Physical Geology

Test 3

Spring, 2005

Name:_____

The last page of questions are from slides that we will look at together later in the test. Please put your answer in the blank provided

1. _____(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.

2. _____(T/F) Much of the water that flows in rivers is not direct runoff from rain or snowmelt, but originates as groundwater.

3. _____(T/F) The amount of water passing a given point per unit of time is a stream's discharge.

4. _____(T/F) The aquifer beneath my childhood home in North Caroline was unconfined.

5. _____(T/F) Groundwater represents the largest reservoir of freshwater that is readily available to humans.

6. _____(T/F) Water flows from an artesian well because of the weight of the overlying rock or sediment.

7. _____(T/F) Land subsidence is an environmental problem that can be caused by groundwater withdrawal.

8. _____(T/F) The Ice Age began between two and three million years ago.

9. _____(T/F) The position of the front of a glacier depends on the balance between accumulation and wastage.

10. _____(T/F) Oetzi, the Ice Man, was frozen in a glacier since the last period of continental glaciation.

11. _____(T/F) In the United States, loess deposits are an indirect product of glaciation.

12. _____(T/F) Running water, although infrequent, nevertheless does most of the erosional work in deserts.

13. _____(T/F) Reach is the distance that wind has traveled across the open water.

14. _____(T/F) In the open sea, it is the wave form that moves forward, not the water itself.

15. _____The maximum load of solid particles that a stream can transport is termed its (a) bed load (b) capacity (c) competence (d) strength

16. _____Lakes, streams, subsurface water, and the atmosphere account for what percentage of Earth's water. (a) <1% (b) 3.7% (c) 37% (d) 370%

17. _____Which of the following is *not* true about a stream's velocity? (a) It decreases as discharge increases. (b) It is greatest in the center of a straight section of a stream. (c) It is greater on the outside of meanders than on the inside. (d) It is related to the roughness of the streambed. (e) It typically increases downstream.

18. _____At the mouth of the Mississippi River, where would the finest sediments generally be found? (a) in the bed load of the river (b) in deep water in the Gulf of Mexico away from the mouth of the river (c) on the natural levees of the river (d) where the river first meets the Gulf of Mexico

19. _____On a delta, the main channel of a river often divides into smaller channels called (a) cutoffs (b) distributary channels (c) oxbows (d) yazoo streams

20. _____Which of the following are *not* engineering strategies used in flood control? (a) artificial levees (b) channelization (c) oxbow lakes (d) spillways

21. _____The 1927 Mississippi River flood had a huge impact on all of the United States. Will Percy, the main character in the video we saw in class, was all of the following *except* (a) a poet (b) gay (c) a native of Mississippi (d) son of former senator Leroy Percy (e) a successful manager of reconstruction efforts

22. _____Here in Iowa, many of our great soils are the result of (a) floods of the Mississippi River (b) glacial drift from Pleistocene glaciation (c) hog manure (d) dissolution of limestone

23. _____In the Big Horn Basin, the hot spring at Thermopolis was due to (a) coal-fired water for tourists' pleasure (b) a fault that brought heated water from deep below the surface (c) magma near the surface of the Earth (d) pumping for geothermal energy

24. _____If permeability remains uniform, the velocity of groundwater will increase as (a) elevation decreases (b) porosity increases (c) the slope of the water table increases (d) the water warms

25. _____The boundary between the saturated zone and the unsaturated zone (zone of aeration) is called (a) an aquitard (b) the capillary fringe (c) the permeability (d) the water table

26. _____Which of the following is *not* required for the use of geothermal energy? (a) fractures to bring hot water close to the land surface (b) more energy is recovered than is used (c) a permeable aquifer (d) a relatively impermeable aquitard on top of the aquifer (e) a source of heat near the land surface

27. _____Which of the following was *not* a potential groundwater contaminant mentioned in the video on Louisiana's wellhead protection program? (a) benzene (b) dry-cleaning fluids (c) solvents for cleaning printer rolls

28. _____The farthest distance that a glacier advances is marked by its (a) crevasses (b) drumlin (c) lateral moraine (d) terminal moraine

29. _____Which of the following best describes glacial till? (a) coarse (b) poorly sorted (c) very permeable (d) well sorted

30. _____Glacial striations are due to (a) erosion from meltwater (b) fossil footprints (c) friction between ice and rocks (d) rocks dragged by glaciers scraping underlying rock

31. _____Which of the following locations is most likely to have a wave-cut terraces on its coastline? (a) California (b) North Carolina (c) North Dakota (d) Texas

32. _____Santa Rosa Island, location of Pensacola Beach, Florida, is an example of (a) a barrier island (b) an emergent coastline (c) a wave-cut terrace (d) a sand volcano

33. _____The bending of waves is called (a) wave height (b) wave oscillation. (c) wave reflection (d) wave refraction

34. _____The highest tidal ranges are associated with spring tides. This is because (a) the moon, Earth, and sun are in alignment (b) spring is the wettest time of year (c) the water "springs" up to the highest elevation (d) weather varies the most during the springtime

35. _____A beach has a sand budget. When a groin is built on the beach, then (a) the beach downcurrent will lose sand (b) the entire beach will gain a net increase in sand (c) hurricanes will damage the beach less (d) a new channel is more likely to open nearby

From the Slides

36. _____The desert identified with a red oval is due to (a) cold coastal currents (b) cold polar air (c) continental interior far from water source (d) Hadley cells (e) rain shadows

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38. _____Shown is an example of (a) a meandering stream (b) a braided stream (c) a distributary channel (d) a yazoo stream

39. _____The landscape shown is referred to as (a) desert (b) karst (c) swiss cheese (d) volcanic

40. _____The feature marked with an arrow is (a) an oxbow lake (b) an natural levee (c) a braided stream (d) a yazoo stream

41. _____The red circle surrounds a (a) cirque (b) arete (c) moraine (d) kame

42. _____Shown is (a) the Grand Tetons (b) the Matterhorn (c) Mount Everest (d) Mount Kilimanjaro

43. _____The structure shown is (a) an outhouse (b) an electric generator (c) a spring-capture box (d) a well house

44. _____The drift of sand along the beach is due to all of the following *except* (a) longshore current (b) refraction of waves (c) slope of the shoreline (d) tides

45. _____The years shown on the pole indicate (a) flood elevations (b) subsidence due to groundwater withdrawal (c) the man's height in previous years (d) the amount of soil lost due to erosion

46. _____The feature in the figure shown is (a) a cirque (b) an esker (c) a horn (d) Oetzi

47. _____The red dots shown are due to (a) bacteria (b) golf courses (c) helicopter landing pads (d) irrigation (e) viruses

48. _____Shown is an example of (a) a meandering stream (b) a braided stream (c) a distributary channel (d) a yazoo stream

49. _____The rock type that formed the hills shown is (a) basalt (b) granite (c) limestone (d) salt

50. _____The features labeled with an X are (a) alluvial fans (b) terminal moraines (c) aretes (d) recharge areas