FOR TEACHERS ONLY

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

LIVING ENVIRONMENT

Wednesday, August 20, 2025 — 12:30 to 3:30 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 *Information Booklet for Scoring Regents Examinations in the Sciences*.

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 Wednesday, August 20, 2025. 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.

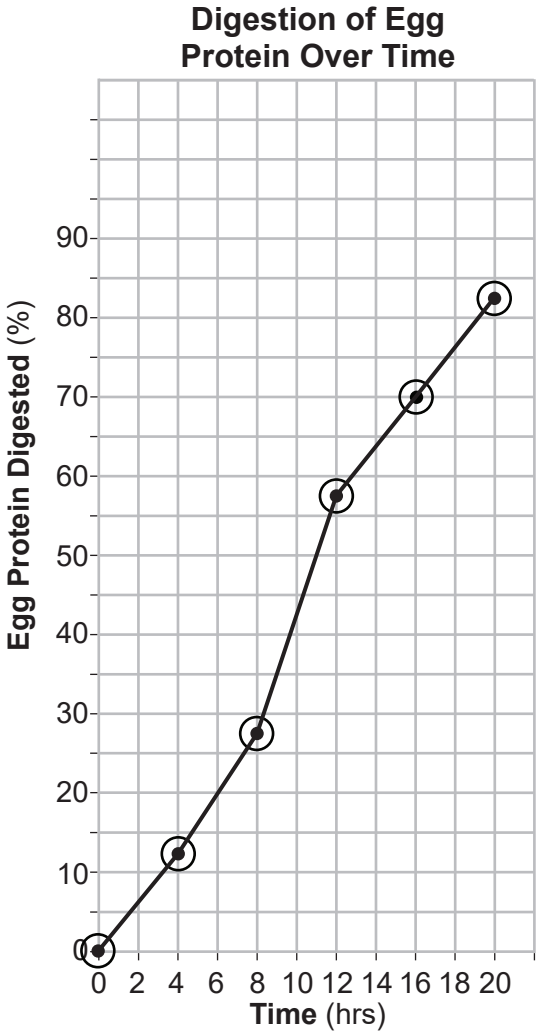
Because scale scores corresponding to raw scores in the conversion chart may change from one administration to another, it is crucial that, for each administration, the conversion chart provided for that administration be used to determine the student's final score.

Part B–2

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

45 [1] Allow 1 credit for correctly plotting the data and connecting the points.

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



Note: Allow credit if points are correctly plotted 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.

Do *not* allow credit for plotting points that are not in the data table, or for extending lines beyond the data points.

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

— Increase the number of trials.
— Increase the number of setups.
— Add a control with no enzyme.
— Repeat the investigation many times.

47 3

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

— The shape of the enzyme/protein changed.
— The enzyme was denatured.
— Heat changed the shape of the enzyme molecule so that it could not catalyze the reaction.

49 3

50 3

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

— original source of energy
— provides the energy for photosynthesis

52 [1] Allow 1 credit for: trees *or* shrubs *or* grasses.

53 [1] Allow 1 credit for stating process *B* and for supporting the answer. Acceptable responses include, but are not limited to:

— It is sexual reproduction. Offspring inherit different combinations of genes.

— Sexual reproduction results in a new combination of traits.

— It involves the sorting and recombination of chromosomes.

— It increases the chance of getting DNA from different sources.

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

— It allows some individuals to survive in a changing environment.

— It increases biodiversity by increasing genetic combinations.

— There is a better chance the species will survive.

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

— By banning the transport of firewood, the emerald ash borer might be contained in an area and not spread into unaffected areas.

— The transport of untreated firewood may lead to the elimination of ash trees.

— It will slow/stop the spread of an invasive species.

— Untreated firewood could contain the ash borer, which could disrupt local food webs.

Part C

56 [1] Allow 1 credit for stating *one* life function that would be affected by cobra venom and explaining why it would be affected. Acceptable responses include, but are not limited to:

— movement – communication between nerve and muscle cells is blocked

— respiration/breathing because it causes the diaphragm to stop functioning

— coordination – nerve cells would not be able to send messages to muscle cells

— (aerobic) cellular respiration because it requires oxygen and the venom causes breathing to stop

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

— The venom contains a molecule that blocks the acetylcholine receptors on muscle cells.

— The nerve cells cannot communicate with the muscle cells because the receptors are blocked.

— It blocks receptors on cells.

— It blocks the communication between nerve and muscle cells.

58 [1] Allow 1 credit for ragweed.

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

— The pollen is an antigen that stimulates an immune response.

— The pollen caused an allergic reaction.

— Pollen stimulates the immune system to release histamine.

— The student's body interpreted the pollen as harmful and releases histamine.

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

— produces antibodies against pathogens

— White blood cells engulf invaders.

— White blood cells attack the invaders.

— It releases antibodies in response to antigens.

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

— enzymes/restriction enzymes

— Restriction enzymes are used to remove the DNA from the human cell.

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

— All offspring bacteria will be identical to the parent.

— They all have the gene to produce insulin.

— Bacteria reproduce asexually.

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

— The insulin made by the bacteria is identical to normal human insulin, so diabetics won't have a reaction against it like they might with the animal insulin.

— Diabetics might be allergic to the insulin from animals, but not to the insulin made by the bacteria.

— The bacterial insulin may be cheaper/easier/faster to produce.

— There would be fewer allergic reactions/side effects.

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

— Animals higher in the food chain eat more organisms and store more DDT.

— The concentration increases because each animal consumes organisms that already have some DDT in their tissues. The DDT is not excreted, so it just adds up.

— The DDT is stored in each animal's fatty tissues. An herbivore accumulates DDT from all of the plants it eats. A carnivore accumulates the DDT of all of the herbivores it consumes. The top carnivore gets all of the DDT consumed by the organisms below it in the food chain.

65 [1] Allow 1 credit for 20 ± 1.

66 [1] Allow 1 credit for basing the answer on the data in the graph whether or not the ban had been successful and for supporting the answer. Acceptable responses include, but are not limited to:

— The DDT ban has been successful because the eagle population went from no breeding pairs in 1972 to more than 120 in 2007.

— The ban has been successful. Since 1972, the number of breeding pairs of eagles has increased from zero to more than 120.

— Yes, the number of eagles has increased.

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

— The ban is a trade-off. Without DDT, there may be more insects that transmit diseases. However, DDT won't be in the environment and accumulate in the fatty tissue of animals.

— Banning DDT is an example of a trade-off because without DDT, the eagle population increases, but so could mosquitoes that spread malaria/lice that transmit typhus.

— There could be more mosquitoes but the DNA would be removed from the food chain.

Note: Do *not* allow credit if only an advantage or a disadvantage is stated.

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

— People can protect eagle habitats.

— Laws can be passed to make it illegal to hunt or kill eagles.

— Set up protected eagle nesting sites.

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

— predator-prey

— competition

— The carp eat native fish.

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

— Carp are well-adapted to their new environment.

— A lot of food is available.

— fewer predators/no natural enemies

— They might outcompete native fish.

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

— The introduced fish might kill off/eliminate some native species.

— There will be less biodiversity.

— The food web will be disrupted.

72 [1] Allow 1 credit. Acceptable responses include, but are not limited to:

— In recent years, more people are putting out bird feeders.

— Climate change has resulted in warmer winter weather in southern England.

— They find enough food in backyards.

Part D

73 2

74 4

75 4

76 3

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

— Pulse is dependent on the level of activity.

— Activity level affects pulse rate.

— The activity is the variable that you directly control.

— The activity is the manipulated variable.

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

— The cells would appear smaller after being exposed to salt water.

— The cells would have shrunk.

— The cells would appear to have lost water.

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

— During exercise, increased heart rate moves more food and O_2 to cells.

— During exercise, cells produce more carbon dioxide that must be taken to the lungs for disposal.

— During exercise, the body produces excess heat. Blood must travel to the skin faster to remove this extra heat.

— Increased heart rate moves food and O_2 to cells faster.

80 [1] Allow 1 credit for *B* and supporting the answer. Acceptable responses include, but are not limited to:

— because it has the most similar characteristics to plant *A*

— because all observed traits are the same except flower color

— It has three out of four traits in common.

81 3

82 4

83 [1] Allow 1 credit for selecting *one* species that would compete with species *g* and supporting the answer. Acceptable responses include, but are not limited to:

— Species *c* might compete because they have similar curved beak shapes.

— Species *c*, because its beak is small like *g*.

— Species *a*, because the shapes of the beaks indicate that they may eat similar foods.

— Species *d*, because it has a short, thick beak like *g*.

84 [1] Allow 1 credit for diffusion *or* passive transport *or* osmosis.

85 [1] Allow 1 credit for identifying *two* mistakes made when graphing the information from the table. Acceptable responses include, but are not limited to:

— The students did not label the *x*-axis and the data point for 18 squeezes is not plotted correctly.

— The scale is wrong for the Trial Numbers axis (*x*-axis), and the *x*-axis is not labeled.

The *Chart for Determining the Final Examination Score for the August 2025 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

August 2025 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				65
Key Idea 2			46	
Key Idea 3		33, 37	47, 49	58
Appendix A (Laboratory Checklist)			44, 45	
Standard 4				
Key Idea 1	1, 14, 25	38		56, 57, 64, 69, 70, 71
Key Idea 2	4, 7, 9, 11, 29	35, 39		61
Key Idea 3	15, 18, 20, 27, 30	42, 43		72
Key Idea 4	19		53, 54	62
Key Idea 5	16, 21, 23, 24, 28	32, 41	48, 52	59, 60, 63
Key Idea 6	3, 8, 10, 13, 26	31, 34, 40	50, 51	
Key Idea 7	2, 5, 6, 12, 17, 22	36	55	66, 67, 68

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