The last page of this booklet is the answer sheet for the multiple-choice questions. Fold the last page along the perforations and, slowly and carefully, tear off the answer sheet. Then fill in the heading of your answer sheet. Now circle “Session One” and fill in the heading of each page of your essay booklet.

This session of the examination has two parts. Part A tests listening skills; you are to answer all six multiple-choice questions and write a response, as directed. For Part B, you are to answer all ten multiple-choice questions and write a response, as directed.

When you have completed this session of the examination, you must sign the statement printed at the end of the answer sheet, indicating that you had no unlawful knowledge of the questions or answers prior to the session and that you have neither given nor received assistance in answering any of the questions during the session. Your answer sheet cannot be accepted if you fail to sign this declaration.

The use of any communications device is strictly prohibited when taking this examination. If you use any communications device, no matter how briefly, your examination will be invalidated and no score will be calculated for you.
Part A

**Overview:** For this part of the test, you will listen to an account by Christopher Reeve, answer some multiple-choice questions, and write a response based on the situation described below. You will hear the account twice. You may take notes on the next page anytime you wish during the readings.

**The Situation:** Your school is celebrating Diversity Day. As a member of the publicity committee, you have been asked to write a letter to the editor of your local newspaper promoting the accomplishments of individuals with disabilities. In preparation for writing your letter, listen to an account by actor and director Christopher Reeve. Then use relevant information from the account to write your letter.

**Your Task:** Write a letter to the editor of your local newspaper for Diversity Day discussing actor and director Christopher Reeve’s accomplishments. *Write only the body of the letter.*

**Guidelines:**

- **Be sure to**
  - Tell your audience what they need to know about Christopher Reeve’s accomplishments
  - Use specific, accurate, and relevant information from the account to support your discussion
  - Use a tone and level of language appropriate for a letter to the editor of a local newspaper
  - Organize your ideas in a logical and coherent manner
  - Indicate any words taken directly from the account by using quotation marks or referring to the speaker
  - Follow the conventions of standard written English
### Multiple-Choice Questions

**Directions** (1–6): Use your notes to answer the following questions about the passage read to you. Select the best suggested answer and write its number in the space provided on the answer sheet. The questions may help you think about ideas and information you might use in your writing. You may return to these questions anytime you wish.

<table>
<thead>
<tr>
<th>Question</th>
<th>Correct Answer</th>
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<tbody>
<tr>
<td>1. Reeve’s sense of selflessness is reflected through his</td>
<td>(1) book writing, (3) fundraising efforts</td>
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<tr>
<td></td>
<td>(2) film directing, (4) therapy sessions</td>
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<tr>
<td>2. Since his injury, Reeve has revised his definition of hero from</td>
<td>(1) persists through adversity</td>
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<tr>
<td>someone who performs a courageous act regardless of consequences to</td>
<td>(2) has worldwide respect</td>
</tr>
<tr>
<td>someone who holds a brave act regardless of consequences</td>
<td>(3) puts others first</td>
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<tr>
<td></td>
<td>(4) defends the powerless</td>
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<tr>
<td>3. The hardest psychological adjustment for Reeve was from</td>
<td>(1) actor to lecturer</td>
</tr>
<tr>
<td></td>
<td>(2) protagonist to antagonist</td>
</tr>
<tr>
<td></td>
<td>(3) laborer to employer</td>
</tr>
<tr>
<td></td>
<td>(4) doer to watcher</td>
</tr>
<tr>
<td>4. Reeve uses the steps of the Pyramid at Quetzalcoatl to explain his</td>
<td>(1) seeking adventure</td>
</tr>
<tr>
<td>changed attitude toward</td>
<td>(3) accepting help</td>
</tr>
<tr>
<td></td>
<td>(2) measuring progress</td>
</tr>
<tr>
<td></td>
<td>(4) judging others</td>
</tr>
<tr>
<td>5. Reeve uses the term “falling backward” to refer to his</td>
<td>(1) disabling accident</td>
</tr>
<tr>
<td></td>
<td>(3) lost time</td>
</tr>
<tr>
<td></td>
<td>(2) social engagements</td>
</tr>
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<td></td>
<td>(4) medical setbacks</td>
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<tr>
<td>6. An example of Reeve’s “sensory deprivation” is his inability to</td>
<td>(1) embrace physically</td>
</tr>
<tr>
<td></td>
<td>(2) think logically</td>
</tr>
<tr>
<td></td>
<td>(3) communicate clearly</td>
</tr>
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<td></td>
<td>(4) travel extensively</td>
</tr>
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</table>

After you have finished these questions, turn to page 2. Review **The Situation** and read **Your Task** and the **Guidelines**. Use scrap paper to plan your response. Then write your response in Part A, beginning on page 1 of your essay booklet. After you finish your response for Part A, go to page 5 of your examination booklet and complete Part B.
Part B

Directions: Read the text and study the graph on the following pages, answer the multiple-choice questions, and write a response based on the situation described below. You may use the margins to take notes as you read and scrap paper to plan your response.

The Situation: Your environmental science class has been researching environmental issues. You have chosen to write a presentation for your class discussing the impact of acid rain on North America and suggesting what can be done to reduce the problem.

Your Task: Using relevant information from both documents, write a presentation for your environmental science class in which you discuss the impact of acid rain on North America and suggest what can be done to reduce the problem.

Guidelines:

Be sure to

- Tell your audience what they need to know about acid rain, its impact on North America, and what can be done to reduce the problem
- Use specific, accurate, and relevant information from the text and the graph to support your discussion
- Use a tone and level of language appropriate for a presentation to your environmental science class
- Organize your ideas in a logical and coherent manner
- Indicate any words taken directly from the text by using quotation marks or referring to the author
- Follow the conventions of standard written English
Acid Rain

What is Acid Rain and What Causes It?

“Acid rain” is a broad term used to describe several ways that acids fall out of the atmosphere. A more precise term is acid deposition, which has two parts: wet and dry.

Wet deposition refers to acidic rain, fog, and snow. As this acidic water flows over and through the ground, it affects a variety of plants and animals. The strength of the effects depend on many factors, including how acidic the water is, the chemistry and buffering capacity of the soils involved, and the types of fish, trees, and other living things that rely on the water.

Dry deposition refers to acidic gases and particles. About half of the acidity in the atmosphere falls back to earth through dry deposition. The wind blows these acidic particles and gases onto buildings, cars, homes, and trees. Dry deposited gases and particles can also be washed from trees and other surfaces by rainstorms. When that happens, the runoff water adds those acids to the acid rain, making the combination more acidic than the falling rain alone.

Prevailing winds blow the compounds that cause both wet and dry acid deposition across state and national borders, and sometimes over hundreds of miles.

Scientists discovered, and have confirmed, that sulfur dioxide (SO₂) and nitrogen oxides (NOₓ) are the primary causes of acid rain. In the US, about 2/3 of all SO₂ and 1/4 of all NOₓ comes from electric power generation that relies on burning fossil fuels like coal.

Acid rain occurs when these gases react in the atmosphere with water, oxygen, and other chemicals to form various acidic compounds. Sunlight increases the rate of most of these reactions. The result is a mild solution of sulfuric acid and nitric acid.

How Do We Measure Acid Rain?

Acid rain is measured using a scale called “pH.” The lower a substance’s pH, the more acidic it is.

Pure water has a pH of 7.0. Normal rain is slightly acidic because carbon dioxide dissolves into it, so it has a pH of about 5.5. As of the year 2000, the most acidic rain falling in the US has a pH of about 4.3.

Acid rain’s pH, and the chemicals that cause acid rain, are monitored by two networks, both supported by EPA [Environmental Protection Agency]. The National Atmospheric Deposition Program measures wet deposition, and its Web site features maps of rainfall pH and other important precipitation chemistry measurements.

The Clean Air Status and Trends Network (CASTNET) measures dry deposition. Its Web site features information about the data it collects, the measuring sites, and the kinds of equipment it uses.

What Are Acid Rain’s Effects?

Acid deposition has a variety of effects, including damage to forests and soils, fish and other living things, materials, and human health. Acid rain also reduces how far and how clearly we can see through the air, an effect called visibility reduction.…

Effects of Acid Rain: Lakes and Streams

The ecological effects of acid rain are most clearly seen in the aquatic, or water, environments, such as streams, lakes, and marshes. Acid rain flows to streams,
lakes, and marshes after falling on forests, fields, buildings, and roads. Acid rain also falls directly on aquatic habitats. Most lakes and streams have a pH between 6 and 8, although some lakes are naturally acidic even without the effects of acid rain. Acid rain primarily affects sensitive bodies of water, which are located in watersheds\(^1\) whose soils have a limited ability to neutralize acidic compounds (called “buffering capacity”). Lakes and streams become acidic (pH value goes down) when the water itself and its surrounding soil cannot buffer the acid rain enough to neutralize it. In areas where buffering capacity is low, acid rain also releases aluminum from soils into lakes and streams; aluminum is highly toxic to many species of aquatic organisms.…

**Where Does Acid Rain Affect Lakes and Streams?**

Many lakes and streams examined in a National Surface Water Survey (NSWS) suffer from chronic acidity, a condition in which water has a constant low pH level. The survey investigated the effects of acidic deposition in over 1,000 lakes larger than 10 acres and in thousands of miles of streams believed to be sensitive to acidification. Of the lakes and streams surveyed, acid rain caused acidity in 75 percent of the acidic lakes and about 50 percent of the acidic streams. Several regions in the U.S. were identified as containing many of the surface waters sensitive to acidification. They include the Adirondacks and Catskill Mountains in New York state, the mid-Appalachian highlands along the east coast, the upper Midwest, and mountainous areas of the Western United States. In areas like the Northeastern United States, where soil buffering capacity is poor, some lakes now have a pH value of less than 5. One of the most acidic lakes reported is Little Echo Pond in Franklin, New York. Little Echo Pond has a pH of 4.2.…

Emissions from U.S. sources also contribute to acidic deposition in eastern Canada, where the soil is very similar to the soil of the Adirondack Mountains, and the lakes are consequently extremely vulnerable to chronic acidification problems. The Canadian government has estimated that 14,000 lakes in eastern Canada are acidic.

**How Does Acid Rain Affect Fish and Other Aquatic Organisms?**

Acid rain causes a cascade of effects that harm or kill individual fish, reduce fish population numbers, completely eliminate fish species from a waterbody, and decrease biodiversity. As acid rain flows through soils in a watershed, aluminum is released from soils into the lakes and streams located in that watershed. So, as pH in a lake or stream decreases, aluminum levels increase. Both low pH and increased aluminum levels are directly toxic to fish. In addition, low pH and increased aluminum levels cause chronic stress that may not kill individual fish, but leads to lower body weight and smaller size and makes fish less able to compete for food and habitat.

Some types of plants and animals are able to tolerate acidic waters. Others, however, are acid-sensitive and will be lost as the pH declines. Generally, the young of most species are more sensitive to environmental conditions than adults. At pH 5, most fish eggs cannot hatch. At lower pH levels, some adult fish die. Some acid lakes have no fish.…

**How Does Acid Rain Affect Ecosystems?**

Together, biological organisms and the environment in which they live are called an ecosystem. The plants and animals living within an ecosystem are highly interdependent. For example, frogs may tolerate relatively high levels of acidity, but if they eat insects like the mayfly, they may be affected because part of their food

\(^1\)watersheds — regions draining to particular bodies of water
supply may disappear. Because of the connections between the many fish, plants, and other organisms living in an aquatic ecosystem, changes in pH or aluminum levels affect biodiversity as well. Thus, as lakes and streams become more acidic, the numbers and types of fish and other aquatic plants and animals that live in these waters decrease.

**What Society Can Do About Acid Deposition**

There are several ways to reduce acid rain, more properly called acid deposition, ranging from societal changes to individual action.

**Clean Up Smokestacks and Exhaust Pipes**

Almost all of the electricity that powers modern life comes from burning fossil fuels like coal, natural gas, and oil. Acid deposition is caused by two pollutants that are released into the atmosphere, or emitted, when these fuels are burned: sulfur dioxide (SO$_2$) and nitrogen oxides (NO$_x$).

**Use Alternative Energy Sources**

There are other sources of electricity besides fossil fuels. They include: nuclear power, hydropower, wind energy, geothermal energy, and solar energy. Of these, nuclear and hydropower are used most widely; wind, solar, and geothermal energy have not yet been harnessed on a large scale in this country.

There are also alternative energies available to power automobiles, including natural gas powered vehicles, battery-powered cars, fuel cells, and combinations of alternative and gasoline powered vehicles.

All sources of energy have environmental costs as well as benefits. Some types of energy are more expensive to produce than others, which means that not all Americans can afford all types of energy. Nuclear power, hydropower, and coal are the cheapest forms today, but changes in technologies and environmental regulations may shift that in the future. All of these factors must be weighed when deciding which energy source to use today and which to invest in for tomorrow.

**Take Action as Individuals**

It may seem like there is not much that one individual can do to stop acid deposition. However, like many environmental problems, acid deposition is caused by the cumulative actions of millions of individual people. Therefore, each individual can also reduce their contribution to the problem and become part of the solution. One of the first steps is to understand the problem and its solutions.

Individuals can contribute directly by conserving energy, since energy production causes the largest portion of the acid deposition problem. For example, you can:

- Turn off lights, computers, and other appliances when you’re not using them.
- Use energy efficient appliances: lighting, air conditioners, heaters, refrigerators, washing machines, etc.
- Only use electric appliances when you need them.
- Keep your thermostat at 68 F in the winter and 72 F in the summer. You can turn it even lower in the winter and higher in the summer when you are away from home.
- Insulate your home as best you can.
- Carpool, use public transportation, or better yet, walk or bicycle whenever possible.
- Buy vehicles with low NO$_x$ emissions, and maintain all vehicles well.
- Be well-informed.

— U.S. Environmental Protection Agency
adapted and excerpted from “Clean Air Markets — Environmental Issues”
www.epa.gov
GRAPH

Emission Sources of Sulfur Dioxide (SO₂) and Nitrogen Oxide (NOₓ) from Canada and the United States (1998)

Source: (adapted) “Acid rain and the facts”
www.ec.gc.ca
Multiple-Choice Questions

Directions (7–16): Select the best suggested answer to each question and write its number in the space provided on the answer sheet. The questions may help you think about ideas and information you might want to use in your writing. You may return to these questions anytime you wish.

7 According to the text, one example of dry deposition is
   (1) fog       (3) acidic rain
   (2) snow      (4) acidic particles

8 According to the text, dry deposition poses a problem because it can
   (1) increase the acidity of rain runoff
   (2) slow chemical reactions in the atmosphere
   (3) reduce the nutritional value of foods
   (4) replace essential nutrients in plants

9 The pH of rain is affected by compounds containing both
   (1) helium and hydrogen
   (2) oxygen and sodium
   (3) aluminum and potassium
   (4) sulfur and nitrogen

10 According to the text, acid rain is characterized by a
    (1) high overall density       (3) pleasant smell
    (2) low pH value               (4) reddish color

11 As used in the text, the term “chronic acidity” (line 56), most nearly means that the level of acidity
    (1) fluctuates                  (3) decreases steadily
    (2) remains unchanged           (4) disappears

12 The last section of the text is designed primarily to present
    (1) personal reactions
    (2) scientific data
    (3) historical perspectives
    (4) practical suggestions

13 According to the graph, the largest source of nitrogen oxide (NO_x) emissions in both Canada and the United States is
    (1) transportation       (3) fuel combustion
    (2) electric utilities   (4) industrial sources

14 According to the graph, what sources of nitrogen oxide (NO_x) in the United States produce identical emission percentages?
    (1) fuel combustion and “other”
    (2) transportation and industrial
    (3) electric utilities and transportation
    (4) fuel combustion and transportation

15 According to the graph, the largest producer of sulfur dioxide emissions in the United States is
    (1) transportation       (3) fuel combustion
    (2) industrial sources   (4) electric utilities

16 According to the graph, the United States and Canada have their lowest amount of sulfur dioxide (SO_2) in emissions caused by
    (1) transportation       (3) fuel combustion
    (2) electric utilities   (4) industrial sources

After you have finished these questions, turn to page 5. Review The Situation and read Your Task and the Guidelines. Use scrap paper to plan your response. Then write your response to Part B, beginning on page 7 of your essay booklet.
# COMPREHENSIVE EXAMINATION IN ENGLISH
## SESSION ONE

**Thursday, June 15, 2006 — 9:15 a.m. to 12:15 p.m., only**

**ANSWER SHEET**

<table>
<thead>
<tr>
<th>Part A</th>
<th>Part B</th>
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<tr>
<td>1</td>
<td>7</td>
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<tr>
<td>2</td>
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|        | 14     |
|        | 15     |
|        | 16     |

HAND IN THIS ANSWER SHEET WITH YOUR ESSAY BOOKLET, SCRAP PAPER, AND EXAMINATION BOOKLET.

Your essay responses for Part A and Part B should be written in the essay booklet.

I do hereby affirm, at the close of this examination, that I had no unlawful knowledge of the questions or answers prior to the examination and that I have neither given nor received assistance in answering any of the questions during the examination.

Signature

Comp. Eng. — Session One — June '06