

Mid-term sick test

Total marks: 50

Please write CLEARLY and construct precise sentences. Unreadable hand writing and sentences that are not to the point and precise but of doubtful meaning will not be marked!

Student number: 28636146 Family name: FRANS, MOZIS Initials:

Questions:

1. (20 marks): Describe the processes acting in the formation of the below profile. Which important elements and/or minerals are retained, and enriched or depleted, in which horizon?

(a) Generalized lateritic regolith profile

Lag Soil Fe laterite / laterite gravel Residium / laterite duricrust Mottled zone	Si Fe CS K depleted	Si, Al enriched
Plasmic zone, mainly	RB K CS	Si, Al, PGE
Saprolite >20% weatherable minerals altered (Primary fabric preserved)	Ca CS K Ca CS K	Si, Al
Saprock <20% weatherable minerals altered Unaltered bedrock	Ca, Mg, K, Al	Fe, Ca, Al, Al

2. (10 marks): What is the difference between South African and northern hemisphere coal deposits?

3. (15 marks): Which processes led to the magma ocean? Which were the subsequent differentiation processes and which elements took part in these processes? What were the consequences of the magma ocean?

4. (5 marks) What is the meaning of epithermal, epigenetic, mesothermal, hypogene and hypothermal?

< 200°

> 400° to 600°