

Question 2
Benchmark A
9th Practice Test

Architects are working with engineers to build a lecture hall. How can they design it so that echoes are reduced and speech is **not** heard as garbled sounds?

- A. build smooth marble walls, ceilings and polished floors
- B. construct many flat walls, angled ceilings and smooth floors
- C. use an ultramodern design of metal walls, pillars and seats
- D. build walls out of porous materials, upholster the seats and add carpets

Question 40
Benchmark A
Spring 2006

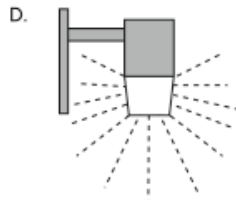
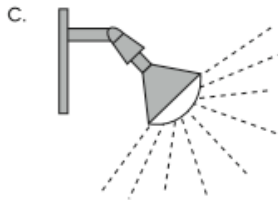
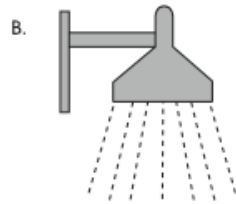
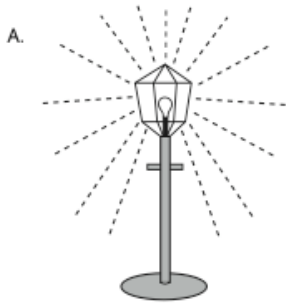
40. Engineers are designing an auditorium that will be used for performances by orchestras.

What must they do to maximize the loudness of the sound heard by the audience?

- A. hang curtains behind the orchestra
- B. put carpet all around the walls of the auditorium
- C. hang reflecting panels from the ceiling behind the orchestra
- D. install narrow glass windows and skylights around the top of the walls

Question 41
Benchmark A
Spring 2005

41. Artificial light at night can negatively impact wildlife. Which outdoor light design minimizes the effect of the light on wildlife?



Question 19
Benchmark B
Spring 2009

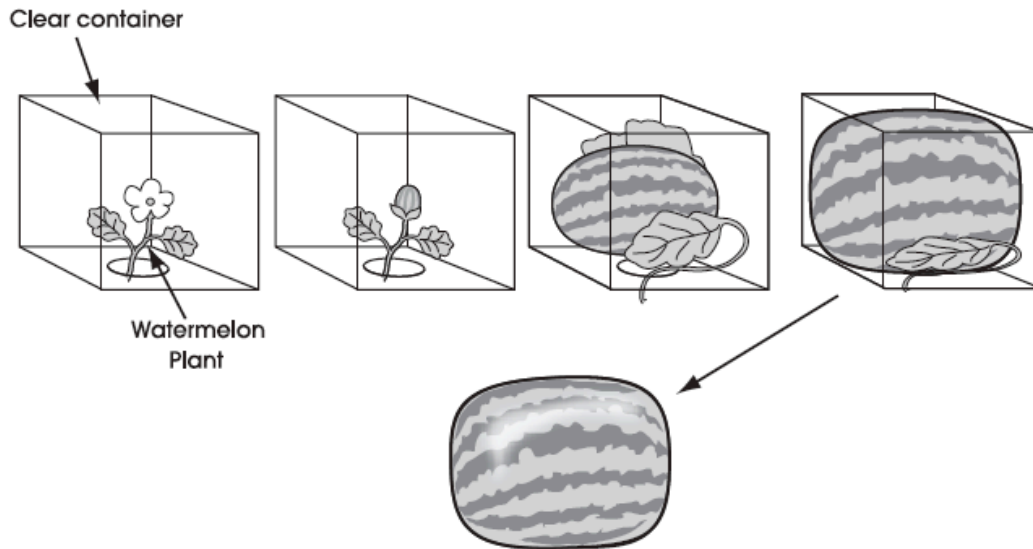
19. Some coal-burning power plants install "chemical scrubbers". These scrubbers reduce the amount of sulfur dioxide (SO₂) that is released when coal is burned.

How does installation of these scrubbers benefit the environment?

- A. reduce the amount of acid rain
- B. reduce the amount of coal mined
- C. increase the amount of atmospheric CO₂
- D. increase the amount of ground level ozone

Question 40
Benchmark B
Spring 2009

40. In a recent agricultural experiment, farmers in Japan inserted fertilized watermelon blooms into square containers, which resulted in the fruit taking the shape of its container as it grew.



Describe two benefits of farming practices that produce square watermelons.
Respond in the space provided in your **Answer Document**. (2 points)

Question 8
Benchmark B
March 2008

The pesticide DDT was at one time referred to as a "miracle" pesticide. Its widespread use in the United States peaked in 1959, but then usage steadily declined until its ban in late 1972. Reasons for declining usage included increased insect resistance and public concern over potentially harmful environmental effects.

How did this concern affect the field of agricultural science?

- A. It led to the development of equally harmful herbicides.
- B. It encouraged farmers to violate the ban and increase the use of DDT.
- C. It led to the development of more effective, alternative pesticides.
- D. It encouraged farmers to reduce the number of crops grown in their fields.

Question 40
Benchmark B
March 2008

Significant progress has been made in the development of oxygen-carrying solutions that may replace whole blood. Describe two reasons why researchers are so interested in developing artificial blood to replace the use of whole blood.

Respond in the space provided in your **Answer Document** (2 points).

Question 24
Benchmark B
9th Practice Test

24. Biotechnology is the science of manipulating biological components to develop products that may be beneficial to humans. Identify two different industries in which biotechnology has made major contributions. Describe one contribution for each industry. Respond in the space provided in your **Answer Document**. (4 points)

Question 24
Benchmark B
Spring 2005

24. In 1960, physicist Theodore Maiman constructed the first working laser. This design was improved upon by Bell Telephone Laboratories in 1961. Since then, lasers have been found to have a wide variety of applications. Identify one application of laser technology and explain how this application has impacted society. Respond in the space provided in your **Answer Document**. (2 points)

Question 25
Benchmark B
Spring 2006

25. Telemedicine is defined as the practice of medicine from a distance. It allows doctors to communicate with patients and other health care workers from a remote area. Early ways of transmitting medical information included the postal service and telegraph. Identify two advances in technology that have improved the speed and accuracy of modern telemedicine. Explain how each improves the ability of doctors to treat or diagnose patients.

Respond in the space provided in your **Answer Document**. (4 points)

Question 40
Benchmark B
Spring 2005

40. Hydroelectric power is considered a "clean" energy source because it
- A. is available in most areas.
 - B. increases the amount of power available.
 - C. does not produce the pollutants that burning fossil fuels do.
 - D. requires minimal investment in equipment.