FOR TEACHERS ONLY

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

PHYSICAL SETTING/EARTH SCIENCE

Friday, January 26, 2024 — 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: 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 Friday, January 26, 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 Mercury.

52 [1] Allow 1 credit for any value greater than 227.9, but less than 778.4 million km.

53 [1] Allow 1 credit for Mars.

54 [1] Allow 1 credit for craters or impact craters for the surface feature and a correct description of formation. Acceptable responses include, but are not limited to:

— The craters were formed by asteroid impacts.

— Meteors smashed into the surface.

— comet impacts

— They were formed by celestial objects impacting on the surface of Ceres.

55 [1] Allow 1 credit if *both* times are correct. Acceptable responses include, but are not limited to:

Atlanta:

— 1:00 p.m.

— 1 pm

— one in the afternoon

— 1300 (military time)

Los Angeles:

— 10:00 a.m.

— 10 am

— ten in the morning

— 1000 (military time)

56 [1] Allow 1 credit for Austin *or* Austin, TX.

57 [1] Allow 1 credit for Miocene Epoch.

58 [1] Allow 1 credit for 16.6 km^3/y.

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

Human activity:

— The rivers were diverted.

— Water was used for irrigation.

— farming

Effect:

— The lake dried up.

— Airborne pollution/dust is a health hazard.

— Water became too salty for certain life.

— Fishing and communities collapsed.

— Salty ground remaining is unsustainable for farming.

— Pollution from fertilizers and pesticides

60 [1] Allow 1 credit if *both* air temperature and precipitation are correct. Acceptable responses include, but are not limited to:

Air temperature:

— warmer

— hot

— higher

Precipitation:

— less

— drier

61 [1] Allow 1 credit for Lake Erie.

62 [1] Allow 1 credit. Acceptable responses include, but are not limited to:

— The pond water would evaporate, lowering the surface level of the water.

— Warm temperatures in the summer cause more evaporation to occur.

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

— The pond water would infiltrate into the soil.

— The water would move down to the water table.

64 [1] Allow 1 credit for circling hotter and greater, only.

65 Allow 1 credit if *all three* objects are listed in the correct order as shown below.

universe → Kochab → Polaris

Oldest ⟶ Youngest

Part C

Allow a maximum of 20 credits for this part.

66 [1] Allow 1 credit for breccia.

67 [1] Allow 1 credit. Acceptable responses include, but are not limited to:

— slow cooling rate

— The magma cooled very slowly, forming coarse crystals.

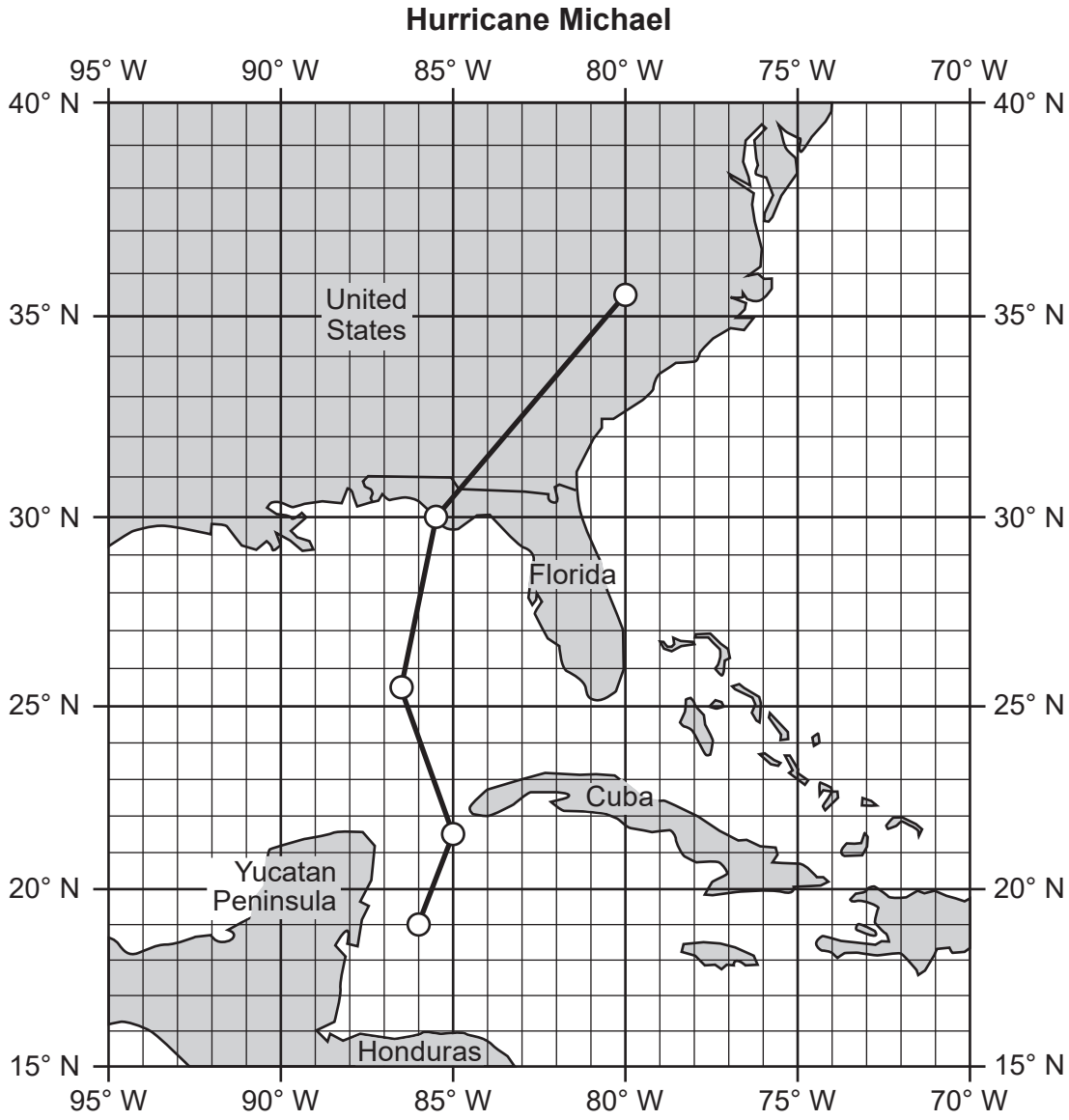
— It took a long time for the magma to cool.

68 [1] Allow 1 credit for 0.2 cm.

69 [1] Allow 1 credit if the centers of *all five* plots are within or touch the circles shown on the map on page 7 and are correctly connected with a line that passes within or touches each circle.

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

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



70 [1] Allow 1 credit for category 5.

71 [1] Allow 1 credit. Acceptable responses include, but are not limited to:

— As the air pressure decreases, the wind speed increases.

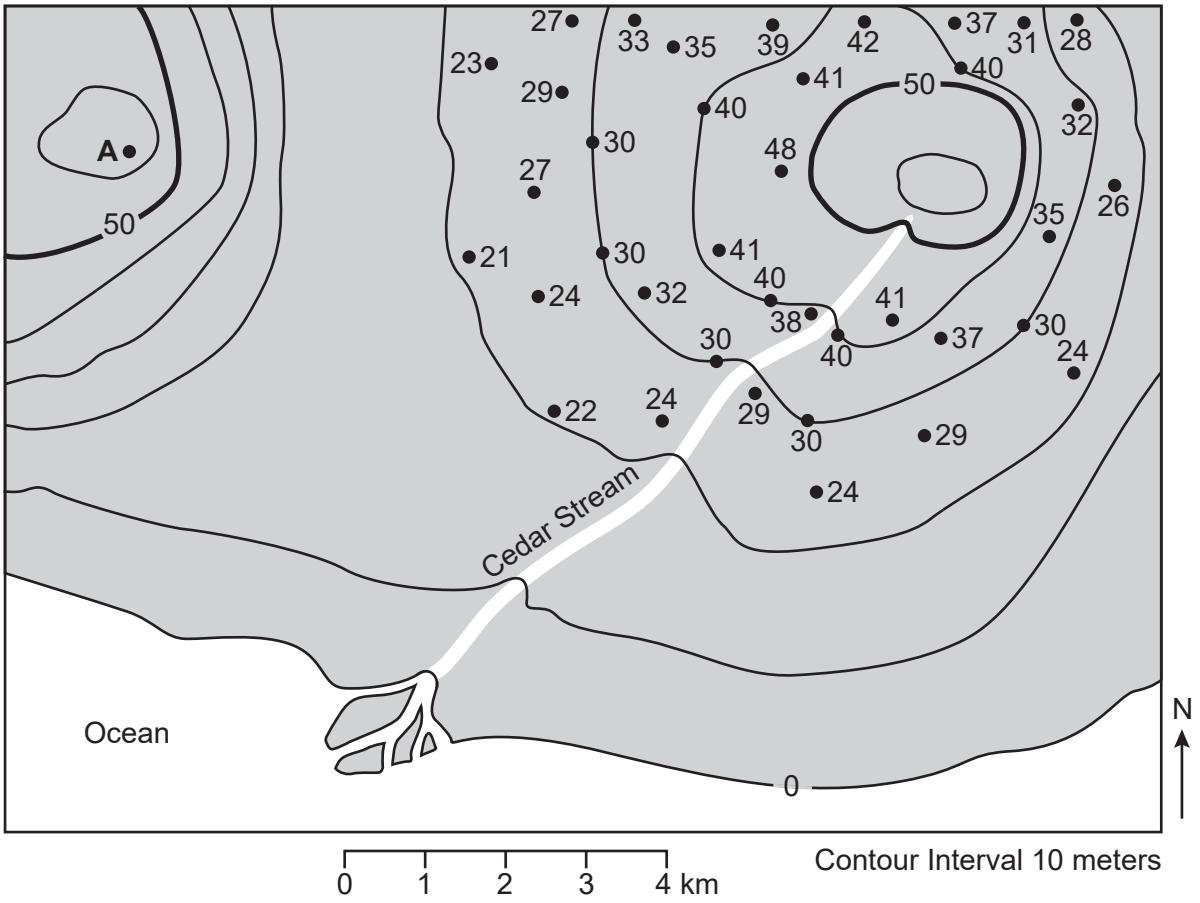
— Higher winds occur with lower air pressure.

— inverse relationship/negative correlation

72 [1] Allow 1 credit if *both* the 30 m and the 40 m contour lines are correctly drawn to the edge of the map. The contour lines must pass through or touch the five 30 m dots and the four 40 m dots.

Note: If additional isolines are drawn, all must be correct to receive credit.
Allow credit if the 40 m contour line forms a closed loop.

Example of a 1-credit response:



73 [1] Allow 1 credit for any value greater than 60 m, but less than 70 m.

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

— There is less precipitation at location *X* in July than in January.

— There is 40 to 60 cm of rain at location *X* in January, but less rain in July.

— Compared to July, in January *X* receives about five times more rainfall.

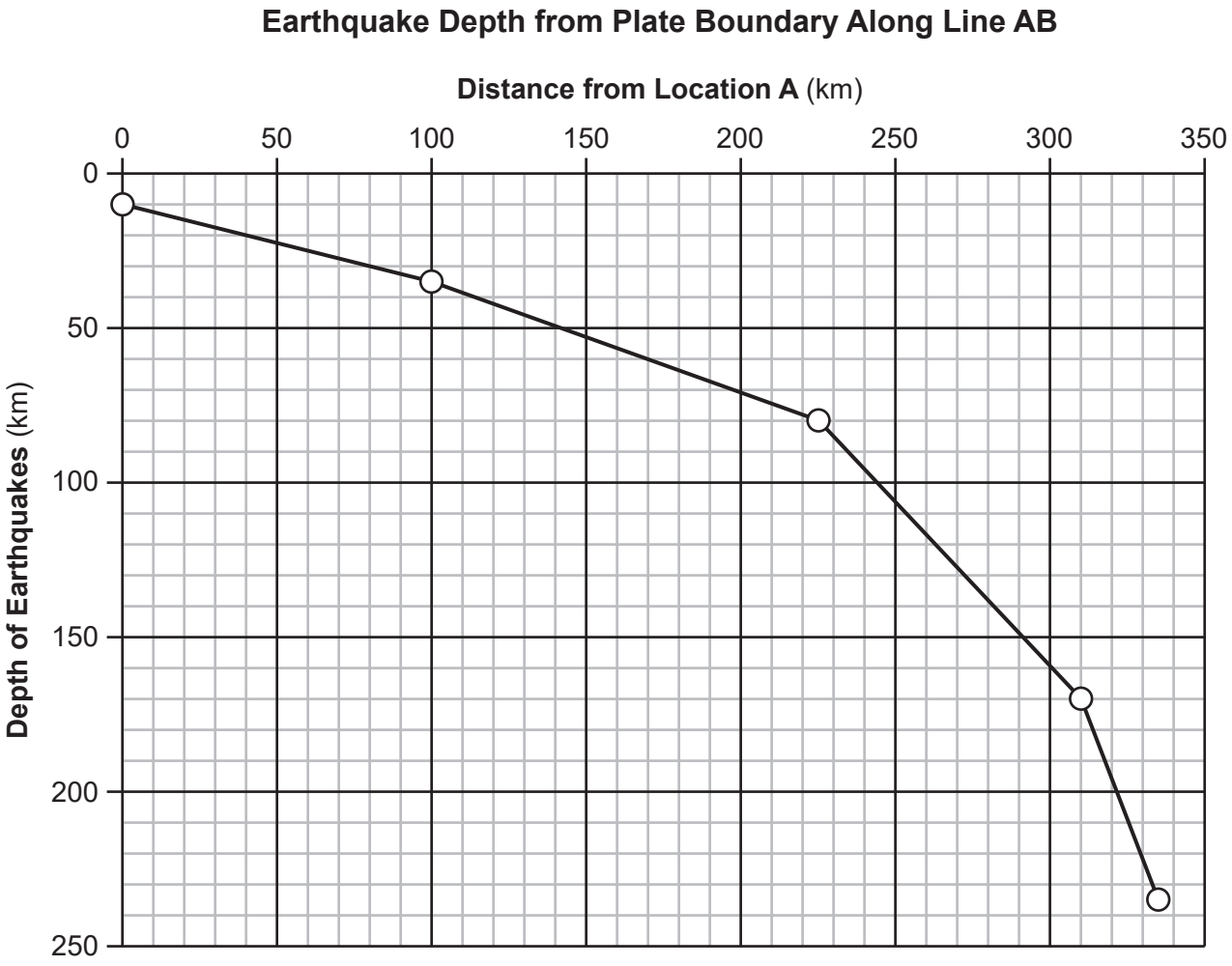
75 [1] Allow 1 credit for any value from 400 km to 900 km.

76 [1] Allow 1 credit if the centers of *all five* 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.

Do *not* allow credit if student extends line beyond given data.



77 [1] Allow 1 credit for Indian-Australian Plate (Indo-Australian Plate) and Eurasian Plate.

78 [1] Allow 1 credit for asthenosphere *or* plastic mantle.

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

— evacuated to higher elevation

— Get to a higher floor in buildings.

— Go to higher ground.

— Leave the beach and get inland.

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

— Rock particles are unsorted.

— Moraines contain random, mixed-size particles.

— not in layers/unlayered

81 [1] Allow 1 credit if *both* valley shapes are correct. Acceptable responses include, but are not limited to:

Original valley shape:

— V-shaped

Glaciated valley shape:

— U-shaped

— rounded bottoms with steep sides

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

— Rock fragments gouged out grooves as they were dragged southward by moving ice.

— Rocks and boulders between the glacier and bedrock were pushed along, scratching the surface.

— Pieces of rock in the glacier abraded the bedrock.

Note: Do *not* allow credit for "the glacier moved over the bedrock" or "the glacier scratched the bedrock" because ice alone does *not* cause the grooves and scratches. It is the sediments trapped in the ice that make the marks.

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

— Granite has a coarse texture, while basalt has a fine texture.

— Granite has larger crystals than basalt.

— Granite crystals' size is from 1 to 10 mm, and basalt crystals are less than 1 mm.

— The texture is coarse.

— Granite cannot be vesicular.

84 [1] Allow 1 credit. Acceptable responses include, but are not limited to:

— plants/plant remains

— carbon/organic carbon

— peat or lignite

85 [1] Allow 1 credit for *one* correct response. Acceptable responses include, but are not limited to:

— rock salt

— rock gypsum

— dolostone

— limestone

Regents Examination in Physical Setting/Earth Science

January 2024

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

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

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