Because of its accuracy in outlining the Earth's subsurface, the seismic-reflection method remains the most important tool in the search for petroleum reserves. In field practice, a subsurface is mapped by arranging a series of wave-train sources, such as small dynamite explosions, in a grid pattern. As each source is activated, it generates a wave train that moves downward at a speed determined uniquely by the rock's elastic characteristics. As rock interfaces are crossed, the elastic characteristics encountered generally change abruptly, which causes part of the energy to be reflected back to the surface, where it is recorded by seismic instruments. The seismic records must be processed to correct for positional differences between the source and the receiver, for unrelated wave trains, and for multiple reflections from the rock interfaces. Then the data acquired at each of the specific source locations are combined to generate a physical profile of the subsurface, which can eventually be used to select targets for drilling.

1. Which of the following best describes the organization of the passage?

(A) A method is criticized, and an alternative is suggested.

(B) An illustration is examined, and some errors are exposed.

(C) An assertion is made, and a procedure is outlined.

(D) A series of examples is presented, and a conclusion is drawn.

(E) A hypothesis is advanced, and supporting evidence is supplied.

Towards the end of the 19th century many scientists thought that all the great scientific discoveries had already been made and that there was not much left to do beyond some "tidying up." Max Planck, born in 1858, turned this notion upside down with his study of black-body radiation. Even in a vacuum a hot body will tend come to thermal equilibrium with a colder body by radiative heat transfer. This is the principle by which we derive energy from the sun. However, the theory for black-body radiation in Planck's day predicted an unphysical result at high frequencies. After many years of work devoted to this problem, Planck succeeded in quantitatively explaining the experimental data; his key insight was that energy comes in small discrete packets, called quanta. His theory was the birth of what called quantum mechanics, the revolutionary theory of matter that is fundamental to the modern understanding of physics, chemistry and molecular biology.

1. Which of the following would best paraphrase the opening sentence?

(A) By the late 1800s, much of the scientific community felt it had completed the majority of its work and minor revisions were its only remaining task.

(B) By 1900, few scientists were still making significant discoveries, and most projects were revising current theories.

(C) At the end of the 19th century, there was a concern among scientists t they had run out of discoveries to make and could only perfect already proven theories.

(D) By 1900, the scientific community declared that it had come to understand the natural laws of the universe.

(E) At the end of the 19th century, scientists ceased trying to formulate new theories.

2. Which of the following best describes the relationship between the highlighted phrases?

(A) Topic and scope

(B) Theory and debunking

(C) Problem and solution

(D) Hypothesis and analysis

(E) Thesis and synthesis