

## Final Examination Study Questions

The questions below will help you focus on the most important concepts presented in class as you prepare for the final exam. These questions don't necessarily cover all of the material on which you may be tested (nor will you necessarily be tested on all of the material noted below), but these questions are a good starting point for studying. As you prepare for the exam, I recommend that you **write down the answers** to these questions **in your own words** (not just copied from the textbook, and certainly not from Wikipedia!) to ensure that you understand the material completely.

When thinking about the many landforms we study in the second half of the semester, it may be helpful to ask yourself three questions about each: What does it look like? What is it made of? What is the process that formed it?

The final exam is comprehensive—approximately 30% of the exam will be a review of material covered on the three midterm exams, and 70% will concern new material covered after the third midterm exam. In addition to the questions below, you should review the Study Questions handed out before the three midterm exams, as well as the basics of interpreting elevation contour lines (Homework Exercise #3). Although the final exam will cover the general characteristics, controls, and patterns of weather and climate around the world, you will not be tested specifically on the Köppen climate classification system.

1. Explain the process of *soil creep*.
2. Describe the process of *rockfall*.
3. What is *talus*? Describe the general appearance of talus.
4. What is a *talus cone*?
5. What roles may heavy rain play in triggering a *landslide*?
6. How is *slump* different from other kinds of landslide?
7. What are the differences between a *landslide* and a *mudflow*?
8. How is *earthflow* different from *mudflow*?
9. Explain the concept of *differential weathering and erosion*.
10. What is the difference between *streamflow* and *overland flow*?
11. What is the difference between an *interfluvium* and a *valley*?
12. What factors influence the erosional power of a stream?
13. Why are floods so important in the development of fluvial landforms?
14. Under what circumstances is a stream likely to have a *meandering channel pattern*? A *braided channel pattern*?
15. Explain the process of valley deepening through *downcutting*.
16. Explain how a meandering stream widens its valley through the process of *lateral erosion*.
17. Describe and explain the process of *headward erosion*.
18. Explain why the rocks in deposits of *alluvium* are often *rounded, sorted* by size and *stratified*.
19. Explain how and why a deposit of *talus* is likely to look different from a deposit of *alluvium*.
20. Describe the formation of a *delta*.
21. Why don't all large rivers form deltas where they enter the ocean?
22. Describe and explain the process of *knickpoint migration*.
23. What prevents a stream from downcutting to sea level throughout its entire course?
24. Describe the general shape (cross-section) of a valley in the upper reaches of a drainage system where a stream is predominately downcutting.
25. Why are most lakes relatively temporary features in the landscape? (Hint: See textbook pp. 246-249.)
26. What are *natural levees* along a stream and how do they form?
27. Describe and explain the formation process and consequences of a *cutoff meander*.
28. What is an *oxbow lake* and how does one form?
29. What is a *meander scar* and how does one form?
30. Why might meandering rivers make poor political boundaries?
31. Describe and explain the formation of *stream terraces* and *entrenched meanders*.

32. Describe and explain the circumstances under which *dendritic* stream drainage patterns develop, and the conditions under which *trellis* stream drainage patterns develop.
33. What is an *antecedent stream* and how does one form?
34. Explain the process of *stream capture* (*stream piracy*).
35. What is the difference between an *ephemeral stream* and an *exotic stream* in a desert?
36. Although there is very little rain in deserts, running water is still the most important process of erosion and deposition in arid environments. Describe and explain at least two special conditions in deserts that tend to increase the likelihood of fluvial erosion whenever it does rain. (Hint: Think about what factors increase the relative amount of *runoff*—and therefore the amount of fluvial erosion—when it rains.)
37. Explain the general shape and movement of *barchan sand dunes*.
38. What is a desert *playa*? Where and why does a *playa* form?
39. What is an *alluvial fan* and why are they so prevalent in the Basin-and-Range desert area of North America? What is a *bajada*?
40. Briefly describe the world-wide extent of ice cover during the peak of the Pleistocene glaciations.
41. Approximately when did the Pleistocene begin and end?
42. Explain how and why global sea level fluctuated during the Pleistocene.
43. Describe and explain the formation of the large *Pleistocene lakes* in western North America.
44. Explain how the balance between ice *accumulation* and *ablation* influences the size of a glacier.
45. Why does a glacier continue to erode and transport rock even while it is retreating (getting smaller)?
46. Contrast the erosional processes of *glacial plucking* and *glacial abrasion*.
47. Describe and explain the formation of a *roche moutonnée*?
48. Describe the characteristics of glacial *till*.
49. How is a deposit of *till* likely to look different from a deposit of *alluvium*?
50. Explain the formation of *terminal moraines*, *recessional moraines*, and *lateral moraines*.
51. Describe the formation of a glacial *kettle*.
52. What is a glacial *erratic*?
53. In what ways do alpine (mountain) glaciers tend to “reshape” the old stream valleys through which they flow?
54. Describe the general down-valley profile of a glacial trough. What are *glacial steps*?
55. Describe and explain the formation of *cirques*, *horns*, and *hanging valleys*.
56. Why are there so many lakes today in areas that were glaciated during the Pleistocene? (Hint: It’s *not* because the glaciers melted and left lots of water.)
57. Contrast the characteristics of ocean waves in deep water with waves in shallow water.
58. Describe and explain the process of *wave refraction*.
59. What factors influence the erosional power of waves striking a coastline?
60. Describe the process of *beach drifting*.
61. Describe the formation and characteristics of *longshore currents*.
62. What is meant by the *sediment budget* of a coastal depositional landform such as a beach?
63. Why is the size of a California beach likely to be smaller for periods of time in the winter than in the summer? (Hint: It’s *not* because winter rain washes the sand away.)
64. Describe and contrast a coastal *spit* and a *baymouth bar*.
65. Explain the formation of a *ria coast* and a *fjorded coast*.
66. Describe the formation of a *marine terrace* along a *shoreline of emergence*.
67. What is the difference between the *focus* of an earthquake and the *epicenter* of an earthquake?
68. About how much more energy is released during a magnitude 6 earthquake than during a magnitude 5 earthquake?
69. Describe the process of *liquefaction* during an earthquake.
70. Why do areas far away from the epicenter sometimes experience greater damage during an earthquake than areas closer to the epicenter? (Consider factors *other* than differences in building construction.)