

# Physical Geology

## Test 3

Fall, 2005

**Please enter your answer in the space next to the number. The last questions are from slides that we will look at together later in the test.**

1. \_\_\_\_\_(T/F) A stream's velocity typically increases downstream.
2. \_\_\_\_\_(T/F) The greatest portion of the dissolved load transported by most streams is supplied by groundwater.
3. \_\_\_\_\_(T/F) Groundwater represents the largest reservoir of freshwater that is readily available to humans.
4. \_\_\_\_\_(T/F) Land subsidence is an environmental problem that can be caused by groundwater withdrawal.
5. \_\_\_\_\_(T/F) A reasonable value for the porosity of sand or gravel would be about 73 percent.
6. \_\_\_\_\_(T/F) Snow accumulation and glacial ice formation occur in an area known as the zone of wastage.
7. \_\_\_\_\_(T/F) In some regions of the United States that were once covered by Ice Age glaciers the crust is rebounding upward.
8. \_\_\_\_\_(T/F) In arid regions, moisture binds particles together and vegetation anchors the soil so that wind erosion is negligible.
9. \_\_\_\_\_(T/F) In the United States, loess deposits are an indirect product of glaciation.
10. \_\_\_\_\_(T/F) Desert streams are often ephemeral, which means that they carry water only in response to specific episodes of rainfall.
11. \_\_\_\_\_(T/F) Dry regions, called rainshadow deserts, often form on the leeward sides of mountains in the middle latitudes.
12. \_\_\_\_\_(T/F) In deep water, the motion of a water particle is best described as circular.
13. \_\_\_\_\_(T/F) Tides, like the time of moonrise, shift about 50 minutes later each day.

14. \_\_\_\_\_Which of the following forms the ultimate base level for a stream? (a) lake (b) resistant layer of rock (c) reservoir (d) sea level
15. \_\_\_\_\_At which location in a meandering stream is the current velocity the least? (a) the bottom of the stream (b) the center of the stream (c) the inside a meander (d) the outside of a meander
16. \_\_\_\_\_Which drainage pattern develops when the bedrock it flows over is crisscrossed by many right-angle joints and/or faults? (a) dendritic (b) deranged (c) radial (d) trellis
17. \_\_\_\_\_Lakes, streams, subsurface water, and the atmosphere account for approximately what percent of Earth's water? (a) <1% (b) 3.7% (c) 37% (d) 370%
18. \_\_\_\_\_Which of the following stream channels is likely to have the least friction as water flows over it? (a) deep and rough (b) deep and smooth (c) shallow and rough (d) shallow and smooth
19. \_\_\_\_\_Marshes called backswamps form because water on a floodplain cannot (a) evaporate (b) flow up the levee and into the river. (c) infiltrate (d) stagnate
20. \_\_\_\_\_The Mississippi River at Dubuque has cut through the limestone to form bluffs over 200 feet high. Which of the following is *not* a reasonable hypothesis as to why that has occurred? (a) base level of the river was lowered (b) damming of the river changed its flow patterns (c) river discharge increased (d) the land elevation increased due to uplift
21. \_\_\_\_\_Much of the water that flows in rivers is not direct runoff from rain or snowmelt, but originates as (a) fog (b) geysers (c) groundwater (d) humidity (e) sewage
22. \_\_\_\_\_The zone in the ground where all of the open spaces in sediment and rock are completely filled with water is called (a) permeability (b) porosity (c) the zone of saturation (d) the zone of aeration
23. \_\_\_\_\_If a house-size chunk of rock is found in the middle of an Iowa cornfield, it was most likely transported there by (a) aliens (b) floods (c) glaciers (d) meteorites
24. \_\_\_\_\_The percentage of the open spaces in sediment and rock is called (a) permeability (b) porosity (c) the zone of saturation (d) the zone of aeration
25. \_\_\_\_\_In many coastal areas, the groundwater resource is being threatened by the encroachment of (a) acidic water (b) hazardous waste (c) nutrients (d) salt water (e) sewage
26. \_\_\_\_\_A rock layer that transmits water freely is all of the following *em* except (a) an aquifer (b) an aquitard (c) permeable (d) porous
27. \_\_\_\_\_Karst topography is most likely to develop in regions with (a) granite bedrock and a dry climate (b) granite bedrock and a wet climate (c) limestone bedrock and a dry climate (d) limestone bedrock and a wet climate
28. \_\_\_\_\_The breaking off of large pieces of ice at the front of a glacier is a process called (a) calving (b) crevassing. (c) drift (d) striation
29. \_\_\_\_\_My wife lived for a year in Scandinavia. Located on the coast there are deep, steep-sided ocean inlets formed by glacial erosions called (a) calves (b) fiords (c) horns (d) moraines

30. \_\_\_\_\_Malankovich cycles are variations in Earth's orbit that are part of one hypothesis for explaining (a) changes in mutation rates (b) the cause of glacial ages (c) the location of deserts (d) plate movement
31. \_\_\_\_\_Most of the erosional work in deserts is done by (a) ice (b) livestock (c) running water (d) wind
32. \_\_\_\_\_The distance that wind has traveled across the open water is (a) fetch (b) its period (c) longshore drift (d) riptides
33. \_\_\_\_\_The presence of wave-cut terraces above sea level is one line of evidence that the area is (a) a barrier island (b) an emergent coast (c) a fiord (d) a submergent coast
34. \_\_\_\_\_Every beach has a budget. Which of the following does *not* reduce the amount of sand being carried along a beach by longshore currents? (a) constructing a concrete channel for a river to pass through (b) constructing groins (c) constructing a jettie to keep a channel open between barrier islands (d) damming rivers (e) river floods
35. \_\_\_\_\_Low ridges of sand that parallel coastlines are called (a) barrier islands (b) estuaries (c) kames (d) wave-cut cliffs
36. \_\_\_\_\_The bending of waves is called (a) longshore drift (b) wave oscillation (c) wave refraction (d) water reflection

**Bonus point:** In this course, what so far has been most helpful/useful/educational?

**Bonus point:** Second bonus point: What part(s) would you take out?

**The following questions refer to the slides that we will watch together.**

37. \_\_\_\_\_The cause of the desert shown is (a) cold polar air (b) continental interior far from a source of moisture (c) rain shadow (d) subsiding air masses associated with high pressure and Hadley cells. (e) upwelling of cold ocean currents
38. \_\_\_\_\_The cause of the desert shown is (a) cold polar air (b) continental interior far from a source of moisture (c) rain shadow (d) subsiding air masses associated with high pressure and Hadley cells. (e) upwelling of cold ocean currents
39. \_\_\_\_\_Which of the following does *not* apply to photo shown? (a) braided stream (b) common when a glacier melts in the springtime (c) ephemeral stream (d) large input of sediment
40. \_\_\_\_\_The shape of the landscape shown is due to all of the following *except* (a) the acidity of rainwater (b) the presence of limestone (c) the presence of fractures in the rock (d) the upward movement of salt deposits
41. \_\_\_\_\_The feature indicated by the arrow is all of the following *except* (a) abandoned meander (b) cirque (c) oxbow lake
42. \_\_\_\_\_The bowl-shaped erosional features shown at the head of a glacial valley is a (a) cirque (b) horn (c) moraine (d) U-shaped valley
43. \_\_\_\_\_Shown is an example of (a) an arrete (b) a cirque (c) a hanging valley (d) a horn
44. \_\_\_\_\_The structure shown is intended for all the following *except* (a) capture spring water (b) reduce gastrointestinal illness (c) protect the water pump (d) protect the water supply from contamination
45. \_\_\_\_\_The blue arrow shown represents (a) a barrier island (b) longshore drift (c) north (d) wave oscillation
46. \_\_\_\_\_Which of the following is *not* true of the area circled by the red oval? (a) the accumulation of sand depends on the direction of longshore drift (b) the beach has been artificially nourished (c) current is from bottom on the figure toward the top (d) a groin interrupts the movement of the sand
47. \_\_\_\_\_The figure shown is all of the following *except* (a) from the border between Austria and Italy (b) oetzi (c) older than King Tut (d) over 5000 years old (e) a Viking
48. \_\_\_\_\_The red dots in the figure shown represent (a) bacteria growth on a Petri dish (b) center-pivot irrigation sites (c) large tanks for gasoline (d) mushrooms
49. \_\_\_\_\_Shown is (a) a dendritic drainage pattern (b) a meandering stream (c) a radial drainage pattern (d) a trellis drainage pattern
50. \_\_\_\_\_The reddish patterns indicated with the arrows are due mainly to (a) longshore drift (b) an emerging coastline (c) glacial moraines (d) volcanoes