

## MOUNTAIN GEOGRAPHY, FALL 2003: PRACTICE QUESTIONS

### REMINDER

- Half of the final exam will be on material covered after the last midterm and half will be comprehensive.
- The final is on 17 December, 10:30am-1:00 pm, in our classroom.

### PRACTICE QUESTIONS

- You are climbing Mt. Everest and have reached the summit. You find marine fossils on the world's highest mountain. Apply the theory of plate tectonics to explain the orogeny of the Himalayas from 40 mya and 20 mya. Supplement your answer with diagrams.
- You are now an expert on the "*Himalayan Environmental Degradation Theory*". Argue **AGAINST ONE** of these two points: i) deforestation has increased in the last 30 years, or ii) soil erosion has increased in the last 30 years (2 pts).
- Be prepared to write the appropriate labels on a map of central Asia. See update on web page for Himalayas.
- Indigenous cultures of the Andes often view mountains as sacred but not necessarily benign. For the Andes, explain the connection between orogeny, mass wasting processes, and sacred mountains, using examples given in class.
- The Taklimakan Desert (central Asia) and Boulder, CO share several geographic features, including a continental climate and the same latitude (40°N). Explain the unique features that result in the formation of a desert in central Asia but not in central North America. Include in your answer these terms: Himalayas, subtropical monsoon, Tien Shan, prevailing winds.
- You, your brother and sister-in-law (attorneys from New York) and your 3 yappy dogs got lost near the Arikaree glacier in the Colorado Front Range for a year (true story, except it was for ten days). The winter was normal but the summer was unusually cool and cloudy. Under these conditions, did the Arikaree Glacier increase in mass or decrease in mass? Be sure to include in your answer: i) glacier mass balance, ii) equilibrium line, iii) saturation vapor pressure, and iv) ablation.
- When did large avalanches occur on Mt. Huascarán, why did they occur, and what was the magnitude of the resulting mass wasting events.
- Describe the connection between Frontrangia and the present shape of the Flatirons, emphasizing the Fountain Formation.
- Draw a cross-sectional map of the Andes that includes the following: Nazca plate, South American plate, Brazilian Shield, Mt Huascarán, active volcanic regions, Andean plateau or altiplano region, areas of compressive force, areas of tensional force, and an area where normal faulting is occurring.
- Explain why alpine basins are more sensitive to changes in climate-precipitation, energy (eg air temperature), and pollution-than downstream sites?
- Explain why pollution is worse when it falls as snow compared to rain.
- What are the four characteristics of AMD?
- Explain why AMD is often acidic. Use a chemical formula and explain all terms in the equation in your answer.
- Something on Bowman's lecture.

- Review the 3 midterms.
- Snow metamorphism causes the formation of ET and TG snow. It also causes an ionic pulse? What is an ionic pulse and why does it occur?
- A ski area in Colorado that makes snow using AMD waters is \_\_\_\_\_?
- Name and describe wet and dry terraces used in Nepal?
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