

GEOLOGY 304 TEST 2007

1. What was the name of the large lake that formed in the Red River lowlands as the glaciers receded? (a) Lanona, (b) Agassiz, (c) Upham, (d) Dakota.
2. The Sherack Fm., on which the cities of Fargo and Moorhead are located, consists of? (a) laminated silts and clays, (b) till, (c) outwash sand and gravel, (d) Cretaceous shales.
3. Large arcuate accumulations of drift, mainly till, that accumulate during still stands of glacial recession (e.g. the hills near Luverne, N.D.) are known as? (a) ground moraine, (b) ice-thrust blocks, (c) end moraine, (d) kames.
4. Small conical hills that result from the actions of rivers within ice-sheets (e.g. water moving downward through potholes in stagnant ice) are known as? (a) washboard moraine, (b) eskers, (c) kames, (d) moulins
5. Low sinuous ridges that form from the actions of subglacial rivers are known as? (a) kames, (b) end moraines, (c) compaction ridges, (d) eskers.
6. What name would you give to a rock type that consists of striated pebbles and boulders set in a matrix of clay, silt, and sand? (a) till, (b) outwash gravel, (c) lacustrine clay, (d) shale, (e) lahar.
7. What level did Lake Agassiz stand at on two occasions? (a) Herman, (b) Norcross, (c) Tintah, (d) Campbell.
8. What is the highest strandline of Lake Agassiz (eroded during the early Lockhart Phase)? (a) Herman, (b) Norcross, (c) Tintah, (d) Campbell.
9. How far south did glaciers in the Midwest reach at the maximum of the last glaciation? (a) Fargo, (b) Des Moines, Iowa, (c) Minneapolis, (d) Kansas City.
10. When did the glaciers start to retreat from the position of the last glacial maximum (in 10^3 yrs ago or ka)? (a) 100, (b) 50, (c) 14, (d) 10.
11. When did Lake Agassiz drain and the Red River establish itself (in 10^3 yrs ago or ka)? (a) 15, (b) 12, (c) 8-9, (d) 5.
12. What is the name given to flat areas that extend in front of end moraines? (a) strandlines, (b) outwash plains, (c) eskers, (d) compaction ridges.
13. Why is the Sheyenne Valley deep? (a) excavated by glaciers, (b) slow, continuous downcutting by the Sheyenne River, (c) eroded by glacial meltwater, (d) excavated by prehistoric inhabitants.

14. What active geological process is characteristic of the Sheyenne River valley today?
(a) slumping, (b) volcanism, (c) cryoturbation, (d) faulting.
15. The teeth of what type of animals have been found in the highest level strandline of Lake Agassiz? (a) mosasaurs, (b) pterosaurs, (c) dinosaurs, (d) woolly mammoths.
16. What type of deposits in the Cretaceous Pierre Formation indicate that there was active volcanism during its deposition? (a) sandstones, (b) calcareous shales, (c) bentonites, (d) till
17. What is the name given to the large marine lizards whose bones are found in the Cretaceous Niobrara Fm.? (a) pterosaurs, (b) mosasaurs, (c) phytosaurs, (d) hadrosaurs.
18. The huge volume of sediment deposited in Lake Agassiz by the Sheyenne River formed the? (a) Lake Agassiz Plain, (b) Sheyenne "Delta", (c) Luverne Moraine, (d) Campbell Beach.
19. What features produced by wind during the last few thousand years are responsible for the characteristic topography of the Richland County sandhills? (a) barchans , (b) ventifacts, (c) parabolic dunes, (d) moraines.
20. Which of the following stratigraphic boundaries would most likely result in the formation of a spring? (a) between impermeable and impermeable strata, (b) between porous and impermeable strata, (c) porous and porous strata