

Physical Geology

Test 2

Summer 2003

Please enter your answer on a blue scantron. For all True/False questions, put A for True and B for False. The first 14 questions are directly from the book's web site. The last 8 are from slides we will look at together later in the test.

1. What is the most important agent of chemical weathering? (a) carbon dioxide (b) carbonic acid (c) halite (d) oxygen (e) water
2. Which of these minerals is most weather resistant on Earth's surface? (a) potassium feldspar (b) pyroxene (c) quartz (d) biotite mica (e) olivine
3. Highly leached soils that develop in hot, wet tropics are called: (a) podiatrist. (b) humus. (c) pedalfer. (d) laterite. (e) pedocal.
4. List, in chronological order, the processes that a rock must go through to become a sedimentary rock. (a) weathering-deposition-erosion-compaction and cementation (b) weathering-compaction and cementation-deposition-erosion (c) erosion-weathering-deposition-compaction cementation (d) weathering-cementation-erosion-compaction-deposition (e) weathering-erosion-deposition-compaction and cementation
5. Which of these statements is not true of chemical sedimentary rocks? (a) They are formed from material that is carried in solution. (b) They may be formed through organic or inorganic processes. (c) Examples include salt, chert, and limestone. (d) They generally consist of quartz and feldspar. (e) They are generally formed in water-rich environments.
6. Turbidity currents are generally associated with sedimentary feature? (a) cross-bedding (b) conglomerates (c) graded beds (d) ripple marks (e) mudcracks
7. The force exerted on a buried rock by the weight of material above is called: (a) shear stress. (b) differential stress. (c) tensional stress. (d) confining pressure. (e) geothermal gradient.
8. When subjected to pressure, metamorphosed rocks show a layered or banded texture called: (a) non-foliated texture. (b) slate. (c) facies. (d) foliation. (e) mylonite.
9. In high grade metamorphism, the segregation of minerals into separate bands is called: (a) slaty cleavage. (b) rock cleavage. (c) schistosity. (d) gneissic texture. (e) preferred orientation.
10. Listed in order of increasing metamorphic grade, a shale could be metamorphosed into: (a) gneiss-schist-phyllite-slate (b) gneiss-phyllite-slate-schist (c) slate-phyllite-schist-gneiss (d) slate-schist-gneiss-phyllite (e) schist-phyllite-slate-gneiss

11. The parent rock of a marble is: (a) limestone. (b) granite. (c) sandstone. (d) slate. (e) shale.
12. A slope built of angular rock fragments is called: (a) talus (b) angle of repose (c) flow (d) slump (e) slide
13. Heavy rainfalls that erode volcanic deposits often produce what kind of mass wasting? (a) soil creep (b) rock falls (c) rock slides (d) slumps (e) lahars
14. Slow movement of soil and regolith caused by expansion and contraction of material is called: (a) lahar (b) creep (c) soil slide (d) rockfall (e) slump
15. (T/F) The density of water at 33 degrees Fahrenheit is greater than the density of ice.
16. (T/F) At the Earth's surface, quartz will weather more quickly than feldspar.
17. (T/F) Most chemical weathering of rocks occurs at the surface of the rock.
18. (T/F) A sand has more surface area per unit volume than a gravel.
19. (T/F) A sandstone is an example of a detrital sedimentary rock.
20. (T/F) The sediment that forms a conglomerate was transported by faster moving water than the sediment that forms a sandstone.
21. In which of these locations has the sediment been weathered the most? (a) a beach composed mostly of quartz sand. (b) the flanks of a volcano covered with ash (c) a mountain stream containing granite boulders (d) Outwash from an Alaskan glacier
22. Which of the following is **not** an example of chemical weathering? (a) dissolution (b) frost wedging (c) hydrolysis (d) oxidation
23. Salt deposits under parts of Kansas are an indication that (a) Kansas was once covered with seawater (b) road de-icing is polluting the ground water (c) salt domes can migrate across vast distances (d) salt forms from glacial outwash
24. Which of the following parent materials is likely to result in the formation of the better soil? (a) granite (b) halite (c) limestone
25. How does deforestation affect soil loss? (a) runoff of rainfall is faster (b) soil is not held by plant roots (c) more small plants grow to hold the soil in place (d) all the above (e) a and b only
26. In which of the following countries is soil development likely to be best? (a) Antarctica (b) The Bahamas (c) Germany (d) Greenland (e) Qatar
27. Which of the following is most important in the formation of a soil profile? (a) downward movement of infiltrating water (b) leaching of ions (c) precipitation of ions (d) presence of organic material
28. A thin layer of hard rock commonly found below the surface in arid environments is (a) caliche (b) chert (c) laterite (d) loess
29. Which of the following forms of chemical pollution causes eutrophication? (a) DDT (b) heavy metals (c) nutrients (d) pesticides

30. The water from Lake Peigneur catastrophically drained (a) into the Atchafalaya River (b) into the Gulf of Mexico (c) into a salt mine (d) into a volcano
31. Oil prices quadrupled during the 1973 OPEC oil embargo. Which of the following were **not** significant factors leading to or resulting from the embargo? (a) The U.S. strongly supported Israel. (b) Saudi Arabia and other oil-producing countries became flush with cash. (c) Developing countries in Latin America and Africa were able to rapidly raise their standards of living. (d) Industrialized countries underwent massive inflation.
32. Which of the following sedimentary rocks is likely to form from sediments deposited in the deepest water? (a) breccia (b) conglomerate (c) sandstone (d) shale
33. Which of the following is most likely to be the source rock for petroleum? (a) breccia (b) conglomerate (c) sandstone (d) shale
34. Which of the following chemical sedimentary rocks is composed of silica and was used in stone-age times for making knives? (a) chert (b) coal (c) dolostone (d) gypsum (e) limestone
35. The process of lithification includes which of the following? (a) compaction (b) cementation (c) both a and b (d) neither a nor b
36. From which of the following is the **least** energy consumed in the U.S.? (a) coal (b) hydroelectric power (c) natural gas (d) oil
37. Which of the following events affected long-term oil prices the **least**? (a) the OPEC oil embargo (b) Iraq's 1990 invasion of Kuwait (c) the Iran-Iraq war of the 1970s (d) Saudi Arabia's policies on production of oil
38. Which of the following types of metamorphism is most likely to occur at high temperatures but relatively low pressures? (a) cataclastic (fault-zone) metamorphism (b) contact metamorphism (c) regional metamorphism
39. Which of the following types of metamorphism is most important in terms of the amounts of metamorphic rock produced? (a) cataclastic (fault-zone) metamorphism (b) contact metamorphism (c) regional metamorphism
40. Which of the following did the extermination of the pigs of Haiti **not** contribute to? (a) a decline in school enrollment (b) deforestation (c) the fall of Baby Doc Duvalier (d) greater production of coffee for export (e) a lower standard of living of rural peasants
41. The rock specimen I am passing around is an example of a (a) chert (b) gneiss (c) phyllite (d) schist (e) slate
42. Which of the following minerals is **not** a significant component of the hand sample? (a) garnet (b) gypsum (c) mica

From the slides:

43. In the figure shown, the rounding of the granite is called (a) differential weathering (b) frost wedging (c) hemorrhoidal weathering (d) spheroidal weathering
44. The exfoliation weathering pattern shown is due to (a) dissolution (b) frost wedging (c) oxidation (d) unloading
45. The equipment in the slide is used to (a) store coal (b) irrigate nearby field (c) separate oil and water (d) mix concrete
46. In the slide shown, the rock on the left is shinier because (a) geologists like to show off pretty rocks (b) it contains calcite (c) it contains mica (d) it has been polished
47. In the figure shown, the salt dome Louisiana's oil industry in all of the following ways **except** (a) deforms sedimentary layers (b) leads to accumulation of petroleum (c) seals sediment layers against the flanks of the dome to prevent further upward movement of petroleum (d) serves as a source of organic matter
48. The primary reason for the disastrous slide shown is (a) deforestation (b) an earthquake (c) erosion of the sandstone layer by the river (d) roadcuts oversteepening
49. Which is **not** true about the metamorphic rock show? (a) Its parent rock was limestone. (b) It is made of calcite. (c) It is a source of rock salt. (d) It is commonly used for carving statues.
50. Which of the following is **not** true about the rock in the slide? (a) It is a breccia. (b) The sediment that forms it is angular. (c) The sediment that forms it was transported a long distance from its source. (d) The water that transported the sediment was moving relatively fast.