FOR TEACHERS ONLY

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

PHYSICAL SETTING/CHEMISTRY

Tuesday, January 20, 2026 — 1:15 to 4:15 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/Chemistry. Additional information about scoring is provided in the publication *Directions for Scoring Regents Examinations*.

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 box labeled "Total Raw Score." Then the student's raw score 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, January 20, 2026. 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 total of 15 credits for this part. The student must answer all questions in this part.

51 [1] Allow 1 credit for 39.7% *or* any value from 39.67% to 40.3%, inclusive.

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

The K-39 atoms and K-40 atoms have the same number of protons, but a different number of neutrons.

Both atoms have 19 protons, but K-39 atoms each have 20 neutrons and K-40 atoms each have 21 neutrons.

same number of protons, a different number of neutrons

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

The energy of an electron in the first shell is less than the energy of an electron in the fourth shell.

The fourth shell electron has greater energy.

less in first shell

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

$(38.964\text{ u})(0.9326) + (39.964\text{ u})(0.0001) + (40.962\text{ u})(0.0673)$

$$\frac{(38.964)(93.26) + (39.964)(0.01) + (40.962)(6.73)}{100}$$

$(38.964)(93.26\%) + (39.964)(0.01\%) + (40.962)(6.73\%)$

Note: Do *not* allow credit for a numerical setup using mass numbers rather than isotopic masses.

55 [1] Allow 1 credit. Acceptable responses include, but are not limited to:

There are two nitrogen atoms and six hydrogen atoms on the reactant side and two nitrogen atoms and six hydrogen atoms on the product side.

There is the same number of atoms of each element on both sides of the equation.

2 N atoms + 6 H atoms = 2 N atoms and 6 H atoms

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

The energy term is on the right side of the equation.

The 91.8 kJ of energy is on the product side.

The heat term is on the right.

Heat is a product.

Note: Do *not* accept "Heat is produced." without stating supporting evidence from the equation.

57 [1] Allow 1 credit for 15.0 mol *or* 15 mol.

58 [1] Allow 1 credit for 3 *or* three.

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

The force of collisions is less at 300. K than at 450. K.

lower at 300 K than at 450 K

greater at 450 K

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

Temperature: increase
Pressure: decrease

Temperature: higher
Pressure: lower

Temperature: any temperature above 300. K
Pressure: any pressure lower than 100. kPa

61 [1] Allow 1 credit for 800. mL *or* 800 mL.

62 [1] Allow 1 credit for organic acid *or* organic acids.

63 [1] Allow 1 credit for C *or* carbon.

64 [1] Allow 1 credit for 2 *or* one pair.

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

Both propanoic acid and ethyl methanoate have the same molecular formula but different structural formulas.

Both compounds are composed of 3 carbon atoms, 6 hydrogen atoms, and 2 oxygen atoms but differ in the arrangement of their atoms.

same molecular formula, different structural formulas

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:

Bromine and iodine have similar chemical properties because their atoms each have seven valence electrons in the ground state.

The outermost shell of each bromine and iodine atom has 7 electrons.

Atoms of these elements have the same number of valence electrons.

same number of valence electrons

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

The bromine has stronger intermolecular forces than chlorine.

The chlorine has weaker IMF.

68 [1] Allow 1 credit. Acceptable responses include, but are not limited to:

The first ionization energy of these 4 elements decreases in order of increasing atomic number.

From fluorine through iodine, the first ionization energy decreases.

The first ionization energy decreases.

decreases

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

At 3200 K, the filament is below the melting point of tungsten, which is 3695 K.

The melting point of tungsten is higher than the temperature inside the halogen bulb.

Tungsten, W, doesn't melt until 3695 K.

70 [1] Allow 1 credit for metal *or* metals *or* transition metal.

71 [1] Allow 1 credit for 295 K *or* any value from 295 K to 295.2 K, inclusive.

72 [1] Allow 1 credit for 677 J *or* any value from 677 J to 680.4 J, inclusive.

73 [1] Allow 1 credit. Acceptable responses include, but are not limited to:

from hot water to air at room temperature

from towel with hot water to air around the beaker

from water to air

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

The potential energy of the water molecules increases as the water evaporates.

There is more potential energy in the water vapor molecules than in the molecules in liquid water.

The water molecules gain PE.

increases

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

One paper towel was left dry as a control to see if the temperature of the towel changes without adding any water.

The student could see if there is a cooling effect with the dry towel.

The dry towel on the beaker is a control in the activity.

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

chemical potential

chemical

potential

77 [1] Allow 1 credit. Acceptable responses include, but are not limited to:

Zn(s) electrode

Zn(s)

zinc

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

$Ni^{2+}(aq) + 2e^- \rightarrow Ni(s)$

$Ni^{+2} + 2e^- \rightarrow Ni$

Note: Do *not* allow credit for the e without the minus sign (−).

79 [1] Allow 1 credit for OH^- *or* OH^- ion *or* hydroxide *or* hydroxide ion.

Note: Do *not* allow credit for OH *or* hydroxyl *or* hydroxyl ion.

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

NaCl(aq)

NaCl

81 [1] Allow 1 credit for yellow.

82 [1] Allow 1 credit for 0.84 M *or* .84 M.

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

β^-

$^{0}_{-1}e$

beta decay

$^{0}_{-1}\beta$

beta

beta particle

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

$^{1}_{0}n$

$_{0}n^{1}$

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

$\frac{1}{8}$

0.125

12.5%

The *Chart for Determining the Final Examination Score for the January 2026 Regents Examination in Physical Setting/Chemistry* will be posted on the Department's web site at: https://www.nysed.gov/state-assessment/high-school-regents-examinations on Tuesday, January 20, 2026. Conversion charts provided for previous administrations of the Regents Examination in Physical Setting/Chemistry 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. Click Regents Examinations.
3. Complete the required demographic fields.
4. Select the test title from the Regents Examination dropdown list.
5. Complete each evaluation question and provide comments in the space provided.
6. Click the SUBMIT button at the bottom of the page to submit the completed form.

Map to Core Curriculum

January 2026 Physical Setting/Chemistry			
Question Numbers			
Key Ideas/Performance Indicators	Part A	Part B	Part C
Standard 1			
Math Key Idea 1		58	71
Math Key Idea 2		33, 47	84
Math Key Idea 3		35, 36, 51, 54, 57, 61	71, 72, 80, 82, 85
Science Inquiry Key Idea 1		31, 32, 37, 39, 43, 46, 50, 53, 55, 56, 59, 60, 62, 63, 64, 65	66, 67, 68, 69, 70, 73, 74, 75, 76, 77, 79, 81, 83
Science Inquiry Key Idea 2			75
Science Inquiry Key Idea 3		31, 32, 34, 37, 39, 40, 42, 44, 45, 46, 47, 48, 49, 50, 54, 63, 64, 65	69, 73, 74, 80, 81, 82, 84, 85
Engineering Design Key Idea 1			
Standard 6			
Key Idea 1			
Key Idea 2		32, 65	
Key Idea 3		49	
Key Idea 4		44, 45	
Key Idea 5		44	
Standard 7			
Key Idea 1			
Key Idea 2			
Standard 4 Process Skills			
Key Idea 3		31, 32, 33, 35, 36, 38, 39, 40, 43, 44, 45, 52, 54, 55, 57, 59, 61	68, 70, 77, 78, 80, 81, 82
Key Idea 4		41, 56	72, 74, 84, 85
Key Idea 5		37	67
Standard 4			
Key Idea 3	1, 2, 3, 4, 5, 6, 8, 9, 16, 17, 18, 19, 22, 23, 24, 25, 26, 27, 28	31, 32, 33, 34, 35, 36, 38, 39, 40, 42, 43, 44, 45, 46, 47, 48, 49, 50, 51, 52, 53, 54, 55, 57, 58, 59, 60, 61, 62, 63, 64, 65	66, 68, 69, 70, 76, 77, 78, 79, 80, 81, 82
Key Idea 4	20, 21, 29	41, 56	71, 72, 73, 74, 75, 83, 84, 85
Key Idea 5	7, 10, 11, 12, 13, 14, 15, 30	37	67
Reference Tables			
2011 Edition	2, 5, 6, 11, 15, 16, 20, 25, 28	31, 32, 33, 34, 35, 36, 37, 39, 41, 45, 46, 47, 50, 51, 52, 54, 56, 61, 62, 63	66, 67, 68, 69, 70, 71, 72, 79, 80, 82, 83, 85