## Petroleum Geology AES3820 Written Examination, November 1, 2013

## Prof. Dr. Stefan M. Luthi

**NOTE:** The questions should be answered *as concisely but correctly as possible* (this is part of the rating). Each numbered question counts equally towards the final score. Please mention your name and student number at the top of each sheet.

- 1. Describe what conventional and unconventional hydrocarbons are. Give some estimates of their global *reserves* and *resources*, but define these two terms first. Then give the current global R/P ratios for oil, gas and coal.
- 2. In class we looked at several source rocks. First describe their characteristic appearances then the classification criteria for their source rock quality. What is kerogen and why are there different types of it?
- 3. Make a cross-sectional sketch of an anticlinal field that features both a normal and a reverse fault, and indicate possible oil accumulations on it.
- Name ten refinery products made from petroleum that are not fuels. Hint: Look around you!
- 5. What makes carbonates so diverse in their reservoir properties? Explain why some of the largest oil and gas fields, such as in the Middle East, are in carbonate rocks?

