Physical Geology

Test 3

Fall, 2003

Please enter your answer on a blue scantron. Questions from the book's website begin the set of questions for each chapter. The last 12 questions are from slides that we will look at together later in the test. For questions marked (T/F), put *a* for *True*, and *b* for *False*.

1. The primary factor that determines whether a stream will be laminar or turbulent is: (a) stream width (b) stream velocity (c) stream depth (d) age (e) amount of stream deposits

2. Which river has the largest discharge? (a) Brahmaputra (b) Amazon (c) Nile (d) Congo (e) Mississippi

3. In the *Fatal Flood* video that we watched in class, LeRoy Percy showed his leadership by being a U.S. Senator and by standing up to the (a) Communist Workers Party (b) Democrats (c) labor unions (d) Ku Klux Klan (e) Republicans

4. In *Fatal Flood*, the levee broke at Mounds Landing, flooding Greenville, MS. Relations between whites and African-Americans were severely damaged because of all of the following *except* (a) African-Americans were forced at gunpoint to work on the levees (b) distribution of emergency goods was to whites first, then leftovers to African-Americans (c) Irish workers were brought in to tend the cotton because they were cheaper than the African-American sharecroppers (d) whites were evacuated but African-Americans were kept on the levees in camps (e) Will Percy blamed African-Americans for the death of one of their on, shot when he wasn't willing to return to work on the levee

5. Generally, the relationship between stage and discharge of a stream is that (a) discharge divided by stage equals velocity (b) higher stage reflects higher discharge (c) higher stage reflects lower discharge (d) lower stage reflects higher discharge

6. In most cases, the ultimate base level of a stream is determined by (a) the construction of reservoirs (b) discharge (c) sea level (d) the type of underlying rock

7. (T/F) Water soaks more easily into wet soil than dry soil.

8. (T/F) On average, the Mississippi River flows faster past New Orleans than it does upstream of St. Louis.

9. (T/F) On average the Mississippi River has a greater discharge at New Orleans than at St. Louis.

10. We get our tap water from the Mississippi River. On the inside of our pipes is often deposited a film of calcium carbonate. This came to New Orleans as the Mississippi River's (a) bed load (b) capacity (c) dissolved load (d) suspended load

11. Natural levees, such as where the French Quarter was originally established, are formed by (a) the capture of sediment by plant roots growing on the riverbanks (b) the Corps of Engineers (c) the slowing of flood waters as they top the banks of the river (d) subsidence of back-swamp areas

12. Which of the following is an example of non-structural methods of reducing flood damage? (a) artificial levees (b) channelization (c) dams (d) zoning regulations

13. As water is withdrawn from a well, the water table drops around the well, producing: (a) travertine deposits. (b) a cone of depression. (c) an artesian well. (d) contamination. (e) a dowser.

14. A region of irregular terrain formed when groundwater dissolves rock exhibits: (a) stalagmites. (b) columns. (c) speleothems. (d) artesian wells. (e) karst topography.

15. The boundary between the saturated zone and the unsaturated zone (zone of aeration) is called (a) an aquitard (b) an aquifer (c) the flood plain (d) the water table

16. What percentage of Louisianans get there water from ground water? (a) 27% (b) 47% (c) 67% (d) 87% (e) none

17. Which of the following is a common groundwater contaminant due to leaking underground storage tanks? (a) arsenic (b) benzene (c) DDT (d) lead

18. Which of the following explains the relative purity of most groundwater? (a) filtration of infiltrating fluids by soil (b) its lack of value as a resource (c) its location below ground (d) tough environmental laws

19. The main difference between a confined and unconfined aquifer is (a) the higher permeability of the confined aquifer (b) the higher porosity of the unconfined aquifer (c) the presence of an aquitard at the top of the confined aquifer (d) the presence of an aquitard at the top of the unconfined aquifer

20. If water flows freely from a well without pumping, then which of the following must be true? (a) the elevation of the recharge area is higher than the top of the well (b) the ground is subsiding, creating pressure to expel the water (c) the water is coming from an unconfined aquifer (d) the water is very hot

21. (T/F) A stalagmite *might* hang from the roof of a cave.

22. (T/F) Porosity is the number of pores in a rock.

23. Large glaciers that spread out over land areas are called: (a) piedmont glaciers. (b) continental ice sheets. (c) outlet glaciers. (d) ice shelves. (e) ice caps.

24. The area of a glacier in which new ice is forming is called the: (a) zone of wastage. (b) zone of ablation. (c) zone of accumulation. (d) zone of calving. (e) snowline.

25. A glacier retreats (a) because of a drop in global sea level (b) by calving (c) by melting faster than new snow is added (d) by moving uphill against gravity

26. Which of the following is not part of Milankovitch cycles? (a) changes in orbit of the Earth around the sun (b) changes in the phase of the moon (c) changes in the tilt of the Earth's axis (d) precession (change in the orientation of the Earth's axis relative to the sun, like a top wobbling)

27. Which of the following are *not* artifacts left by glaciers? (a) arroyos (b) glacial erratics (c) glacial striations (d) moraines (e) U-shaped valleys

28. During the Pleistocene epoch, continental glaciation alternated with interglacial periods. Which of the following areas in the U.S. was not covered with glaciers? (a) the Great Lakes (b) Long Island, NY (c) North Carolina (d) North Dakota

29. Which of the following was *not* an effect of ice-age glaciers? (a) change in sea level (b) change in routes of some rivers (c) connection of Alaska and Siberia by a land bridge (d) isostatic depression of the lithosphere (e) reduction of carbon dioxide in the atmosphere

30. Mountain ranges may block precipitation from reaching certain areas, creating: (a) playas. (b) subtropical highs. (c) inselbergs. (d) alluvial fans. (e) rainshadows.

31. Which type of desert erosion consists of the lifting and removal of loose material? (a) ventifact (b) pavement (c) varnish (d) deflation (e) abrasion

32. The length, height, and period of a wave depend on: (a) wind speed. (b) the length of time the wind has blown. (c) the distance the wind has traveled over open water. (d) all of the above. (e) both a and c.

33. Low ridges of sand that parallel coastlines and rise above sea level are called: (a) tombolos. (b) seawalls. (c) barrier islands. (d) baymouth bars. (e) breakwaters.

34. What is a breakwater? (a) the location where high waves crash to the coast (b) a barrier constructed to block waves completely (c) a structure built parallel to the shoreline to protect from the force of large waves (d) a ridge of sand that runs parallel to the coastline (e) a short wall built perpendicular to the coastline

35. Here in Louisiana, wetlands loss is a major research topic because of all of the following *except* (a) federal dollars for research (b) Louisiana's tough enforcement of environmental laws (c) production of seafood (d) protection from storm surges (e) recreational opportunities

36. (T/F) Estuaries are more likely to be found on the Atlantic coast of the U.S. than the Pacific coast.

37. When the Sun, Earth and Moon are in alignment, we get (a) earthquakes (b) less crime (c) neap tides (d) spring tides

38. If a coastline is characterized by cliffs, this is an indication that either sea level has dropped or (a) the coastline was once glaciated (b) the land is arid (c) the land is subsiding (d) the land surface has risen

From the Slides:

39. In the slide shown, the feature to which the arrow points is (a) an arroyo (b) a braided stream (c) a horn (d) an oxbow lake

40. The hotspring shown is from Kenya. It is caused by (a) deep subsurface penetration of groundwater (b) a geyser (c) a leaking pipe (d) upward movement of magma in a rift zone

41. The concrete structure shown is located in Haiti. It was created for all of the following reasons *except* (a) to allow the piping of water by gravity flow to nearby distribution points (b) to protect drinking water supplies from contamination (c) to provide irrigation water for crops (d) to reduce the incidence of water-borne illness

42. The figure shown demonstrates (a) the depth of three great floods in the San Joaquin Valley (b) the height of vegetation previously located in the valley before intensive farming began (c) the impact of earthquakes upon structures such as telephone poles (d) the magnitude of subsidence

43. Which characteristic best describes the glacial outwash shown in the slide? (a) coarse-grained (b) fine-grained (c) poorly sorted (d) well sorted

44. The hanging valley shown was created by (a) a cirque glacier (b) a continental ice sheet (c) a landslide (d) a volcanic eruption

45. The figure shown is (a) the abominable snow man (b) a hiker who became trapped in a crevice in the ice (c) Oetzi, the ice man (d) a paleolithic man who crossed from Siberia to Alaska during the ice age when sea level was low

46. The portion of the figure circled in red is related to all of the following *except* (a) deserts at approximately 23 degrees latitude (b) equatorial rain forests (c) flooding during El Niño years (d) Hadley cells

47. In the figure shown, the small obelisk marks the location of the Overland Trail. The topographic depression in the area behind it is due to (a) construction for a major landfill (b) deflation by wind (c) erosion by glaciers (d) flash floods

48. The desert circled in red is due to (a) being far from the nearest source of water (b) cold ocean currents (c) cold polar air (d) Hadley cells (e) rain shadows

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50. The pattern of wave movement in the figure shown creates (a) longshore currents (b) transport of sediments (c) a high tidal range (d) all of the above (e) a and b only