

Physical Geology

Test 3

Spring, 2006

Name: _____

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) Ultimate base levels for streams include lakes and resistant layers of rock.
2. _____(T/F) The reduced current velocity at the inside of a meander results in the deposition of coarse sediment, especially sand, called a point bar.
3. _____(T/F) The greatest portion of the dissolved load transported by most streams is supplied by groundwater.
4. _____(T/F) The term artesian is applied to any situation in which groundwater under pressure rises above the level of the aquifer.
5. _____(T/F) The zone in the ground where all of the open spaces in sediment and rock are completely filled with water is called the zone of saturation.
6. _____(T/F) During the Ice Age, ice sheets and alpine glaciers were far more extensive than they are today.
7. _____(T/F) Sediments laid down by glacial meltwater are called stratified drift.
8. _____(T/F) Much of the weathered debris in deserts is the result of mechanical weathering processes.
9. _____(T/F) Running water, although infrequent, nevertheless does most of the erosional work in deserts.
10. _____(T/F) Reach is the distance that wind has traveled across the open water.
11. _____(T/F) In the open sea, it is the wave form that moves forward, not the water itself.
12. _____Which of the following generally decreases downstream? (a) discharge (b) gradient (c) streambed roughness (d) velocity
13. _____Folded sedimentary rock, such as occurs in parts of the Appalachian Mountains, may result in a stream pattern with long stretches along valleys and short tributaries from the valley sides. This drainage pattern is called (a) dendritic (b) despotic (c) radial (d) trellis

14. _____Which of the following does *not* contribute directly to the water in a stream? (a) evaporation (b) groundwater (c) precipitation (d) runoff
15. _____Soil in pot X is dry. Soil in pot Y is moist. Otherwise the soils are alike. Which of the following is true? (a) Water will infiltrate into pot X faster than into pot Y. (b) Water will infiltrate into pot Y faster than into pot X. (c) Water will infiltrate into pot X and Y at the same rate.
16. _____At which of the following locations are you likely to find the finest-grained sediment? (a) in deep water off the continental shelf (b) near the headwaters of a mountain stream (c) on the natural levee of the river (d) where the river meets the oceans
17. _____In the video of the 1927 flood, water continued to stand in the town of Greenville, MS, long after the flood was over because (a) the levees were higher than the floodwaters, so the water could not return to the river channel (b) the plantations wanted it to use for irrigation (c) the planters used it to prevent sharecroppers from leaving town (d) urbanization had created much impermeable concrete and asphalt
18. _____If the cross-sectional area of a stream is 10 ft^2 , and its velocity is 2 ft/sec , then its discharge is (a) $5 \text{ ft}^3/\text{sec}$ (b) 5 ft/sec (c) $20 \text{ ft}^3/\text{sec}$ (d) 20 ft/sec
19. _____Whenever the water table intersects Earth's surface, which of the following forms? (a) artesian well (b) confined aquifer (c) spring (d) unconfined aquifer
20. _____The largest reservoir of freshwater that is readily available to humans is (a) alpine glaciers (b) the Great Lakes (c) groundwater (d) the polar ice caps
21. _____Particularly in many *coastal areas*, the groundwater resource is being threatened by the encroachment of (a) acidic waters (b) industrial waste (c) salt water (d) sewage
22. _____To be an aquifer, a rock or sediment layer must have all of the following *except* (a) a confining layer (b) high permeability (c) significant amounts of water (d) significant connected porosity
23. _____An increase in which of the following decreases velocity of groundwater, all other factors remaining the same? (a) permeability (b) porosity (c) slope of the water table
24. _____In the slide show on aquifers I've lived above, the presence of the Thermopolis Hot Springs in the Bighorn Basin of Wyoming was due to (a) a continental hot spot (b) continental rifting (c) a deep well (d) a fault bringing hot water from depth
25. _____Most caverns form at or above the water table. However, in Florida, there are caves several hundred feet below the water table. This is because (a) in warm climates, limestone dissolves at greater depths (b) sea level was several hundred feet lower during the ice ages (c) suntan lotion dissolves limestone (d) Florida has subsided several hundred feet.
26. _____Glaciated valleys typically exhibit (a) meanders (b) a U-shaped appearance (c) ventifacts (d) a V-shaped appearance
27. _____Which of the following is *not* true about a receding glacier? (a) accumulation is greater than wastage (b) large boulders left behind are called erratics (c) meltwater produces stratified drift (d) sediment left at the point of its furthest progression is its terminal moraine

28. _____The extensive glaciations that have occurred on Earth may be related to all of the following *except* (a) Earth's orbit around the sun (b) increased carbon dioxide emissions from burning fossil fuels (c) Milankovitch cycles (d) plate tectonics
29. _____The greatest daily tidal ranges occur when (a) the Earth, moon, and sun form a line (b) the Earth, moon, and sun form a right angle (c) the Earth is farthest from the sun (d) winter becomes spring
30. _____Which of the following is likely to cause a net widening of West Coast beaches? (a) continued tectonic uplift (b) damming streams that drain to the West Coast (c) increasing deforestation in the mountains near the West Coast (d) construction of groins along the beach
31. _____The bending of waves is called wave (a) oscillation (b) translation (c) reflection (d) refraction
32. _____In the online essay on Pensacola Beach, the beach was widened by (a) construction of groins (b) construction of seawalls (c) overwash by Hurricane Ivan (d) pumping additional sand from offshore
33. _____The leading killer worldwide of kids under the age of 5 is related to all of the following *except* (a) AIDS (b) dehydration (c) diarrhea (d) drinking contaminated water
34. _____In the online essay about Oetzi, the iceman, the controversy about whether he should be kept in Austria or Italy is due to all of the following *except* (a) DNA analysis shows he is European (b) he was partially removed by an Austrian policeman and studied by Austrian anthropologists (c) his body is a valuable tourist attraction (d) he was found near the Austrian-Italian border
35. _____According to the online essay on global climate change, which of the following statements is likely false? (a) The climate is currently warming. (b) Climate today is cooler than during the time of the dinosaurs. (c) Climate today is cooler than 10,000 years ago. (d) Milankovitch cycles affect global climate.

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.

36. _____The cause of the desert circled in red is (a) Hadley cells (b) long distance from source of moisture (c) rainshadow (d) upwelling of cold coastal waters (e) very cold polar air
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38. _____The stream pattern shown is due to (a) fractured rock beneath it (b) groundwater recharge (c) a heavy sediment load (d) a very low gradient
39. _____Which of the following deserts can *not* be attributed to Hadley cells? (a) Arabian (b) Eastern Washington State (c) Great Sandy (d) Namib (e) Sahara
40. _____The feature marked with an X is all of the following *except* (a) an abandoned meander (b) a backswamp (c) an oxbow lake
41. _____The bowl-shaped feature circled in red is (a) a cirque (b) an erratic (c) a horn (d) a moraine
42. _____Shown is a famous example of (a) a cirque (b) an erratic (c) a horn (d) a moraine
43. _____The concrete box shown was constructed to enhance water supplies by all of the following *except* (a) cutting off contact between animals and the water supply (b) distributing water more widely (c) improving the quality of water (d) pumping the water to homes uphill
44. _____The zigzag movement of sediment along a beach is called (a) barrier islands (b) fetch (c) longshore drift (d) wave refraction
45. _____The presence of wave-cut terraces above sea level is one line of evidence that the area is (a) an emergent coast (b) a submergent coast (c) tectonically passive
46. _____The cause of the 1993 Mississippi River flood included all of the following *except* (a) failure of levees in the upper Midwest (b) lots of rain (c) tall flood walls in St. Louis (d) unusually high discharge of the Ohio River
47. _____The main source of water for irrigating the Western Great Plains is (a) geothermal energy (b) the Ogallala Aquifer (c) the Platte River (d) the Columbia River
48. _____The big loops in the stream shown are (a) braids (b) deltas (c) meanders (d) oxbows
49. _____The features shown in red and marked with arrows are (a) barrier islands (b) groins (c) longshore drift (d) moraines
50. _____The acid that does most of the work of in creating the landscape shown is (a) carbonic acid (b) hydrochloric acid (c) nitric acid (d) sulfuric acid