

FOR TEACHERS ONLY

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

LE

LIVING ENVIRONMENT

Thursday, June 18, 2009 — 1:15 to 4:15 p.m., only

SCORING KEY AND 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 <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	112	212	312	374
24	124	221	323	381
31	131	234	334	394
41	143	242	344	402
52	153	251	352	413
63	162	263	361	
73	173	274		
81	184	282		
91	192	294		
103	201	302		

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 check mark 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 Thursday, June 18, 2009. 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

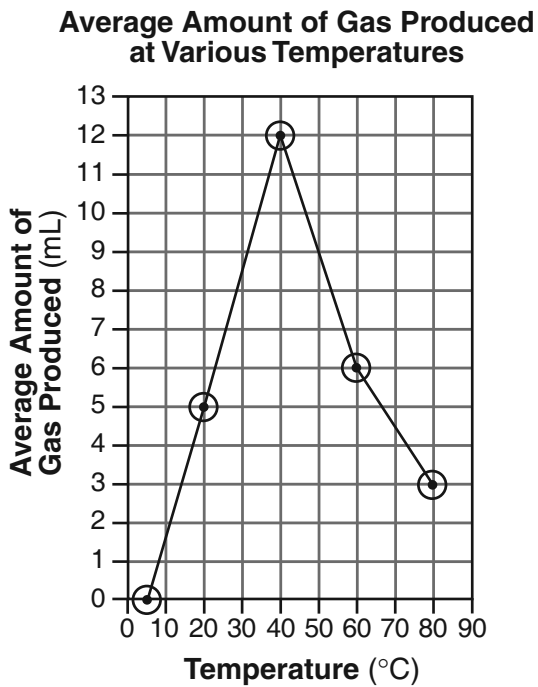
42 [1] Allow 1 credit. Acceptable responses include, but are not limited to:

— both decreased

43 [1] Allow 1 credit for marking an appropriate scale on each labeled axis.

44 [1] Allow 1 credit for correctly plotting the data and connecting the points.

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



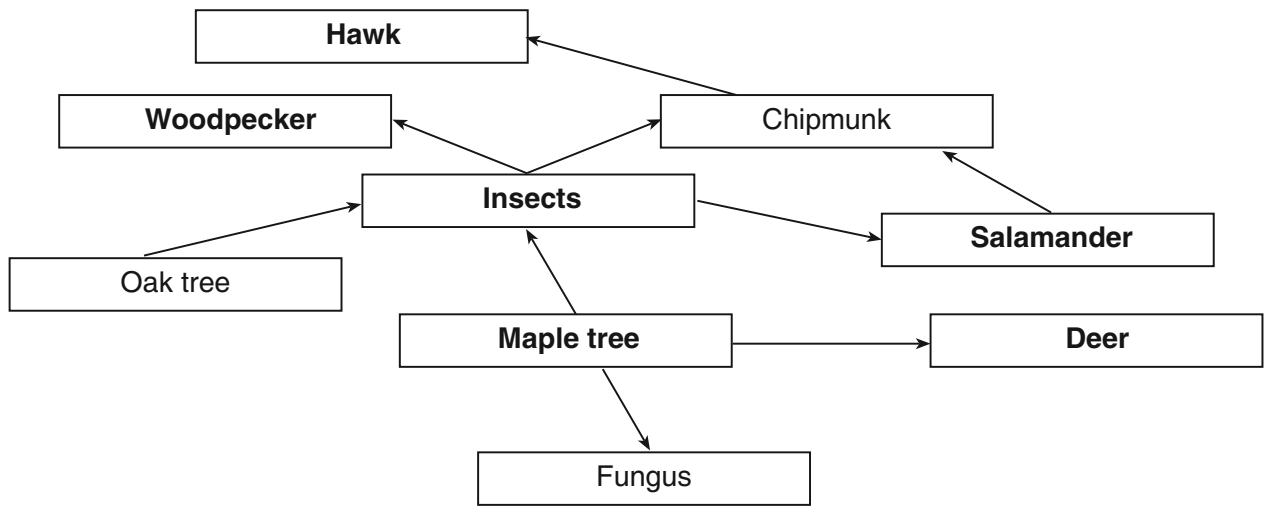
Note: Allow credit if the points are plotted correctly but not circled.
 Make no assumption about the origin unless it is labeled.
 Do *not* allow credit for plotting points that are not in the data table, e.g., (0,0).

45 3

46 2

47 [1] Allow 1 credit.

Example of a 1-credit response:



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

- maple tree
- tree
- oak

49 1

50 [2] Allow a maximum of 2 credits, 1 credit for correctly completing 2*a* and *b* and 1 credit for correctly completing 3*a* and *b*.

Example of a 2-credit response:

Dichotomous Key

- 1. a. Legs present.....Go to 2
- b. Legs not present.....Go to 3
- 2. a. **Four legs**.....**IV (Dog)**
- b. **Eight legs**.....**II (Spider)**
- 3. a. **Fins present****III (Fish)**
- b. **Fins not present or segments present**.....**I (Earthworm)**

51 [4] Allow a maximum of 4 credits, 1 credit for each correct response in the chart.

Example of a 4-credit response:

Name of Structure	Letter on Diagram	Function of Structure
ovary	C	produces gametes
uterus	D	site of internal development
placenta	B	transports oxygen directly to the embryo

Part C

52 [4] Allow a maximum of 4 credits, allocated as follows:

- Allow 1 credit for identifying *one* human activity that could release chemicals harmful to the environment. Acceptable responses include, but are not limited to:
 - burning fossil fuels
 - dumping toxic wastes

- Allow 1 credit for identifying the chemical released by that activity. Acceptable responses include, but are not limited to:
 - CO₂ /sulfur dioxide/nitrogen gases
 - heavy metals

Note: Do *not* allow credit for pollution.

- Allow 1 credit for stating *one* effect the release of this chemical would most likely have on future ecosystems. Acceptable responses include, but are not limited to:
 - may increase global warming/acid rain
 - cause mutations

- Allow 1 credit for stating *one* way in which humans can reduce the production of this chemical to lessen its effect on future ecosystems. Acceptable responses include, but are not limited to:
 - use alternative fuels (solar *or* wind *or* water)
 - increase/enforce legislation that regulates the disposal of toxic wastes

53 [5] Allow a maximum of 5 credits, allocated as follows:

- Allow 1 credit for stating the hypothesis the experiment would test. Acceptable responses include, but are not limited to:

- Acid rain will cause a decrease in the number of seeds that germinate.

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

- Allow 1 credit for stating how the control group would be treated differently from the experimental group. Acceptable responses include, but are not limited to:

- The control group would be watered with water at pH 7, while the experimental groups would be watered with water at pH less than 7.

- Allow 1 credit for stating *two* factors that must be kept the same in both the experimental and the control group. Acceptable responses include, but are not limited to:

- same soil
- same temperature
- same type of plants (seeds)
- fertilizer use
- amount of water

- Allow 1 credit for identifying the independent variable in the experiment. Acceptable responses include, but are not limited to:

- pH of water

- Allow 1 credit for correctly labeling the columns on the data table.

Example of a 1-credit response:

Data Table

pH	Number of Seeds that Germinate

LIVING ENVIRONMENT – *continued*

54 [2] Allow a maximum of 2 credits, 1 credit for each of *two* ways that the use of these windmills to produce energy would be beneficial to the environment. Acceptable responses include, but are not limited to:

- no air pollution from windmills
- burn less oil/coal
- Wind is a renewable resource.

55 [2] Allow a maximum of 2 credits, 1 credit for stating *one* specific example of an imported species that has altered the balance of an ecosystem and 1 credit for explaining how it has disrupted the balance in that ecosystem.

Examples of 2-credit responses:

- Zebra mussels outcompete native species for food, causing native species to decline in numbers.
- Purple loosestrife has crowded out native plants, leaving many native animals with much less available food, since they cannot eat the purple loosestrife.
- Rabbits in Australia ate much of the vegetation that previously fed many Australian animals. Populations of many native species were reduced drastically, disrupting the ecosystems there.
- Gypsy moths from Europe have overpopulated in parts of the U.S., eating nearly all the leaves of many trees, causing some of the trees to die, and leaving little food for other native species.
- Kudzu from Asia has grown over native plants in the southern U.S., blocking the light and crowding the roots of native plants, causing them to die.

LIVING ENVIRONMENT – *continued*

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

- Most flu viruses cause a runny nose and sore throat, while the H5N1 virus can cause pneumonia.
- The avian flu goes deeper into the lungs and can cause severe pneumonia.
- The avian flu has a more severe effect on humans than most other flu viruses.

57 [1] Allow 1 credit for antibodies.

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

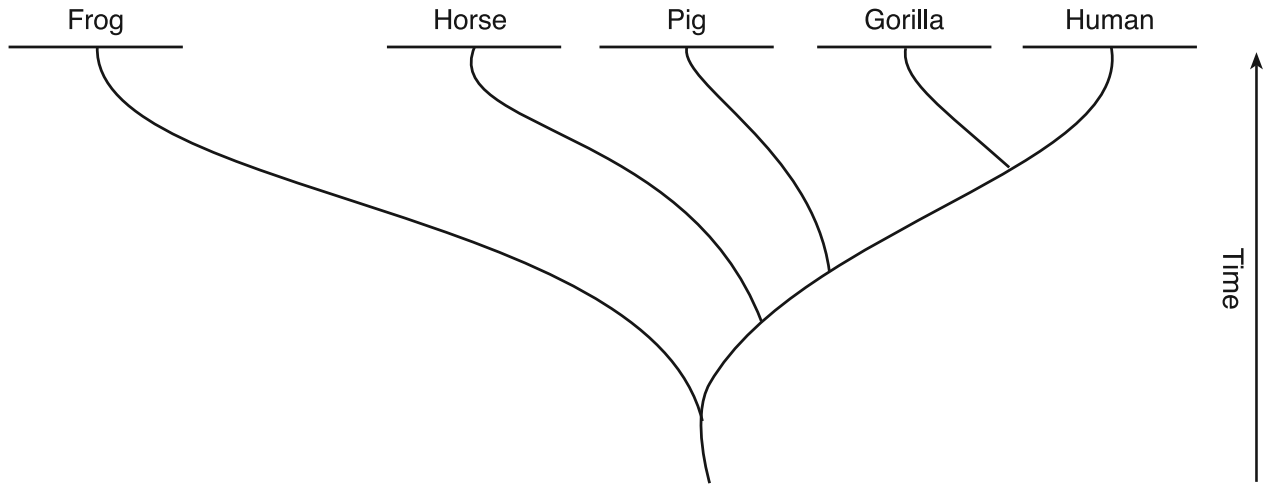
- A vaccine contains dead *or* weakened pathogens.

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

- mutation

Part D

60 [1] Allow 1 credit. All organisms must be in the correct positions as shown below.



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

- Chemical similarities are more reliable than structural similarities.
- Electrophoresis shows chemical similarities, which are more reliable.
- Many unrelated plants have a similar vein pattern.

62 2

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

- The pigment spot is below the surface of the solvent.
- The level of the solvent is too high.

64 1

65 [1] Allow 1 credit for 73.

Note: Allow credit for an acceptable response written in the data table if *no* response is written in the answer space.

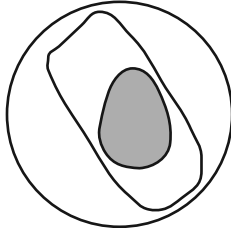
66 [1] Allow 1 credit for writing the name of *one* organ that is affected when a person runs a mile and for describing *one* change that occurs in this organ. Acceptable responses include, but are not limited to:

- Heart — beats faster
- Lungs — take in oxygen faster
- Muscles — use energy faster *or* use more ATP

67 2

68 [1] Allow 1 credit for a sketch showing that the cell membrane shrinks.

Example of a 1-credit response:



Note: Allow credit if the cell is drawn correctly but *not* shaded.

69 4

70 3

71 3

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

- Large ground finches eat mainly plant food and large tree finches eat mainly animal food.
- They do not compete for the same resources, so both can survive.
- They occupy different niches.

The *Chart for Determining the Final Examination Score for the June 2009 Regents Examination in Living Environment* will be posted on the Department's web site <http://www.emsc.nysed.gov/osa/> on Thursday, June 18, 2009. 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 2009 Living Environment

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

Part D 60–72	
Lab 1	60, 61, 63, 70
Lab 2	64, 65, 66
Lab 3	71, 72
Lab 5	62, 67, 68, 69