tions 1-3 are based on the following passage.

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The following section is about the invention of the compact disc, and explains how it works.

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Compact discs (CDs), which may be found in over 25 million Amer- ican homes, not to mention backpacks and automobiles, first entered popular culture in the 1980s. But their history goes back to the 1960s, when an inventor named James Russell decided to create an alterna- tive to his scratched and warped phonograph records—a system that could record, store, and replay music without ever wearing out.

The result was the compact disc (CD). Made from 1.2 mm of polycarbonate plastic, the disc is coated with a much thinner aluminum layer that is then protected with a film of lacquer. The lacquer layer

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(10) can be printed with a label. CDs are typically 120 mm in diameter, and can store about 74 minutes of music. There are also discs that can store 80, 90, 99, and 100 minutes of music, but they are not as compatible with various stereos and computers as the 74–minute size.

The information on a standard CD is contained on the polycar-

(15) bonate layer, as a single spiral track of pits, starting at the inside of the disk and circling its way to the outside. This information is read by shining light from a 780 nm wavelength semiconductor laser through the bottom of the polycarbonate layer. The light from the laser follows

the spiral track of pits, and is then reflected off either the pit or the alu-
(20) minum layer. Because the CD is read through the bottom of the disc, each pit looks like a bump to the laser.

Information is read as the laser moves over the bumps (where no light will be reflected) and the areas that have no bumps, also known as land (where the laser light will be reflected off the aluminum). The
(25) changes in reflectivity are interpreted by a part of the compact disc player known as the detector. It is the job of the detector to convert the information collected by the laser into the music that was originally recorded onto the disc. This invention brought 22 patents to James Russell, who today says he working on an even better system for
(30) recording and playing back music.

1. According to the passage, why did James Russell invent the CD?
   a. He was tired of turning over his records to hear both sides.
   b. He wanted to record more music on a new format.
   c. He wanted a purer, more durable sound than he could get from vinyl records.
   d. He was interested in getting patents.
   e. He wanted to work with lasers.

2. What would happen if the detector on a CD player malfunctioned?
   a. The spiral track would not be read properly.
   b. The pits and land would look like one unit.
   c. The changes in reflectivity would be absorbed back into the laser.
   d. The music would play backwards.
   e. The information read by the laser would not be converted into music.

3. Paragraph 3, lines 14–21, explains all of the following EXCEPT
   a. how the information on a CD is read.
   b. why semiconductor lasers were invented.
   c. where information is stored on a CD.
   d. what pits and bumps are.
   e. the purpose of the aluminum layer of a CD.

Questions 4–6 are based on the following passage.

The selection that follows is about the current state of the modeling industry.

The beginning of the twenty-first century has been called the end of the supermodel era by fashion magazines, trend watchers, and news organizations around the world. The models are being replaced, so the theory goes, with actors. Check the covers of fashion magazines, and you will find that many on any given month feature an actor, rather than a model. But, as with most trends, this is nothing new.

From its beginnings in the 1920s, the modeling industry has provided beautiful people to help sell everything from magazines to computers to vacation destinations. John Robert Powers, who opened the first modeling agency in 1923, was a former actor who hired his actor friends to model for magazine advertisements. Cary Grant, Lucille Ball, and Princess Grace of Monaco were clients. However, for many models simply being "great-looking" was where their resumés began and ended. The height of popularity for them was in the 1980s and 1990s, the era of the supermodel. A handful of "perfect" women commanded salaries of up to $25,000 a day to walk catwalks at fashion shows, appear in print ads, and pose their way through commercials. They were celebrities, treated with all of the lavish attention usually paid to heads of state or rock stars.

But that was in the supermodel heyday. As designers and magazine editors began to favor more exotic and more "real" looking models, the modeling handful grew into an army. The demand for the perfect-looking select few dropped, and women who had quirky smiles, a few extra pounds, spiky hair, or were past their twenties, gained favor. This group was joined by those who achieved success in some other venue, such as music (think Renee Fleming raving about a watch), sports (Tiger Woods happily devouring his Wheaties®), and acting (Danny Glover waxing rhapsodic over MCI). Iconic fashion designer Calvin Klein summed it up: "I don't think that people are that interested in models anymore. It's not a great moment for the modeling industry. It says a lot about our society and I think it's good."

4. According to the passage, the author believes that

a. today's fashion models are not as perfect looking as were the supermodels.

b. people still respond to perfection in advertising.

c. today's fashion models are thinner than those in the past.

d. to be a model, one must be taller than average.

e. in the 1980s, models were paid more than they are today.

5. The phrase in lines 13 and 14, "*great-looking" was where their resumes began and ended*, is
   a. a description of the models' work experience.
   b. meant to be taken literally.
   c. meant to be taken figuratively.
   d. a truthful statement.
   e. an example of pathos.

6. *Waxing rhapsodic* (line 28) most nearly means
   a. orchestrating a positive statement.
   b. becoming musical.
   c. burning a candle for.
   d. making overtures.
   e. becoming enthusiastic.

Questions 7–9 are based on the following passage.

This selection introduces the Computer Museum of America, and details an important item in its collection.

(1) Wondering what to do with that old Atari Home Video Game in the attic? It's on the wish list of the Computer Museum of America, in San Diego, California, which hopes you will donate it to their holdings. The Museum was founded in 1983 to amass and preserve historic computer equipment such as calculators, card punches, and typewriters, and now owns one of the world's largest collections. In addition, it has archives of computer-related magazines, manuals, and books that are available to students, authors, researchers, and others for historical research.

(10) One item currently on display is a 1920s comptometer, advertised as "The Machine Gun of the Office." The comptometer was first sneered at by accountants and bookkeepers, many of whom could add four columns of numbers in their heads. The new machine was the first that could do the work faster than humans. The comptometer gained a large following, and its operation became a formal profession that required serious training. But by the 1970s, computers took over, and comptometers, and the job of operating them, became obsolete.

7. All of the following are probably part of the collection of the Computer Museum of America EXCEPT
   a. adding machines.
   b. old computers.
   c. operation manuals for calculators.
   d. card punch machines.
   e. kitchen scales.

8. In line 12, the author used the words *sneered at* to show
   a. a negative image of accountants.
   b. what accountants and bookkeepers looked like.
   c. the negative reaction to the comptometer.
   d. the precursor of the comptometer operator.
   e. how fast accountants and bookkeepers could add.

9. What term paper topic could probably be researched at the Computer Museum of America?
   a. Alexander Graham Bell's contributions to American society
   b. IBM's contribution to the development of the modern computer
   c. more than just paintings: the museums of California
   d. the rise and fall of the comptometer operator
   e. why video games are harmful to our nation's youth