

Exam Marine Sciences, part II (2007-b)

Thursday, February 1, 2007, 13.15-16.00hrs
Kruyt W105

NB1: schrijf Uw naam en studentnummer op ieder in te leveren blad; *write your name on every sheet you return*

NB2: aub de vragen individueel op de aangewezen bladen beantwoorden; *please answer the Qs individually on the forms associated with the questions as assigned below.*

Veel succes/Good luck!

Naam:

Studentnummer:

Questions chemical (palaeo-)oceanography – Sinninghe-Damsté

1 (a). Mention three types of information that characterize a molecular fossil and briefly explain how this can be used to assign its biological source. **(b).** Explain what an organic proxy is.

2). Take an organic proxy of your choice and explain in detail how it works. Use in your description three headings: 1) proxy definition, 2) biological background and 3) application. Use drawings or graphs to illustrate your explanation.

Antwoord(en)/Answer(s):

Naam:

Studentnummer:

Questions palaeoceanography A – Sangiorgi/Rohling/Marino

- 1) (a) Give the standard equation for the delta notation of OXYGEN isotope ratios. (b) List and discuss the physical processes determining the present oxygen isotopic ratio in sea water in the Mediterranean Basin and in planktonic foraminiferal carbonate formed within that sea water, respectively.
- 2) Which dinoflagellate cysts species/group would you select to identify a sapropel layer? Why? Would you choose to use percentages or concentrations (number of cysts/gram dry sediment)? Why?
- 3) Briefly describe the established relationship between eastern Mediterranean sapropel development and orbital forcing of climate. Explain what processes alter the eastern Mediterranean thermohaline circulation leading to sapropel deposition. List and discuss these processes in temporal order and mention the biological (planktic and/or benthic realm) and geochemical (inorganic and/or organic) proxies that, according to you are best suited to assess hydrographic, ecological and biological changes during sapropel times.

Antwoord(en)/Answer(s):

(if needed, use additional sheets – don't forget to put your name on them!)

Naam:

Studentnummer:

Questions palaeoceanography B – Brinkhuis/Sluijs

Why is study of ancient Greenhouse states, like the PETM of 55,5 Ma, relevant for our immediate future? Give at least three important points, and provide the underlying rationale.

Antwoord(en)/Answer(s):

