

FOR TEACHERS ONLY

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

LE

LIVING ENVIRONMENT

Thursday, August 16, 2007 — 12:30 to 3:30 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	
1 4	11 4	21 2	31 4	36 2
2 2	12 3	22 4	32 1	37 4
3 4	13 2	23 1	33 3	38 3
4 3	14 1	24 3	34 3	39 2
5 3	15 3	25 2	35 1	40 2
6 3	16 1	26 1		
7 1	17 3	27 4		
8 1	18 4	28 4		
9 3	19 4	29 1		
10 2	20 2	30 3		

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 Thursday, August 16, 2007. 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

41 3

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

- Many other organisms are caught in the slug traps.
- Traps kill off natural predators of slugs.
- may disrupt food web

43 [1] Allow 1 credit for centipedes *or* ground beetles.

44 [1] Allow 1 credit for indicating that the increasing order of complexity is:

organelle
cell
tissue
organ
organism

45 [1] Allow 1 credit. Acceptable responses include, but are not limited to:

- interfere with development
- cause low birth weight
- cause death of the fetus
- cause Fetal Alcohol Syndrome

Note: Responses that simply state that the fetus could be hurt or harmed are *not* acceptable.

46 2

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

- The reactions in rat cells could be different from those in other organisms.
- to increase validity
- The results of the experiment indicate only what happens in cells outside the organism.

48 [2] Allow a maximum of 2 credits, 1 for naming a specific hormone and 1 for explaining how disruption of the activity of that hormone might upset a feedback mechanism in the body. Acceptable responses include, but are not limited to:

- insulin—prevent regulation of glucose levels in blood
- estrogen (or testosterone)—interfere with messages for development of sex characteristics

49 4

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

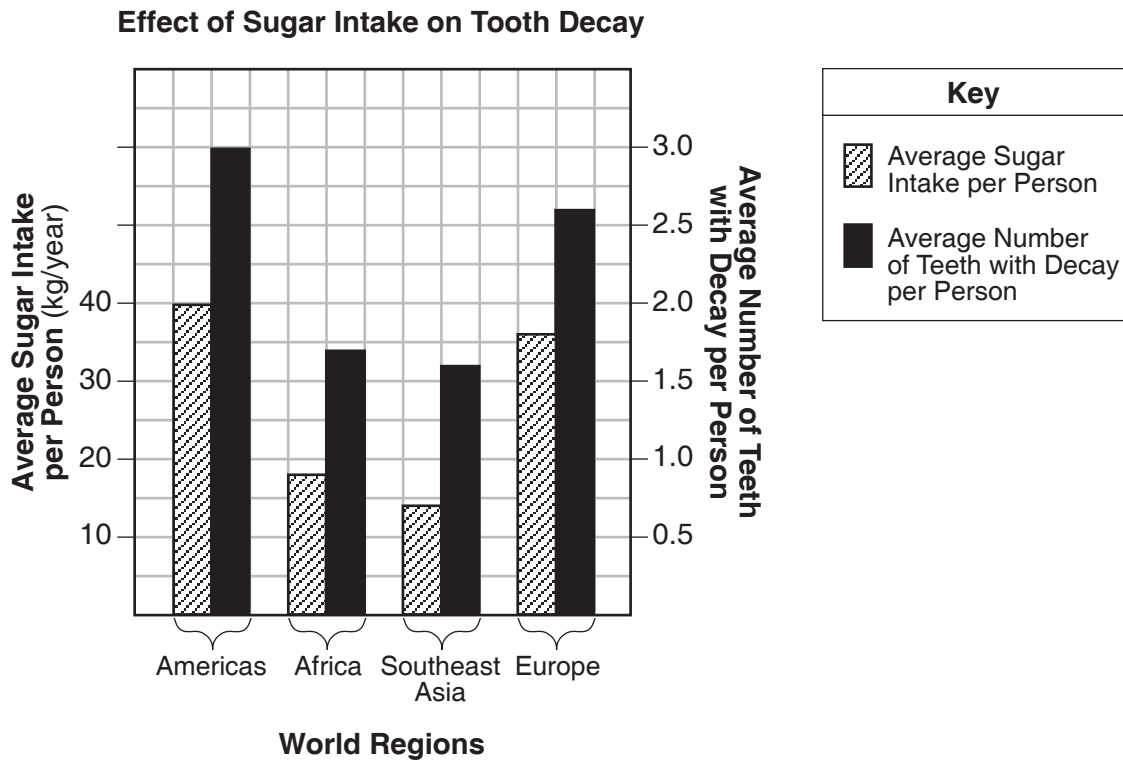
- Enzymes are used to cut the DNA.
- to cut the genetic material

51 [1] Allow 1 credit for marking an appropriate scale.

52 [1] Allow 1 credit for constructing vertical bars to represent the “Average Sugar Intake per Person” and shading the bars according to the key.

53 [1] Allow 1 credit for constructing vertical bars to represent the “Average Number of Teeth With Decay per Person” and shading the bars according to the key.

Example of a 3-credit response for questions 51 through 53:



Note: Do *not* penalize the student more than once for shading the bars incorrectly.

Part C

55 [4] Allow a maximum of 4 credits, allocated as follows:

- Allow 1 credit for stating *one* way the immune system is involved in the rejection of transplanted organs. Acceptable responses include, but are not limited to:
 - The immune system will reject the organ by producing antibodies.
 - Antibodies will cause the organ to be rejected by the recipient.
 - The immune system recognizes the organ as foreign and attacks it.

- Allow 1 credit for explaining why the best source for a donated kidney would be the identical twin of the recipient. Acceptable responses include, but are not limited to:
 - The identical twin of the recipient has the same genetic makeup as the recipient.
 - Identical twins have the same DNA.
 - The recipient will not reject the donated kidney.
 - Twins have the same proteins.
 - The immune system doesn't recognize the kidney as foreign tissue and will not respond by producing antibodies.

- Allow 1 credit for explaining why immunosuppressant drugs might be needed to prevent rejection of a kidney received from a donor other than an identical twin. Acceptable responses include, but are not limited to:
 - to stop the immune system from attacking the donated organ
 - The drugs will block the production of antibodies.
 - The donated kidney has different proteins.

- Allow 1 credit for stating *one* reason a person may get sick more easily when taking an immunosuppressant drug. Acceptable responses include, but are not limited to:
 - Immunosuppressant drugs may depress the immune system and make the recipient more susceptible to disease.
 - weakens the immune system

LIVING ENVIRONMENT – *continued*

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

- Relocated squirrels compete with park squirrels for food *or* space *or* mates.
- Relocated squirrels can mate with park squirrels.

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

- The soil will be enriched by added wastes.
- Relocated squirrels will use water.
- Relocated squirrels will take up space.

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

- Predators will eat the squirrels.
- Competition with other gray squirrels will keep the population from increasing.
- spread of disease because of denser population

59 [4] Allow a maximum of 4 credits, allocated as follows:

- Allow 1 credit for stating *one* effect the increasing human population will have on the availability of natural resources. Acceptable responses include, but are not limited to:
 - More people use more natural resources and they begin to run out.
- Allow 1 credit for stating *one* reason why recycling is important. Acceptable responses include, but are not limited to:
 - Fewer wastes will accumulate in landfills.
 - Recycling keeps certain natural resources available for use by organisms.
 - Resources will last longer.
- Allow a maximum of 2 credits, 1 credit for each of *two* natural resources or products made from natural resources that can be recycled. Acceptable responses include, but are not limited to:
 - water
 - wood/paper
 - soil
 - glass
 - cans
 - plastic

60 [4] Allow a maximum of 4 credits. Acceptable responses include, but are not limited to:

Example of a 4-credit response:

Some medflies have a variation that provides resistance to pesticide. When the pesticide is present, those flies with the favorable variation will survive to reproduce and pass the variation to offspring. A variety of medfly resistant to the pesticide will result.

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

- A loss of biodiversity can result in a shortage of food.
- lack of materials for building *or* medicine *or* research

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

- plant trees
- preserve habitats
- recycle
- do not import foreign species
- work to reduce pollution

Part D

63 1

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

- did not obtain pulse rates before lunch
- sample size too small
- no control group

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

- The blood will bring more oxygen to the brain.
- Increased blood flow will remove wastes from the brain.
- Increased blood flow brings more glucose (food molecules) to the brain.

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

- Yes, because three of the four students solved more problems after exercise.
- No, because one student did fewer problems.
- cannot tell because there are only results from four students
- cannot tell because there are no data for a separate control group

Note: Answers must include a reference to data.

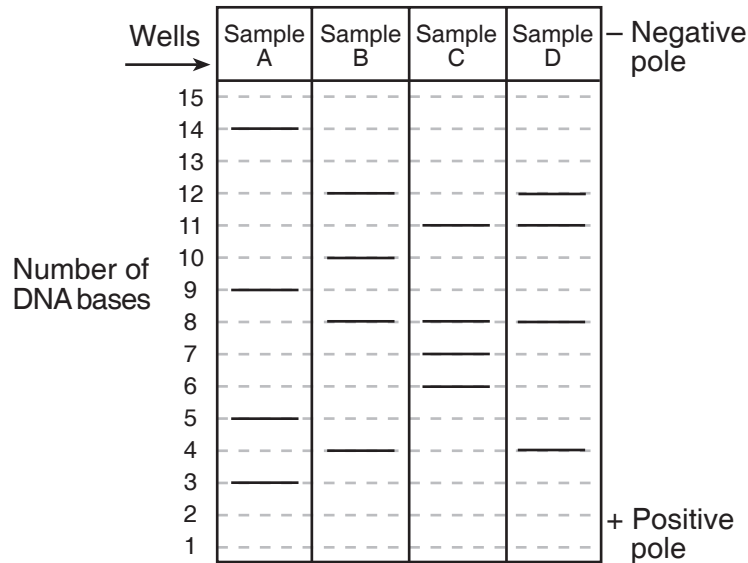
67 [1] Allow 1 credit. Acceptable responses include, but are not limited to:

- The pigeon shares characteristics with all of the other organisms.
- Organisms A and C also lay eggs.

68 1

69 [1] Allow 1 credit for drawing lines to represent the final positions.

Example of a 1-credit response:



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

- *B* and *D* because they have the most fragments in common

Note: Allow credit for a response that is consistent with the student’s response to question 69.

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

- determine identity of criminal
- determine parents of a child
- determine identity of a crime victim
- determine evolutionary relationships

LIVING ENVIRONMENT – *concluded*

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

- The tools represent types of beaks, some of which are more successful for gathering seeds and so are more favorable for survival.
- Students with favorable “beaks” survived.

73 4

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

- strength
- vision
- coordination

75 4

The *Chart for Determining the Final Examination Score for the August 2007 Regents Examination in Living Environment* will be posted on the Department's web site <http://www.emsc.nysed.gov/osa/> on Thursday, August 16, 2007. 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.

On-line 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 on-line 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

August 2007 Living Environment

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

Part D 63–75	
Lab 1	67,69,70,71
Lab 2	63,64,65,66
Lab 3	72,73,74
Lab 5	68,75