

2008 AP® ENGLISH LANGUAGE AND COMPOSITION FREE-RESPONSE QUESTIONS

Question 2

(Suggested time—40 minutes. This question counts for one-third of the total essay section score.)

In the following passage from *The Great Influenza*, an account of the 1918 flu epidemic, author John M. Barry writes about scientists and their research. Read the passage carefully. Then, in a well-written essay, analyze how Barry uses rhetorical strategies to characterize scientific research.

Line
5 Certainty creates strength. Certainty gives one something upon which to lean. Uncertainty creates weakness. Uncertainty makes one tentative if not fearful, and tentative steps, even when in the right direction, may not overcome significant obstacles.
10 To be a scientist requires not only intelligence and curiosity, but passion, patience, creativity, self-sufficiency, and courage. It is not the courage to venture into the unknown. It is the courage to accept—indeed, embrace—uncertainty. For as Claude Bernard, the great French physiologist of the nineteenth century, said, “Science teaches us to doubt.”
15 A scientist must accept the fact that all his or her work, even beliefs, may break apart upon the sharp edge of a single laboratory finding. And just as Einstein refused to accept his own theory until his predictions were tested, one must seek out such findings. Ultimately a scientist has nothing to believe
20 in but the process of inquiry. To move forcefully and aggressively even while uncertain requires a confidence and strength deeper than physical courage.
25 All real scientists exist on the frontier. Even the least ambitious among them deal with the unknown, if only one step beyond the known. The best among them move deep into a wilderness region where they know almost nothing, where the very tools and techniques needed to clear the wilderness, to bring order to it, do not exist. There they probe in a
30 disciplined way. There a single step can take them through the looking glass into a world that seems entirely different, and if they are at least partly correct their probing acts like a crystal to precipitate an order out of chaos, to create form, structure, and direction.
35 A single step can also take one off a cliff.

40 In the wilderness the scientist must create . . . *everything*. It is grunt work, tedious work that begins with figuring out what tools one needs and then making them. A shovel can dig up dirt but cannot penetrate rock. Would a pick be best, or would dynamite be better—or would dynamite be too indiscriminately destructive? If the rock is impenetrable, if dynamite would destroy what one is looking for, is there another way of getting information about what the rock holds? There is a stream passing over the rock. Would analyzing the water after it passes over the rock reveal anything useful? How would one analyze it?

45 Ultimately, if the researcher succeeds, a flood of colleagues will pave roads over the path laid, and those roads will be orderly and straight, taking an investigator in minutes to a place the pioneer spent months or years looking for. And the perfect tool will be available for purchase, just as laboratory
50 mice can now be ordered from supply houses.

55 Not all scientific investigators can deal comfortably with uncertainty, and those who can may not be creative enough to understand and design the experiments that will illuminate a subject—to know
60 both where and how to look. Others may lack the confidence to persist. Experiments do not simply work. Regardless of design and preparation, experiments—especially at the beginning, when one proceeds by intelligent guesswork—rarely yield the
65 results desired. An investigator must make them work. The less known, the more one has to manipulate and even force experiments to yield an answer.]