

FOR TEACHERS ONLY

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

PHYSICAL SETTING/EARTH SCIENCE

Tuesday, August 20, 2024 — 8:30 to 11:30 a.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: <https://www.nysed.gov/state-assessment/high-school-regents-examinations> 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: <https://www.nysed.gov/state-assessment/high-school-regents-examinations> on Tuesday, August 20, 2024. 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 cold front.

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

- northeast/NE
- SW to NE
- east

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

- Ice covering the lake would prevent evaporation of lake water.
- The ice on the lake limits the addition of moisture to the air.
- The ice prevents moisture from entering the atmosphere.
- More moist air will rise off an unfrozen lake.

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

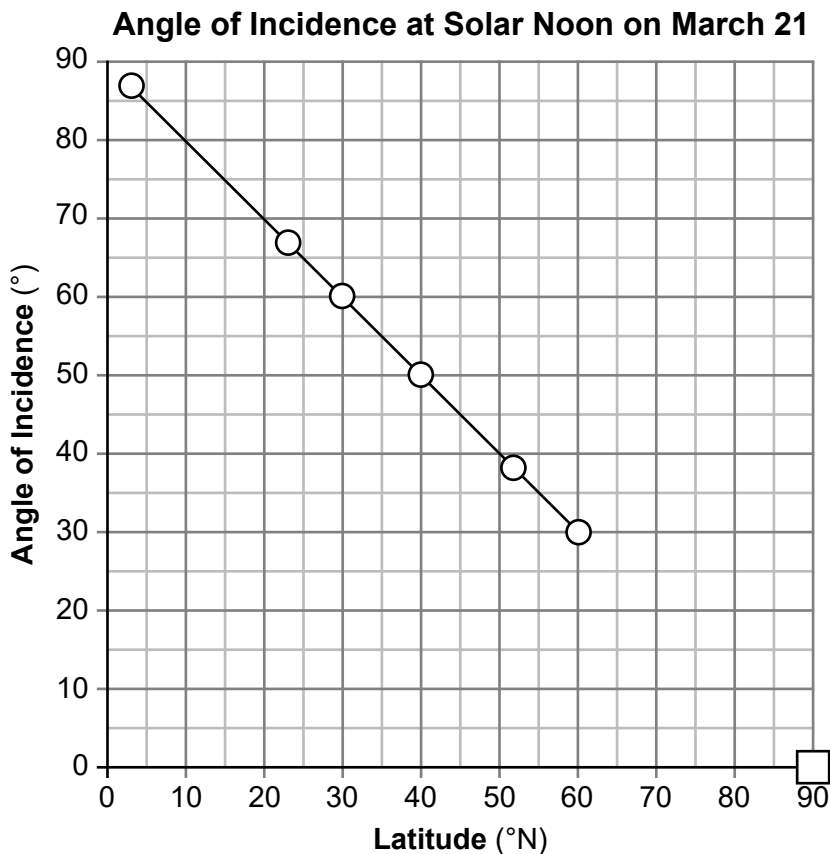
- Avoid unnecessary travel and stay indoors.
- Make sure generators are working./Buy a generator.
- Have emergency supplies/medicines available.
- Have snow-removal equipment, shovels, and snowblowers handy.
- Charge cell phones and batteries.

- 55** [1] Allow 1 credit for gravity *or* gravitation.
- 56** [1] Allow 1 credit for Quaternary Period *and* Pleistocene Epoch.
- 57** [1] Allow 1 credit. Acceptable responses include, but are not limited to:
- Chicago sinks as the plastic mantle under the city flows back toward Canada.
 - The mantle under Chicago is flowing northward.
- 58** [1] Allow 1 credit for crust *and* rigid mantle.
- 59** [1] Allow 1 credit for 3 *or* 3.0 cm.
- 60** [1] Allow 1 credit. Acceptable responses include, but are not limited to:
- The moraines are composed of mixed sized sediments that are not in layers.
 - unsorted sediments
 - unlayered sediments

- 61 [1] Allow 1 credit if the centers of *all six* student plots are within or touch the circles shown and are correctly connected with a line that passes within or touches each circle.

Note: Allow credit if the student-drawn 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 sheet be used to ensure reliability in rating. This overlay can be used for question 87 also.



- 62 [1] Allow 1 credit if the center of the **X** is within or touches the sides of the clear box shown on the graph above.

63 [1] Allow 1 credit for 12 h.

64 [1] Allow 1 credit for any value from 255 to 285 y.

65 [1] Allow 1 credit for 12.5%.

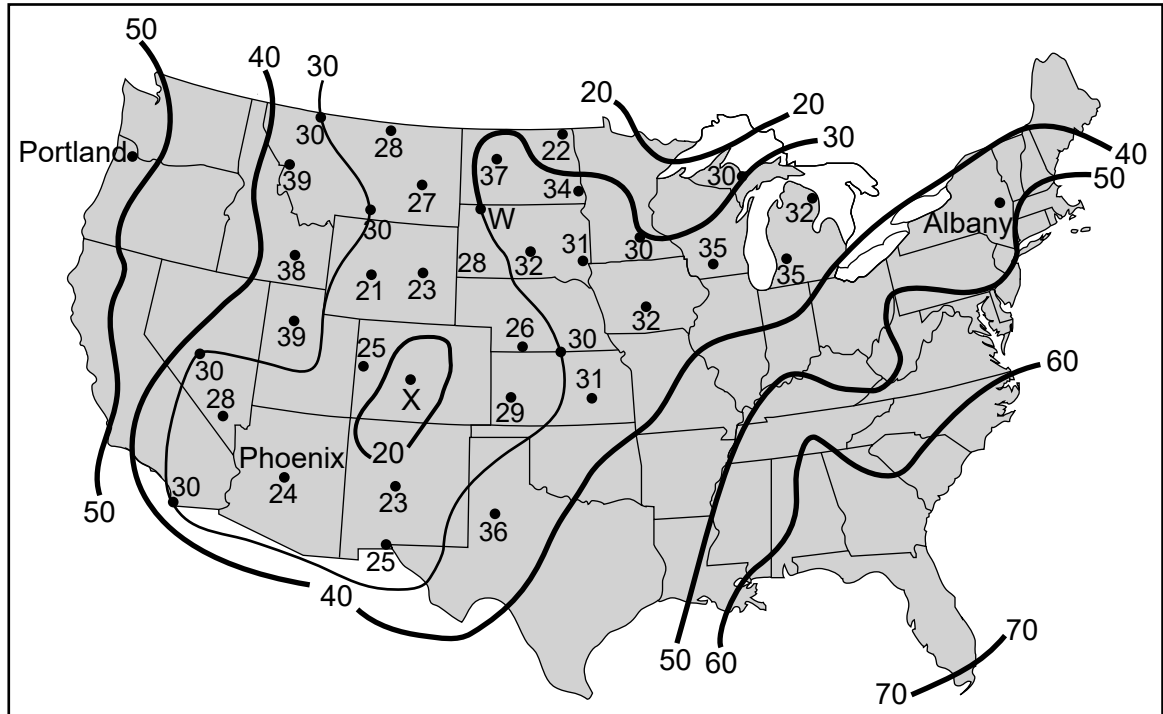
Part C

Allow a maximum of 20 credits for this part.

- 66 [1] Allow 1 credit if 30°F dewpoint isotherm is correctly drawn. The isotherm must pass through or touch *all five* 30°F dots. If additional lines are drawn, all isotherms must be correct to receive credit.

Example of a 1-credit response:

Dewpoint Isotherm Map - 3:00 p.m. November 1, 2018



- 67 [1] Allow 1 credit for any value greater than 50°F, but less than 60°F.
- 68 [1] Allow 1 credit for a correct air temperature *and* moisture condition. Acceptable responses include, but are not limited to:

Relative air temperature:

- warm
- hot
- high

Relative moisture:

- arid/dry
- low
- not humid
- low dewpoint

69 [1] Allow 1 credit. Acceptable responses include, but are not limited to:

- psychrometer/sling psychrometer
- hygrometer/dewpoint hygrometer
- wet-bulb and dry-bulb thermometers

Note: Do *not* allow credit for “thermometer” alone because this is too general, and two specific thermometers (dry-bulb and wet-bulb) are used to find dewpoint.

70 [1] Allow 1 credit. Acceptable responses include, but are not limited to:

- The thin section shows foliation.
- The minerals in A are aligned.
- The minerals are long and stretched/distorted.
- Banding is present.

71 [1] Allow 1 credit for garnet.

72 [1] Allow 1 credit for sandstone.

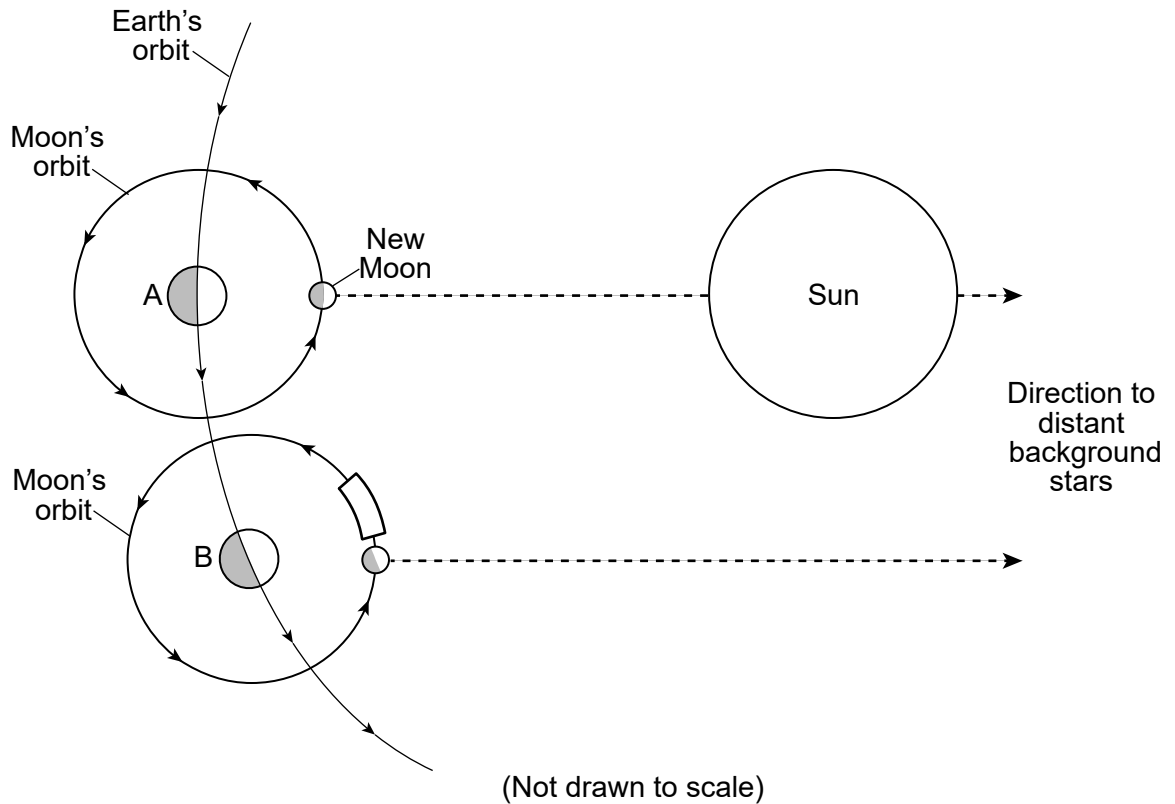
73 [1] Allow 1 credit for granite *or* pegmatite.

74 [1] Allow 1 credit. Acceptable responses include, but are not limited to:

- Magma first cooled slowly, producing large crystals and then cooled rapidly, producing small crystals.
- Slow cooling produces large crystal size and fast cooling produces small crystal size.
- cooled slower for coarse-grained crystals
- cooled faster for small crystals

75 [1] Allow 1 credit if the center of the **X** is within or touches the band indicated on the diagram shown below.

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



76 [1] Allow 1 credit for solar eclipse *and* a correct explanation. Acceptable responses include, but are not limited to:

- The Moon's shadow reaches Earth.
- Earth, the Moon, and the Sun are aligned in that order.
- The Moon is between Earth and the Sun.
- The Moon will block the Sun's rays from reaching Earth.

77 [1] Allow 1 credit for the Sun *or* the Moon.

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

Surface temperature:

- Temperatures become cooler.
- lower
- decreases
- goes from hotter to cooler
- goes from between 20,000 and 30,000 k down to between 3000 and 4000 k.

Luminosity:

- increases
- gets higher
- brighter
- goes from 1000 to between 10,000 and 100,000.
- emits a greater amount of energy

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

- Both cores contain iron.
- Heavier elements are found in each core.

80 [1] Allow 1 credit for nuclear fusion *or* fusion.

81 [1] Allow 1 credit for any value from 1968.0 to 1969.0 square miles.

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

- Fossil fuels were continually burned during this time.
- more industrialization
- an increase in human population
- pollution from automobile or factory exhaust

Note: Do *not* allow credit for “pollution” or “air pollution” alone because this is too general. Many types of pollution do not increase CO₂ levels.

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

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

84 [1] Allow 1 credit for Atlantic Coastal Plain.

85 [1] Allow 1 credit. Acceptable responses include, but are not limited to:

- north
- NW

Regents Examination in Physical Setting/Earth Science

August 2024

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

The *Chart for Determining the Final Examination Score for the August 2024 Regents Examination in Physical Setting/Earth Science* will be posted on the Department's web site at: <https://www.nysed.gov/state-assessment/high-school-regents-examinations> on Tuesday, August 20, 2024. 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 <https://www.nysed.gov/state-assessment/teacher-feedback-state-assessments>.
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

August 2024 Physical Setting/Earth Science			
Question Numbers			
Key Ideas/Performance Indicators	Part A	Part B	Part C
Standard 1			
Math Key Idea 1	27	48, 59, 61, 65	76, 81
Math Key Idea 2	1	62, 64	78
Math Key Idea 3			66
Science Inquiry Key Idea 1		44, 50, 53	82
Science Inquiry Key Idea 2			
Science Inquiry Key Idea 3	2, 5, 14, 16, 18, 20, 25, 27, 28, 34, 35	36, 38, 45, 46, 47, 48, 49, 52, 56, 58, 59	68, 70, 71, 72, 73, 74, 77, 78, 79, 81, 84
Engineering Design Key Idea 1			
Standard 2			
Key Idea 1			69
Key Idea 2			
Key Idea 3			
Standard 6			
Key Idea 1	7, 15, 17, 22, 29, 32	52, 55, 57	80, 83
Key Idea 2	6, 8, 12, 13, 14, 15, 17, 19, 23, 26, 29, 30, 31, 32, 33	36, 37, 39, 40, 41, 42, 43, 47, 49, 51, 52, 60, 61, 62	66, 67, 70, 71, 72, 75, 76, 79, 81, 84, 85
Key Idea 3	21		67
Key Idea 4		55, 57	
Key Idea 5	1, 11, 12, 31	42, 43, 62, 64, 65	74, 75
Key Idea 6			
Standard 7			
Key Idea 1			
Key Idea 2		54	
Standard 4			
Key Idea 1	1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 19, 20, 21, 22, 23	36, 37, 38, 41, 42, 43, 44, 48, 49, 50, 56, 61, 62, 64, 65	75, 76, 77, 78, 79, 80
Key Idea 2	12, 13, 14, 15, 16, 17, 18, 24, 25, 26, 27, 28, 29, 30, 31, 32, 33	39, 40, 45, 46, 47, 51, 52, 53, 54, 55, 57, 58, 59, 60, 63	66, 67, 68, 69, 79, 81, 82, 83, 84, 85
Key Idea 3	34, 35		70, 71, 72, 73, 74
Reference Tables			
ESRT 2011 Edition (Revised)	2, 5, 14, 16, 18, 20, 25, 27, 28, 34, 35	36, 38, 46, 47, 48, 49, 52, 56, 58	68, 70, 71, 72, 73, 74, 77, 78, 79, 84