

ENVS 314 BIOGEOGRAPHY

This paper consists of **THREE** pages

Time: 3 Hours
Marks: 300

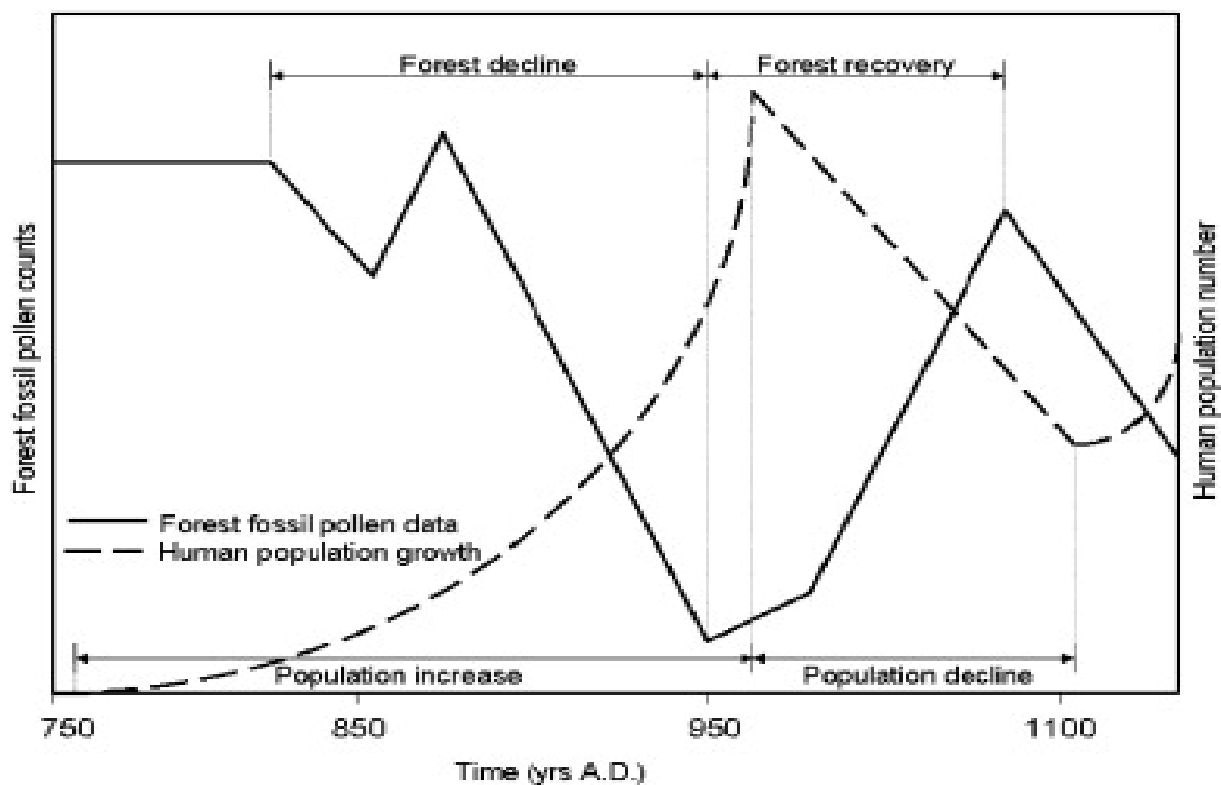
Internal Examiner: Prof T.R. Hill
External Examiner: Prof S Grab

Answer ALL questions in Section A and TWO essay-type questions from Section B

Section A

Answer ALL questions (100 marks)

Question 1:



Describe the process taking place in above diagram. (25 marks)

Question 2:

With the aid of examples, outline the paradox of geographic range collapse. (25 marks)

Question 3:

Pretend you live near a newly created, volcanic island, so it is easy to pop over and check how many species are living there at any given time. New species start showing up, and the number of species goes up and up. Eventually, what will happen and outline this process? (25 marks)

Question 4:

Define the following terms, providing examples where appropriate:

- a. Adaptive radiation (10 marks)
- b. Convergent and parallel evolution (5 marks)
- c. Environmental determinism (5 marks), and
- d. How does facilitation differ from competition? (5 marks)

Section B

Answer Question 5 and Question 6 (Either a or b). Each question carries 100 marks.

Question 5:

With the aid of examples, outline and critically assess the vertical zonation concept and use of contemporary reference collections within palaeo-ecological studies.

Question 6:

- a. “...southern Africa faces significant environmental and economic challenges as a consequence of global climatic change”, (Meadows, 2006). Outline and discuss the impact of climate change on the southern African environment. You may focus on any particular region, country, biome, landscape or resources. Use case studies to justify your response.

OR

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- b. *“Conservation biologists are acutely aware of the challenges that will be posed by shifting species’ distributions in the face of climatic change. Compared to the risks posed to biodiversity by habitat loss and degradation, the climate-change challenge is a relatively new one” (Hockey et al., 2011).*

Discuss the implications of projected climatic changes for conservation and reserve design. In your discussion, provide examples of species and habitat types which may be particularly vulnerable to climate change.

