

Entrance Examination, February 2007
Graduate School of Science and Engineering, Ehime University
Master Program in Earth's Evolution and Environment Course,

Speciality: Earth Sciences
9:00-12:00

Answer the following questions. Limitation on the length of the answer to each question is not settled. You can use both sides of the answer sheet. Select five questions from the following thirteen questions.

1. What is magmatic differentiation? How does this process form several different igneous rocks from a single magma?
2. What is the evidence for plate tectonics?
3. Describe differences between the products of mechanical weathering and chemical weathering.
4. What is turbidite?
5. Distinguish between absolute and relative dating.
6. What is Wadati-Benioff zone?
7. How does the boundary between the crust and mantle differ from the boundaries that occur at depths of about 400 and 600 km?
8. How are mid-ocean ridges related to seafloor spreading?
9. List the evidence initially led geologists to conclude that mountains in orogenic belts have deep crustal roots.
10. What is an accretionary wedge? Explain its formation process.
11. Describe impacts on the atmospheric environment of burning fossil fuels. Explain its mechanism.
12. Explain two general types of hydrothermal deposits.
13. What is the concept of sustainable development of water, land and mineral resources?