

FOR TEACHERS ONLY

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

LE

LIVING ENVIRONMENT

Tuesday, June 24, 2008 — 9:15 a.m. to 12:15 p.m., only

SCORING KEY AND RATING GUIDE

Directions to the Teacher:

Refer to the directions on page 3 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 <http://www.emsc.nysed.gov/osa/> and select the link "Examination 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.

Part A and Part B-1

Allow 1 credit for each correct response.

Part A			Part B-1	
11	113	211	313	374
24	124	222	322	382
31	132	233	334	394
44	144	241	341	401
53	153	252	353	413
61	163	262	361	422
71	172	274		
84	181	283		
92	191	291		
102	202	303		

LIVING ENVIRONMENT – *continued*

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*.

Use only *red* ink or *red* pencil in rating Regents papers. Do not attempt to *correct* the student's work by making insertions or changes of any kind.

Allow 1 credit for each correct response for multiple-choice questions.

On the detachable answer sheet for Part A and Part B–1, indicate by means of a checkmark each incorrect or omitted answer to multiple-choice questions. In the box provided in the upper right corner of the answer sheet, record the number of questions the student answered correctly for each of these parts.

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 all the open-ended questions on a student's answer paper.

Students' responses must be scored strictly according to the Scoring Key and 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. In the student's examination booklet, record the number of credits earned for each answer in the box printed to the right of the answer lines or spaces for that question.

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.

Raters should enter the scores earned for Part A, Part B–1, Part B–2, Part C, and Part D on the appropriate lines in the box printed on the answer sheet and should add these five scores and enter the total in the box labeled "Total Raw Score." Then the student's raw score should be converted to a scaled score by using the conversion chart that will be posted on the Department's web site <http://www.emsc.nysed.gov/osa/> on Tuesday, June 24, 2008. The student's scaled score should be entered in the box labeled "Final Score" on the student's answer sheet. The scaled score is the student's final examination score.

All student answer papers that receive a scaled score of 60 through 64 **must** be scored a second time. For the second scoring, a different committee of teachers may score the student's paper or the original committee may score the paper, except that no teacher may score the same open-ended questions that he/she scored in the first rating of the paper. The school principal is responsible for assuring that the student's final examination score is based on a fair, accurate, and reliable scoring of the student's answer paper.

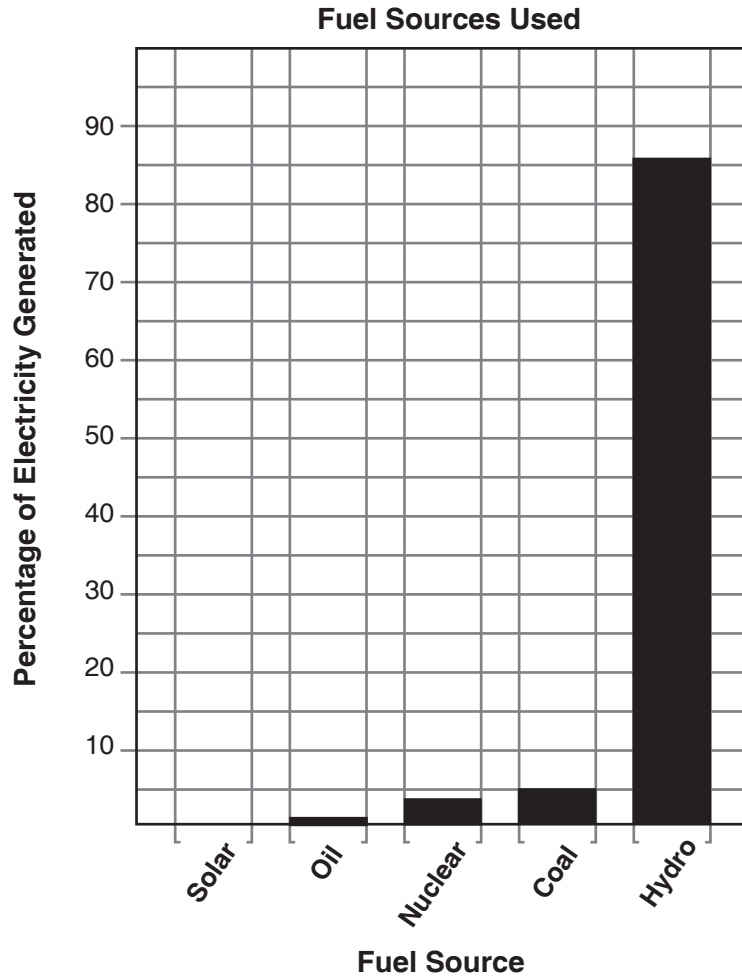
Because scaled scores corresponding to raw scores in the conversion chart may change from one examination to another, it is crucial that for each administration, the conversion chart provided for that administration be used to determine the student's final score.

Part B-2

43 [1] Allow 1 credit for marking an appropriate scale on the axis labeled “Percentage of Electricity Generated.”

44 [1] Allow 1 credit for constructing vertical bars to represent the data.

Example of a 2-credit response for questions 43 and 44:



Note: Allow credit if the correct data are clearly represented, even if the bars are *not* shaded.

45 [1] Allow 1 credit for coal *or* oil.

46 [1] Allow 1 credit for hydro (water) *or* solar (Sun).

47 [1] Allow 1 credit. Acceptable responses include, but are not limited to:

— Burning coal can produce air pollution *or* acid rain *or* global warming.

Note: Do *not* allow credit for ozone layer destruction or just pollution.

LIVING ENVIRONMENT – *continued*

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

- The hawk population will decrease because there will be fewer snakes since there are fewer frogs for them to eat.
- The hawk population will increase because there will be more grasshoppers for the shrews to eat and more shrews for the hawks to eat.

49 [1] Allow 1 credit. Acceptable responses include, but are not limited to:

- chloroplast
- cell wall

50 [1] Allow 1 credit. Acceptable responses include, but are not limited to:

- Mating with another earthworm allows for variety in the species.
- better chances of survival due to variation or genetic recombination

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

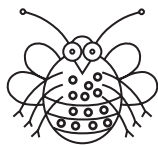
- 5. a. has white *or* clear *or* light wings
- 5. b. has shaded *or* black *or* dark wings

Note: Allow credit for any response that shows a distinction in wing shading.

52 [1] Allow 1 credit for correctly identifying the species, as shown below.



Species D



Species E



Species C



Species F



Species B

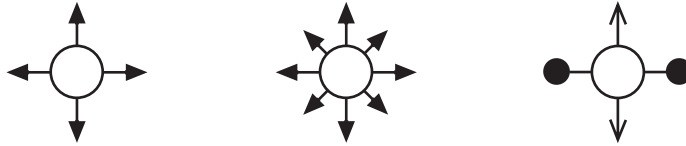


Species A

LIVING ENVIRONMENT – *continued*

- 53** [1] Allow 1 credit for drawing one or more shapes on the virus that will fit with the receptor molecules on the human cell.

Examples of 1-credit responses:



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

- mutation
- mutagenic agent that led to a new protein

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

- parasite/host (parasitic)
- pathogen/host (pathogenic)

Part C

56 [1] Allow 1 credit for pancreas *or* Islets of Langerhans.

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

- sugar
- glucose
- ketones

58 [1] Allow 1 credit. Acceptable responses include, but are not limited to:

- They can transfer pathogens to humans and domestic animals.
- Imported species may displace native species.
- increased competition for food and/or habitat for native species

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

- make antibodies
- White blood cells will engulf and destroy pathogens.

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

- The coyote population will decrease, as the wolf will be a competitor for the same prey as the coyote.
- The coyote population will be unaffected because there is sufficient prey for both the wolf and the coyote.

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

- The coyotes control the growth of certain prey populations.

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

- The wolf was once a natural part of this ecosystem.
- to control the deer population
- There is adequate prey to support the wolf population.
- It would increase biodiversity.

63 [3] Allow a maximum of 3 credits, allocated as follows:

- Allow 1 credit for stating the hypothesis to be tested. Acceptable responses include, but are not limited to:
 - Tomato plants exposed to 16 hours of light will grow faster than those exposed to 8 hours of light.
 - Light affects plant growth.
 - A brighter light will cause the tomato plants to grow larger.

Note: Do *not* allow credit for a hypothesis written in the form of a question.

- Allow 1 credit for identifying the independent variable in the experiment. Acceptable responses include, but are not limited to:
 - the amount of light
 - light
 - the intensity of the light
- Allow 1 credit for describing the type of data to be collected. Acceptable responses include, but are not limited to:
 - height of plants
 - number of leaves
 - size of leaves
 - mass of the plants
 - amount of growth

Note: The type of data must be measurable.

64 [3] Allow a maximum of 3 credits, allocated as follows:

- Allow 1 credit for identifying *one* function regulated by the guard cells in leaves. Acceptable responses include but are not limited to:
 - gas exchange
 - respiration
 - photosynthesis
- Allow 1 credit for explaining how guard cells carry out this function. Acceptable responses include but are not limited to:
 - Guard cells change shape.
 - Guard cells change the size of the leaf openings.
- Allow 1 credit for giving *one* possible evolutionary advantage of the position of guard cells on the leaves of land plants. Acceptable responses include but are not limited to:
 - prevents excess evaporation of water on sunny days
 - prevents the entrance of some pollutants

LIVING ENVIRONMENT – *continued*

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

- No, mutations in body cells are not transmitted to offspring.
- No, only mutations in gametes are transmitted to offspring.

66 [2] Allow a maximum of 2 credits, 1 credit for each of *two* acceptable responses. Acceptable responses include, but are not limited to:

- decrease in consumers/biodiversity
- decrease in oxygen
- decrease in available energy
- increase in carbon dioxide

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

- doesn't allow for recycling of nutrients in the lawn
- takes up landfill space

Part D

68 2

69 1

70 1

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

- A and C– most characteristics in common
- A and C– same type of chlorophyll present

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

- structure of protein molecules
- types of enzymes present
- DNA sequences
- other physical characteristics

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

- Two related plants may produce similar substances that could be used for medicines.
- A related plant may provide a cheaper source of a substance.
- If a plant becomes extinct, a related plant may provide an alternative source of a substance.

74 3

75 2

76 [1] Allow 1 credit for drawing all the •s inside the membrane only, and drawing some of the x's inside and some outside the membrane.

Example of a 1-credit response:



Note: The starch indicator does *not* have to be evenly distributed.

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

- A blue-black color would indicate the presence of starch.
- A color change would occur.

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

- Some molecules are too large to pass through the membrane.
- Some molecules are not soluble.
- the permeability of the membrane

79 2

80 3

The *Chart for Determining the Final Examination Score for the June 2008 Regents Examination in Living Environment* will be posted on the Department's web site <http://www.emsc.nysed.gov/osa/> on Tuesday, June 24, 2008. 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 www.emsc.nysed.gov/osa/exameval/.
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

June 2008 Living Environment

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

Part D 68–80	
Lab 1	68,69,71,72,73
Lab 2	70
Lab 3	74,75
Lab 5	76,77,78,79,80