FOR TEACHERS ONLY

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

LIVING ENVIRONMENT

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 Living Environment. Additional information about scoring is provided in the publication *Directions for Scoring Regents Examinations*.

Allow 1 credit for a correct response to each item.

At least two science teachers must participate in the scoring of the Part B–2, Part C, and Part D 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.

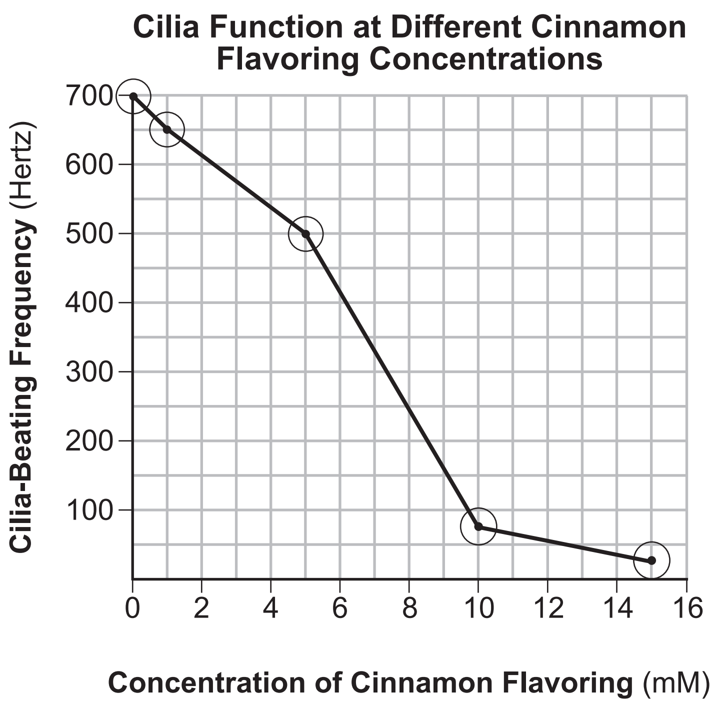
Part B–2

44 [1] Allow 1 credit for marking an appropriate scale on the grid provided, without any breaks in the data, on each labeled axis.

Note: Do *not* allow credit if the grid is altered to accommodate the scale.

45 [1] Allow 1 credit for correctly plotting the data and connecting the points and surrounding each point with a small circle.

Example of a 2-credit graph for questions 44–45:



Note: Allow credit if the points are plotted correctly, but not circled.

Do *not* assume that the intersection of the x- and y-axes is the origin (0,0) unless it is labeled. An appropriate scale only needs to include the data range in the data table.

46 [1] Allow 1 credit. Acceptable responses include, but are not limited to:

— As the concentration of cinnamon flavoring increased, the cilia beating frequency decreased.

— The cilia work better at lower concentrations of cinnamon flavoring.

— It is an indirect relationship.

— Cilia function decreases as cinnamon concentration increases.

47 1

48 [1] Allow 1 credit. Acceptable responses include, but are not limited to:

— When the concentration of cinnamon flavoring is 10 mM, the cilia are only beating 75 Hertz (Hz) compared with 700 Hz with no flavoring. They won't be able to clear the airways of harmful pathogens, so they are more likely to get sick.

— When the concentration of flavoring increases, the cilia don't beat as much and bacteria and viruses aren't removed from the respiratory tract, which would probably increase the risk of lung infection.

— Cinnamon reduces the ability of the cilia to remove inhaled particles/pathogens from the air tract.

49 3

50 3

51 [1] Allow 1 credit. Acceptable responses include, but are not limited to:

— For people to be protected from hepatitis B, all they would need to do is eat a banana.

— The genetically modified banana may be inexpensive to produce and does not need to be refrigerated.

— People who are afraid of needles would just need to eat a banana to be vaccinated.

— People may have fewer reactions to the vaccine.

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

— Organ *A* and organ *C* both produce gametes.

— The ovaries and testes both produce sex hormones.

— They both produce reproductive cells.

— Cells produced in *A* and *C* carry out meiosis.

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

— The uterus supports the development of the embryo/fetus.

— It is where the fetus develops.

— protects the fetus during its development

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

— As the level of oxygen decreases, the level of EPO increases to counteract this.

— Low oxygen stimulates the kidney cells to produce and release EPO. Increased EPO results in an increase in the production of red blood cells, which raises the oxygen levels.

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

— If the person's kidney cells do not produce sufficient EPO, the result would be a low red blood cell count and reduced oxygen levels.

— The person might suffer from reduced energy levels, since a low amount of oxygen would circulate to the cells due to a reduced EPO level and low red blood cell count.

— Homeostasis will be upset because they won't have enough oxygen/energy.

Part C

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

— Without genetic modification, the pig organs would be rejected.

— Genetic modification can remove retroviruses in the pig genome that could be harmful to human cells.

— Modifying the genes stops the expression of factors that cause transplants to be rejected.

— It is necessary to minimize the foreign substances/antigens on the pig organs that stimulate the immune system of the recipient.

57 [1] Allow 1 credit. Acceptable responses include, but are not limited to:

— Unlike using pig organs, the twins from the same zygote have the same DNA code, so their organs don't cause an immune reaction.

— Identical twins have the same genetic information, so the transplanted kidney would not be treated as foreign by the patient.

— Unlike the genetically modified pigs, the identical twins had the same DNA.

58 [1] Allow 1 credit for identifying the O'Neill Pass population as having the most variation and supporting the answer with data from the table. Acceptable responses include, but are not limited to:

— The O'Neill Pass population is 34 tan and 43 dark mice. The percentage of tan mice is 44%. The other populations are either 100%, 94%, 7%, or 0% tan.

— The population at O'Neill Pass is composed of 34 mice with light fur and 43 mice with dark fur. None of the other populations have that great a mixture of fur colors.

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

— More dark-colored rock pocket mice live on the dark lava flows than light-colored mice. Having dark fur on a dark surface appears to provide a survival advantage.

— Except for O'Neill Pass, the other locations show the mice that survived are camouflaged to the soil color.

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

— It was only a small study.

— Using red light over a long time might be harmful to the eyes.

— There was no control group in this experiment.

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

— Increased mitochondria activity creates more ATP to power cell functions.

— More mitochondria will release more energy for the receptor cells.

— Cells can function better with more energy.

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

— Green algae are producers, so if there are fewer producers, then there will be a decrease in the amount of food available to herbivores and carnivores.

— If green algae carry out less photosynthesis, there will be less energy available at each feeding level.

— The stability of the ecosystem would be at risk, since producers convert solar energy into chemical bond energy.

— When one or more organisms in a habitat are harmed or removed, the entire habitat can be disrupted.

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

— parasite/host

— positive (fly)/negative (host)

— They have a parasitic relationship.

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

— The loss/extinction of the medium tree finch reduces biodiversity, which would reduce stability of the ecosystem.

— Reduced diversity of species decreases the chance that some will survive in the face of large environmental change.

— The loss of these finches will disrupt food webs.

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

— The hybrid finch chicks are more likely to survive, reproduce, and have offspring because they are less affected by the flies.

— The hybrid finch chicks have more success surviving attacks from vampire flies than chicks of the medium tree finch.

— Vampire fly larvae had less success feeding on the hybrid chicks than the medium tree finch chicks.

66 [1] Allow 1 credit. Acceptable responses include, but are not limited to:

— Are the wasps likely to prey upon any native organisms that already live there?

— Will other activities of these introduced wasps somehow reduce the biodiversity of the Galapagos Islands?

— Will these wasps survive the climate of the Galapagos long enough to be effective in reducing the vampire fly population?

— Will the wasps lay eggs in the vampire flies?

— Should the researchers investigate if the wasp will attack only the vampire flies and not native species?

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

— The policy will benefit future generations because there will be less pollution.

— The policy will extend the life of current supplies of non-renewable energy sources.

— New job opportunities will be created.

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

— The European birds have no natural predators in New York City.

— European birds found an abundance of food, so their populations increased rapidly.

— They could outcompete the native birds.

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

— There is now less food available, so fewer native birds are supported in the environment.

— With more competition, fewer native birds can live there.

70 [1] Allow 1 credit for stating a conclusion, based on the information provided, on the effect of forests on the atmospheric CO_2 levels between 1960 and 2010 and supporting the answer. Acceptable responses include, but are not limited to:

— The existing forests are not able to prevent an increase in the atmospheric CO_2 levels.

— As deforestation takes place, carbon dioxide levels continue to build up in the atmosphere.

— Between 1960 and 2010, forests were responsible for seasonal differences in CO_2 levels.

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

— A healthy forest provides habitats/food/niches for various animals in the ecosystem.

— Trees make energy available to many other organisms in the ecosystem.

72 [1] Allow 1 credit for red oak trees and supporting the answer. Acceptable responses include, but are not limited to:

— The red oak trees would be best. These trees store a little more than 1 Mt of carbon more then hemlock when they reach 60cm diameter.

— The mature red oaks will store about 5 Mt of carbon and the hemlock stores only about 4 Mt of carbon.

— According to the graph, the red oak trees will keep more carbon out of the atmosphere than the hemlock trees.

— The graph shows that the red oaks at any diameter store more carbon than hemlock.

Part D

73 2

74 4

75 3

76 3

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

— *D* – it evolved from *B*

— either *D* or *E* or *F* because *B* is their ancestor

78 [1] Allow 1 credit for identifying any *two* birds that would be expected to eat similar foods. Acceptable responses include, but are not limited to:

— the red-necked stint and the red-capped plover, because they both have short beaks

— the tattler and the sandpiper, because their beaks are both long and thin, unlike the others shown

— The red-necked stint and the ruddy turnstone both have similar beaks, which are long and pointed.

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

— The camouflage/blending could make them less noticeable to predators.

— The coloration/pattern could help them attract mates.

— The pattern may make it hard for their prey to see them clearly.

80 [1] Allow 1 credit for explaining the effect of this would have on the population of these birds and supporting the answer. Acceptable responses include, but are not limited to:

— The warblers' resources might be decreased and many will not survive, while the sharp-billed ground finches eat mostly plants and won't be affected very much.

— The pesticide might be present on the foods of both types of birds and cause them to be sickened by the chemicals in it, and their population could decrease.

81 4

82 2

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

- — Certain waste products produced by muscle cell activity had built up in their cells.
- — Lactic acid/wastes accumulated in their cells.
- — Exercise caused their muscle cells to produce waste products.
- — The muscle cells used available oxygen/glucose needed to produce ATP.

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

- — Stress increased heart rate in most of the participants.
- — Since not all participants' heart rates increased during stressful situations, stress does not necessarily increase heart rate.
- — Stress increases the heart rate slightly in a majority of people, but not all.
- — Heart rate increased in about 26 out of 31 participants during stressful situations, therefore stress increases heart rate.

85 [1] Allow 1 credit for explaining why these results are valid even though average individual heart rates may vary and supporting the answer. Acceptable responses include, but are not limited to:

- — People are different and have different average relaxed heart rates, and about 80% of them reacted to stress anyway.
- — Even though heart rates vary, many of the people tested showed a higher rate under stress than they did relaxing.
- — Approximately 80% of the people tested showed a higher rate under stress than when relaxing, regardless of their resting average.
- — There are people with both high and low relaxed heart rates that still showed an increase in the rate with stress.

The *Chart for Determining the Final Examination Score for the January 2026 Regents Examination in Living Environment* will be posted on the Department's web site at: https://www.nysed.gov/state-assessment/high-school-regents-examinations on the day of the examination. Conversion charts provided for previous administrations of the Regents Examination in Living Environment 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 Living Environment

Standards	Question Numbers			
	Part A 1–30	Part B–1 31–43	Part B–2 44–55	Part C 56–72
Standard 1 — Analysis, Inquiry and Design				
Key Idea 1		35		60, 66
Key Idea 2				
Key Idea 3			46, 49	58, 70
Appendix A (Laboratory Checklist)			44, 45, 47	
Standard 4				
Key Idea 1	3, 8, 10, 15, 26, 30	32, 37, 38, 41	48	
Key Idea 2	1, 11, 17, 20	31, 33, 34	51	
Key Idea 3	2, 14, 18, 21, 24	42		59, 65
Key Idea 4	5, 7, 19, 22, 28		52, 53	57
Key Idea 5	9, 13, 16	36	50, 54, 55	56, 61
Key Idea 6	25, 27, 29	39		62, 63, 64, 68, 69
Key Idea 7	4, 6, 12, 23	40, 43		67, 71, 72

Part D 73–85	
Lab 1	75, 76, 77, 81, 82
Lab 2	83, 84, 85
Lab 3	74, 78, 79, 80
Lab 5	73