Move to higher floors in buildings.

76 [1] Allow 1 credit if *all five* plots are within or touch the circles shown below and are correctly connected with a line (beginning at the 10/4 plot) that passes within or touches each circle.

Note: Allow credit if the line does *not* pass through the student plots, but is still within or touching the circles.

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

Hurricane Tracking Map Hurricane Matthew, Fall 2016



77 [1] Allow 1 credit for from Sept. 29 to Sept. 30 *or* from 9/29 to 9/30.

78 [1] Allow 1 credit for a wind speed of 145 mph and a Category 4/Cat 4 classification of hurricane.

79 [1] Allow 1 credit for *Cryptolithus* and *Valcouroceras*.

Note: Do *not* allow credit for *B* and *D* because these are not the names of the fossils.

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

- These organisms only existed for a short time.
- These fossils have widespread distribution.

81 [1] Allow 1 credit for limestone.

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

- As the distance from *Kepler-11* increases, the period of revolution increases.
- As one increases, the other increases.
- the closer the planet, the smaller the period of revolution
- direct relationship

83 [1] Allow 1 credit if the center of the **X** is within or touches the edge of the box below.

Note: Allow credit if a symbol other than an **X** is used.

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



(Distances drawn to scale in million kilometers)

84 [1] Allow 1 credit for Uranus and Jupiter.

85 [1] Allow 1 credit for the Sun.

Regents Examination in Physical Setting/Earth Science

January 2020

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

The *Chart for Determining the Final Examination Score for the January 2020 Regents Examination in Physical Setting/Earth Science* will be posted on the Department's web site at: <http://www.p12.nysed.gov/assessment/> on Friday, January 24, 2020. 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 2020 Physical Setting/Earth Science			
Question Numbers			
Key Ideas/Performance Indicators	Part A	Part B	Part C
Standard 1			
Math Key Idea 1		51, 60	66, 67, 76
Math Key Idea 2	10, 18, 27	51, 60, 61	68, 71, 74, 77, 78, 82, 85
Math Key Idea 3			83
Science Inquiry Key Idea 1	1, 3, 4, 13, 23, 28, 31, 34	39, 40, 41, 43, 50, 54, 65	70, 80
Science Inquiry Key Idea 2		51	
Science Inquiry Key Idea 3	2, 7, 10, 11, 12, 14, 15, 16, 18, 19, 21, 23, 24, 25, 26, 27, 28, 30, 33, 35	36, 42, 44, 45, 48, 57, 58, 59, 60, 62, 63, 64	66, 71, 72, 73, 74, 79, 81, 84, 85
Engineering Design Key Idea 1			
Standard 2			
Key Idea 1			
Key Idea 2			
Key Idea 3			
Standard 6			
Key Idea 1	6, 8, 9, 25, 29, 32	47, 53, 56	81
Key Idea 2	2, 5, 8, 9, 10, 11, 13, 17, 18, 19, 20, 22, 25, 31, 32, 34	37, 38, 39, 40, 46, 47, 48, 49, 50, 54, 55, 57, 59, 62, 63, 64	66, 67, 68, 69, 70, 71, 72, 73, 77, 78, 79, 80, 81
Key Idea 3	12, 22		68, 83
Key Idea 4			
Key Idea 5	9, 17, 20	45, 49, 50, 53, 54, 56	69, 84
Key Idea 6			
Standard 7			
Key Idea 1		58, 65	
Key Idea 2			75
Standard 4			
Key Idea 1	1, 2, 3, 4, 5, 6, 7, 8, 9, 12, 14, 15, 21, 23	39, 40, 41, 42, 43, 44, 45, 49, 50, 51, 52, 53, 54, 62	69, 76, 79, 80, 81, 82, 83, 84, 85
Key Idea 2	10, 11, 13, 16, 17, 18, 19, 20, 22, 24, 25, 26, 27, 28, 29, 31, 32, 34	36, 46, 47, 48, 55, 56, 57, 58, 59, 60, 61, 65	66, 67, 68, 70, 71, 72, 73, 74, 75, 77, 78
Key Idea 3	30, 33, 35	37, 38, 63, 64	
Reference Tables			
ESRT 2011 Edition (Revised)	2, 7, 10, 11, 12, 14, 15, 16, 18, 19, 21, 24, 25, 26, 27, 28, 30, 33, 35	36, 42, 44, 45, 48, 57, 58, 59, 60, 62, 63, 64	66, 72, 73, 74, 79, 81, 84, 85