

Examination AESB3103 - Basics of Geology and Economic Geology

Date: November 3, 2014

Time: 18:30h – 21:30h

Nota Bene:

- Put on every answer sheet your name, date and student number.
 - Read the questions thoroughly before answering.
 - Please write clearly! Illegible answers are considered incorrect answers!
 - You are requested to hand in the questions afterwards.
 - The importance of a question is indicated by the number of points, e.g. **3 p.**
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- 1) Mention the similarities and differences between Bauxite and Lateritic Nickel Ore. **10 p.**

- 2) Which three processes can cause melting of rocks in the Earth? **10p.**

- 3) a) Why was there dominant coal formation during the Carboniferous period? **4 p.**
b) Characteristics of coals are influenced during peat formation by seven factors. Name three. **6 p.**

- 4) a) Explain the acronym PGE. **2 p.**
b) Which metals are involved? **3 p.**
c) Mention the most important applications for two of them. **3 p.**
d) Mention two important ore deposits for PGE. **2 p.**

- 5) a) What is the name of the primary rock type in which diamonds are usually found? **1 p.**
b) What is the nature of this rock type? **3 p.**
c) Diamonds were formed at large depth beneath the Earth's surface at high temperature and very high pressure. Transport to the surface must have been very rapid. Explain this. **6p.**
- 6) Which three processes can cause melting of rocks in the Earth? **10p.**
- 7) Explain the term "Invisible Gold", and explain how this is formed. **15p.**
- 8) a) What is the geological meaning of metamorphism (or metamorphosis)? **2p.**
b) Which of the 5 types of metamorphism is most often involved with ore formation, and why? **4p**
c) Which of the 5 type of metamorphism will likely never be involved in ore formation, and why? **4p**
d) What are *Metamorphic Faciës*? **5p**
- 9) Explain the terms "Felsic" and "Mafic". **5p.**
- 10) a) Mention two important Lead & Zinc mines in Australia. **2p.**
b) What semi-precious metal is a byproduct of these mines? **3p.**