

English Language Exam

Part One: Reading

(Score: 12/20)

“A Brain for All Seasons: Humans Evolution and Abrupt Climate Change” is a book written by William H. Calvin. (University of Chicago Press, 2002

Read the following book review about it by Jeffrey H. Schwartz and work out the activities that follow:

Climatic and Evolutionary Whiplash

How sudden shifts in climate may have boosted human ingenuity

- 1) Imagine going to the first meeting of a course you'd long waited to enroll in. you sit down at your computer, open an e-mail message from your professor, the author William H. Calvin, and get your first lesson. Your professor is thousands of miles away. In fact, he's at 51.4° N, 0.1° E. where? Why, Charles Darwin's home in Kent, England, of course, the famous Down House.
- 2) So begins Calvin's journey through evolution, particularly human evolution, as he leads his "class" from the home of the man many would call the father of evolution to various locales that provide fodder for his ultimate message: human evolution, like that of other organisms, is not gradual transformation of form and behavior over time. Rather, like the shifts in the environments in which organisms find themselves, evolutionary change is abrupt, even catastrophic. A neurobiologist by training (he is at the University of Washington School of Medicine), Calvin leads us along a trail that links sudden worldwide codlings to the origin of our large brains and modern human behavior. By modern behavior, he is thinking not just of sophisticated tool making; he includes such social behavior as pair bonding and, ultimately, language, a sense of the aesthetic, and "abstract thinking, planning depth, innovation, and symbolic behavior".
- 3) The sudden codlings, Calvin tells us, reduced rainfall, induced dust storms and fires, and produced bottlenecks in the populations of our forebears. The few survivors has to adapt within generation to, for example, a climate in which only grass grew well, spurring them to develop innovative techniques for hunting the large grazing animals that converted the grass into edible energy. Thus, he concludes, the cycles of "cool, crash, and burn" drove increased brain size and complexity of the brain, but these sudden jolts could certainly have spurred early humans to exploit the existing potential of the brain.
- 4) To make his points, Calvin takes us, on a peripatetic journey as he visits museums, attends conferences, pays homage to a variety of African human fossil sites, and flies over huge African expanses and the vast Nordic areas.
- 5) Calvin's premise—that human evolution is correlated with climatic swings—is, of course, not new. Indeed, the traditional Darwinian view holds that evolution proceeds through organisms tracking their environments. And well over a decade ago paleontologist Elisabeth Vrba proposed that changes in species representation over time, as evidenced especially in the South African fossil record antelope and early hominids (such as Australopithecus and Paranthropus), were rapid and correlated with shifts between wetter and drier conditions.
- 6) But Calvin's presentations differs from others in that it really is an attempt to think globally about past and present climatic change and its possible effects on creatures and their evolution. As one of the authors whose work on human evolution he cites as recommended reading, I found his discussion of the fossils less engaging than the climate-related information. The book definitely picks up steam when he moves away from trying to discuss human fossils and digs into issues of global warming, shrinking polar ice caps, and oceanic water behavior by describing what happens when you pour very cold heavy cream over a spoon into

a cup of hot coffee (it sinks as a column) and explaining North Atlantic Ocean current movements by way of a story about incorrectly hooking up a hot water tank with a toilet that then acted as a radiator.

- 7) Heading back home to Seattle on the long, great-circle-route flight from Nairobi, over Gulf Stream and Greenland, Calvin muses on the present global warming brought about human activities. It could, he says, paradoxically trigger another episode of sudden cooling. The accumulation of greenhouse gases in the atmosphere could induce an abrupt shutting down of the oceanic “conveyor belt” that sends warmer waters into the North Atlantic, plunging much of the power. We’re now smart, he concludes, “in ways that owe little to our present brain power, but rather to the accumulated experience of the people that have lived since the last ice age ended Education, Writing, Technology, and Science.” And he suggests that if we’re really smart, our accumulated experience may just help us find a way to avoid this looming threat.

Jeffrey H. Schwartz teaches physical anthropology at the University of Pittsburg and is author of Sudden Origins: Fossils, Genes and Origins of Species (Wiley, 1999).

Answer the following questions using your own words:

1. a) The text presents three scientists points of view regarding the theory of evolution. On the chart below name each scientist and state his idea. Copy the chart on your booklet. (1.5pt)
b)

Scientist	Point of view

2. What is the hypothesis Calvin starts his argument with? (1pt)
3. The writer of this review opposes Calvin’s point of view regarding the physical change of the brain. Find the sentence that states his point of view. (1pt)
4. The following sentences have been misinterpreted. Refer to the text to correct the false information. (2pts):
- a. According to Calvin, the sudden cooling caused an increase in the number of people living on earth.
 - b. The writer of the review agrees with Calvin that climatic changes have affected the physical size as well as the function of the brain.
 - c. Calvin gives his readers a quick overview of his findings.
 - d. If you pour cold cream over a spoon into a cup of hot coffee, it splashes and cools the coffee.
5. Paraphrase the underlined part in paragraph 7. (1pt)
6. In paragraphs 1,2 and 3 find and copy: (1pt)
- a. an example
 - b. a fragment
 - c. a transitional expression
 - d. a compound sentence
7. Figure out the meaning of the following words/ expressions as they are used in the text: (2pts)
- a. Fodder (p2)
 - b. Abrupt (p2)
 - c. Muses (p7)
 - d. Picks up steam (p6)
8. Why do you think the part of the book that discusses global warming is deeper and more perceptive than the other parts? Answer in not more than 2 sentences. (1.5pts)

Part Two: Writing

score: 8/20

Calvin suggests that “if we’re really smart, our accumulated experience may just help us find a way to avoid this looming threat.”

Do you agree with him that human activities are actually threatening the planet Earth? How could people use their brain powers to avoid such a threat?

Discuss your opinion in an essay of 250-300 words supporting it with appropriate examples and facts.

You will be graded for:

Focus and thesis statement (1pt)

Content (2pts)

Organization (1pt)

Structure (2pts)

Tone and style (1pt)

Mechanics (1pt)

Answer Key

1) a.

Scientist	Point of view
William H. Calvin	Human evolution like that of other organisms isn't a gradual transformation of form and behavior overtime (p2)
Charles Darwin	Evolution proceeds through organisms tracking their environment (p5)
Elisabeth Vrba	Changes in species representation overtime were rapid and correlated with shifts between wetter and drier conditions (p5)

b. Calvin's idea differs from the other in that it really is on an attempt to think globally about past and present climatic changes and its possible effects on creatures and their evolution.

2). He wants to tell us that evolution doesn't come gradually; it is an abrupt.

3) The writer's sentence that opposes Calvin's point of view regarding the physical change of the brain is, "I think it's unlikely that the climatic shifts were behind changes in the physical size and complexity of the brain, but these sudden jolts could certainly have spurred early humans to exploit the existing potential of the brain".

4) a. According to Calvin, the sudden cooling caused an increase in brain size and complexity.

b. The writer of the review believes that sudden jolts increased physical size as well as the function of the brain.

c. Calvin takes his readers on a peripatetic journey.

d. If you pour cold cream over a spoon into a cup of hot coffee, it sinks as a column.

5) Jeffrey H. Schwartz in his article "Climatic and Evolutionary Whiplash" deduces in paragraph 7 that ancient people, who survived since the last ice age was over, have been more intelligent than humans today because of their wide experience. Today, humans have "Education, Writing, Technology, Science" if they use them properly, they would have a better experience than those who lived previously.

6) a. Example/ p3: "For example...energy"

b. fragment/ p1: "Why,...House"

c. transitional expression/ p3: "thus.."

d. compound sentence/ p3: "I think..., but..."

7) a. material

b. sudden

c. considers carefully

d. accelerates

8) I think the part of the book that discusses global warming is deeper and more perceptive than the other parts because it focuses on environmental issues in a precise manner like melting of polar ice caps and oceanic currents. These would raise the question "What would happen later?" which calls upon readers to set a policy to avoid global warming threats.