UNIVERSITY COLLEGE LONDON

EXAMINATION FOR INTERNAL STUDENTS

MODULE CODE	:	**GEOLGG18**
ASSESSMENT PATTERN	:	**GEOLGG18B**
MODULE NAME	:	**Palaeoclimatology**
DATE	:	**16 May 2016**
TIME	:	**10:00 am**
TIME ALLOWED	:	**2 hours 30 mins**

This paper is suitable for candidates who attended classes for this module in the following academic year(s):

2015/16

TURN OVER

GEOLM012_GG18 PALAECLIMATOLOGY

Answer question 1 and two from questions 2 to 4. Question 1 accounts for 50% of the total marks; each of questions 2 to 4 account for 25% of the total marks, except where stated, all parts of a question carry equal marks. You may use a standard electronic calculator.

Question 1

a) Discuss the advantages and disadvantages of leaf-shape and size analysis for palaeoclimate reconstructions. [12.5%]

b) Compare and contrast the characteristics of proxy palaeoclimate data from deep-sea sediments and lake records. [12.5%]

c) Explain the palaeoclimatic data derived from the Vostock ice core summarised by Figure 1 (from Jouzel et al., *Nature*, 1993, 364, p 407 - 412). [12.5%]

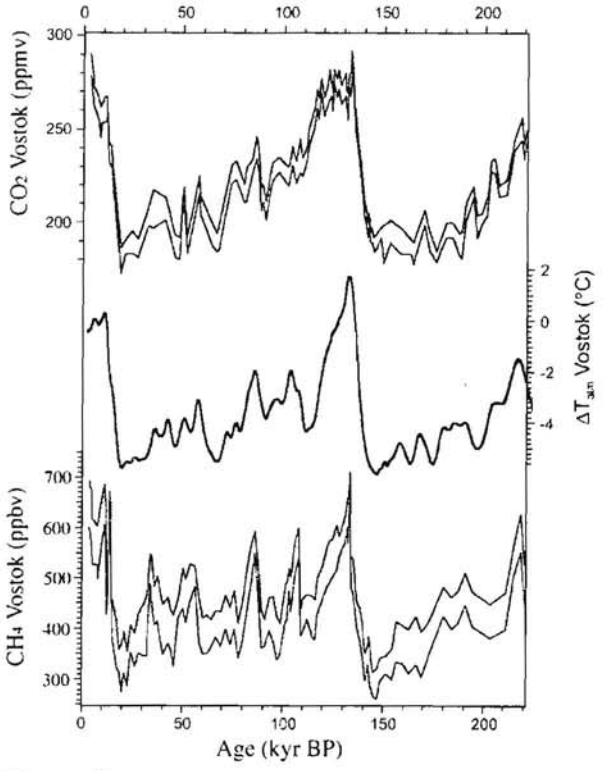

Figure 1

d) Define dendrochronology and dendroclimatology and outline how palaeoclimatic data are extracted from dendroclimatological studies. [12.5%]

TURN OVER

Question 2

Discuss the advantages and shortcomings of numerical climate models.

Question 3

How, and what, does biogenic carbonate tell us about past climates.

Question 4

By means of the two isotopic curves from marine sediments and additional data given in Figure 2 (after Zachos et al. 2001, Science, 292) interpret Earth's climate history since 70 Ma.

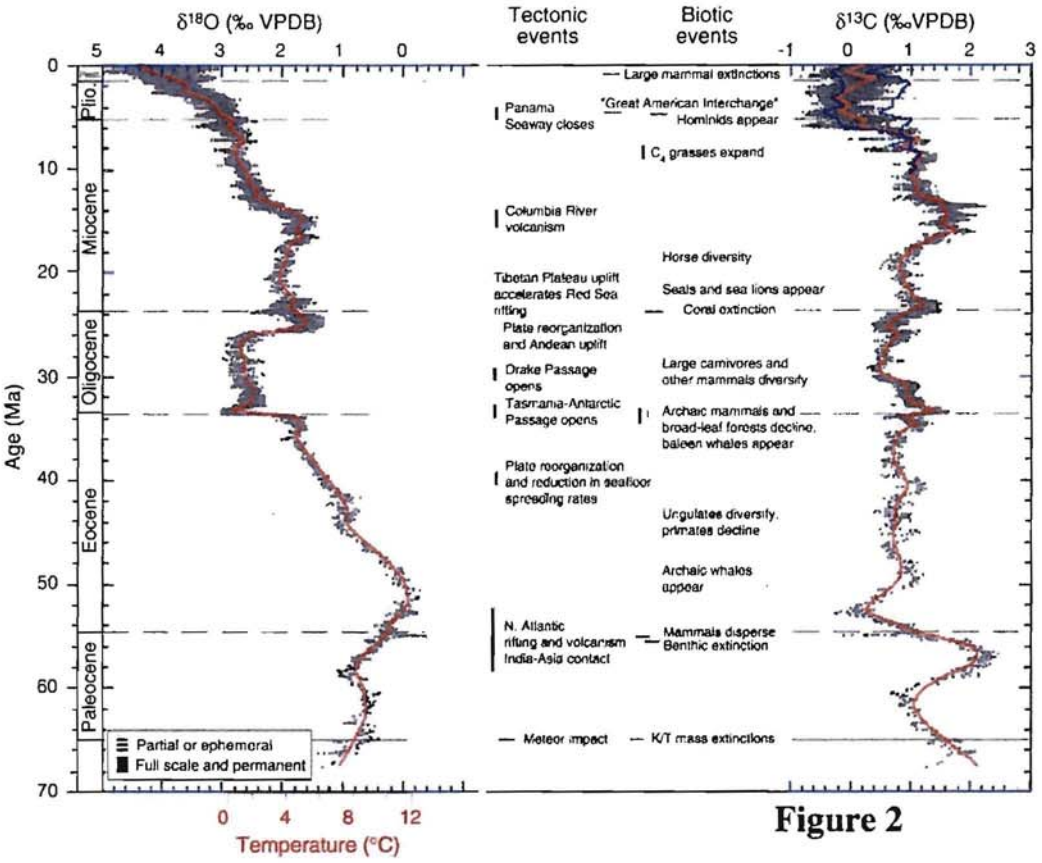

Figure 2

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