

Physical Geology

Test 3

Fall, 2006

Please enter your answer in the space next to the number. The last 11 questions are from slides that we will look at together later in the test.

1. _____(T/F) Lowering base level will cause a stream to gain energy and erode.
2. _____(T/F) The gradient of a stream increases downstream.
3. _____(T/F) Permeable layers, such as clay, that hinder or prevent the movement of water beneath the surface are termed aquifers.
4. _____(T/F) Land subsidence is an environmental problem that can be caused by groundwater withdrawal.
5. _____(T/F) Slightly more than 2 percent of the world's water is tied up in glaciers.
6. _____(T/F) Sediments laid down by glacial meltwater are called stratified drift.
7. _____(T/F) Continued sand accumulation, coupled with periodic slides down the slip face, causes the slow migration of a sand dune in the direction of air movement.
8. _____(T/F) The sloping layers of sand deposited on the slip face of a dune are called ventifacts.
9. _____(T/F) Waves are created by gravity.
10. _____(T/F) The Pacific Coast of North America is undergoing uplift.
11. _____The finding of Oetzi was particularly valuable because of all of the following *except* (a) He was well preserved for his age. (b) His presence in a glacier indicated that he was more than 20,000 years old. (c) We could determine what he had eaten recently. (d) We could gather genetic material from him to determine his ethnic origin.
12. _____The 1927 flood was the worst in U.S. history. Effects of this flood included all of the following *except* (a) construction of levees that ended any further flooding of the Mississippi River (b) construction of multiple flood-control dams on the Mississippi and Missouri Rivers (c) migration of many sharecroppers from the South northward (d) raising the image of Herbert Hoover
13. _____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

14. _____In the Pensacola Beach Nourishment essay, what was the main purpose of the project? (a) to help protect mainland Florida from hurricanes (b) to provide food supplements to poor kids of the Florida panhandle (c) to reestablish sea oats that hold dunes in place (d) to widen beaches to protect hotels and tourists
15. _____Ultimate base levels for streams include which of the following (a) dams (b) lakes (c) oceans (d) resistant layers of rock
16. _____In the hydrologic cycle, which of the following does *em* not contribute water to groundwater in a dry climate? (a) evapotranspiration (b) infiltration (c) rainfall (d) runoff
17. _____The ability of a stream to transport sediment depends on all of the following *except* (a) discharge (b) dissolved oxygen (c) velocity
18. _____On a delta, the main channel of a river often divides into smaller channels called (a) dendrites (b) distributary channels (c) gulleys (d) rills
19. _____In a human climate, which of the following does *not* typically increase downstream? (a) discharge (b) dissolved load (c) gradient (d) velocity
20. _____The origin of the floodplain of the Mississippi River in South Louisiana is (a) erosional (b) depositional (c) supernatural
21. _____If a stream has a cross-sectional area of 30 ft^2 and a velocity of 6 ft/sec , then its discharge is (a) $5 \text{ ft}^3/\text{sec}$ (b) $5 \text{ ft}^3/\text{sec}$ (c) $180 \text{ ft}^3/\text{sec}$ (d) $180 \text{ ft}^3/\text{sec}$
22. _____In many coastal areas, the groundwater resource is being threatened by the encroachment of (a) acidic water (b) oil spills (c) salt water (d) sulfur
23. _____In my talk about aquifers I've lived above, below which of the following was a confined aquifer? (a) the barrier island at Grand Isle (b) the Big Horn Basin in Wyoming (c) my home in North Carolina (d) my school in Kenya
24. _____Which of the following forms on the *bottom* of caves? (a) gypsum roses (b) soda straws (c) stalactites (d) stalagmites
25. _____The boundary between the zone of saturation and the zone of aeration is called (a) an artesian well (b) the confining layer (c) a spring (d) the water table
26. _____An increase in which of the following decrease groundwater velocity, all other factors remaining the same? (a) increased aquifer grain size (b) permeability (c) porosity (d) slope of the water table
27. _____Hot springs are common in Hot Springs, Arkansas. Given what you know about tectonic activity, these spring are probably due to (a) a fault bringing water from depth to the surface (b) a mantle hot spot (c) a midoceanic spreading center (d) volcanic activity
28. _____Evidence that glaciers once occupied much of Iowa include all of the following *except* (a) cirques (b) glacial erratics (c) recessional moraines (d) terminal moraines
29. _____The breaking off of large pieces of ice at the front of a glacier is a process called (a) calving (b) crevassing (c) plucking (d) tarning

30. _____ Which of the following best describes most glacial drift? (a) coarse-grained (b) fine-grained (c) poorly sorted (d) well-sorted
31. _____ Potential causes for ice ages include all of the following *except* (a) increased carbon dioxide in the atmosphere (b) periodic changes in the Earth's orbit around the sun (c) plate tectonics
32. _____ Which of the following is likely to cause the highest tides? (a) alignment of the Earth, Sun, and Moon (b) an earthquake (c) high winds (d) a hurricane
33. _____ At which of the following locations are you most likely to find wave-cut cliffs on the coastline? (a) Florida (b) Qatar (c) North Carolina (d) the west coast of South America
34. _____ Beaches have a budget. Which of the following is likely to decrease the amount of sand coming to a beach? (a) a beach nourishment project (b) construction of groins along nearby beaches (c) deforestation (d) planting of sea oats on dunes
35. _____ Daily tidal changes are the result of (a) Earth's revolution (b) the moon's phase (c) oscillations in the Sun's brightness (d) wind differences from night to day

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

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) the Corps of Engineers (b) a dam burst (c) drought (d) flooding (e) heavy sediment load
39. _____ Which of the following deserts can not be attributed to Hadley cells? (a) Arabian (b) Gobi (c) Great Sandy (d) Namib (e) Sahara
40. _____ The feature marked with an X was created by (a) an abandoned meander (b) subsidence (c) tectonic lifting of the area (d) a yazoo stream
41. _____ The bowl-shaped feature circled in red is (a) a calf (b) a cirque (c) an erratic (d) a horn (e) a moraine
42. _____ The mountain shown is (a) the Matterhorn (b) Mt Everest (c) Mt Hood (d) Mt Kenya (e) Mt St Helens
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) longshore drift (b) the surf zone (c) wave refraction (d) wave oscillation
45. _____ The presence of wave-cut terraces above sea level is one line of evidence that the area is all of the following *except* (a) an emergent coastline (b) now higher relative to sea level (c) a passive margin (d) tectonically active
46. _____ In the figure shown, the flooding is due to lots of rain plus (a) ice dams (b) the lock and dam system on the Ohio River (c) tall flood walls in St Louis (d) unusually heavy snowmelt
47. _____ The red dots shown indicate the presence of (a) bacteria (b) corrals (c) helicopter landing pads (d) irrigation systems (e) tents
48. _____ The river shown is an example of (a) an arroyo (b) a braided stream (c) a ephemeral stream (d) a meandering stream
49. _____ The features shown in red and marked with arrows are (a) barrier islands (b) groins (c) landfills (d) moraines
50. _____ In the landscape shown, the dark lakes occupy (a) golf courses (b) quarries (c) salt mines (d) sinkholes