

AP[®] Biology 2004 Sample Student Responses Form B

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BIOLOGY

SECTION II

Time—1 hour and 30 minutes

Directions: Answer all questions.

Answers must be in essay form. Outline form is not acceptable. Labeled diagrams may be used to supplement discussion, but in no case will a diagram alone suffice. It is important that you read each question completely before you begin to write. Write all your answers on the pages following the questions in this booklet.

1. Prokaryotes are found throughout the biosphere. Answer two of the following.

- a) Provide three examples of adaptations found in various prokaryotes. Explain how these three adaptations have ensured the success of prokaryotes.
- b) Discuss how prokaryotes early in Earth's history altered environments on Earth.
- c) Discuss three ways in which prokaryotes continue to have ecological impact today.

a) Archaeq are found in environments with extendly
high temperatures. This adaptation a helps them by
far blunge in such environment there are no or not
many competitors. Sciencel reproduction in prokanyoles by
conjugation of the the pilli have is a very good
adaptation because this increases being variation. The
repid reproduction of bacteria by binary fission
increases differential reproductive success with the
combination of figt reproduction and the transfer
exchange in DNA, resistance to antibiotics (an spread
very fast in a population.

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ADDITIONAL PAGE FOR ANSWERING QUESTION 1

Endesymbiosis <u>)</u> pre 15 whet eer. enk of today what they are Chloroplasts BMitschordin <u>E</u> used individual celles to be Chloroplasts own DNA. organelles having their did photosynthesis for cellular respir the 0, in which , needed is neede ritachanaria moved into the chloroplast of the organism Cellular respiration like motes tren E be gaevolved and onto Barty was originally a reducing atmasphere photo synthetic prokanotes 1000 <u>-aking</u> The 0 atmosphere <u>akidizi</u> the Obligate formed. layer macrobes ecics causing existin denatured organisms extintion. <u>Prokaryotes</u> Samples excellent in Prok CEAL done are Subjec Some disas prol Prok spille. motes حرايه Speciatepoison (L. Sach From prokenyotes A.r.A also <u>sf</u> because tways like resist +> anti biotig



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BIOLOGY

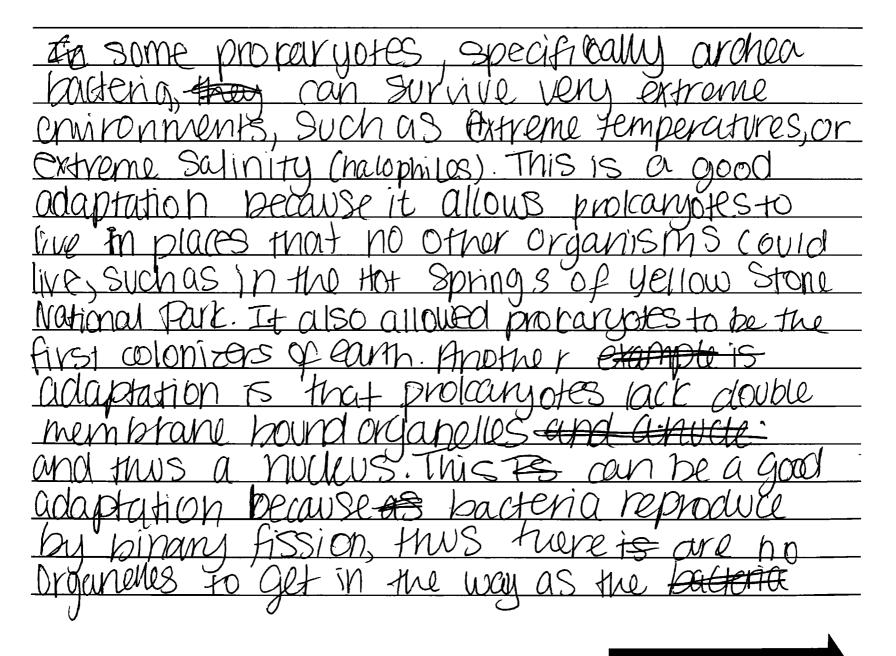
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Early probamptes in Earth's history altered the environments on Earth. The early atmosphere of earth contained little oxygen. Thus, when autotrophic probaryotes (such as a puppoduct of photosynthesis the amount of oxygen in the atmosphere gracity increased without photangotes in Earth's early history that were able to adapt to the newsn environments, such as archeabacenia, the further life on earth may not



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proparyous entre their on success.

