

Physical Geology

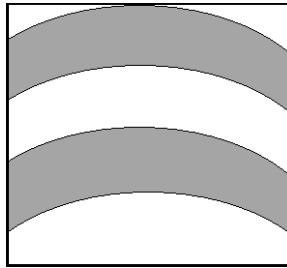
Test 4

Fall, 2003

Please enter your answer on a blue scantron. 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. What type of continental margin is the East Coast of the United States and Canada? (a) passive (b) abyssal (c) emergent (d) active
2. Which part of a continental margin consists of deep-sea fans created by turbidity currents? (a) accretionary wedge (b) continental slope (c) continental shelf (d) continental rise
3. What is a guyot? (a) a rim of coral surrounding a seamount (b) a long, narrow feature that comprises the deepest part of the oceans (c) one of the mountains comprising a mid-ocean ridge (d) a flat-topped, submerged seamount
4. Which type of seafloor sediment consists of sediments that have precipitated from seawater? (a) hydrogenous (b) terrigenous (c) biogenous (d) homogeneous
5. What is the name of the parts of the ocean where new basaltic crust is created? (a) active continental margins (b) mid-ocean ridges (c) atolls (d) guyots
6. The rim of the Pacific Ocean is comprised mainly of (a) convergent plate boundaries (b) divergent plate boundaries (c) a passive margin (d) transform boundaries
7. Which of the following is the pattern in the age rocks relative to mid-oceanic spreading centers? (a) rocks nearer the spreading center are younger than those farther from the spreading center (b) rocks nearer the spreading center are older than those farther from the spreading center (c) old and young rocks alternate (d) the ages are chaotic, lacking any recognizable pattern
8. (T/F) An atoll forms from coral growing around a subsiding volcano.
9. Deciding to lower highway speed limits in order to reduce highway fatalities is an example of which of the following approaches for managing risk? (a) laissez-faire (b) rights-based (c) technology-based (d) utility-based
10. Which of the following provides most of the energy for earthquakes? (a) foreshocks (b) solar energy (c) tectonic forces (d) tidal energy
11. (T/F) The Mercalli scale is more precise than the Richter scale in measuring earthquake magnitude.
12. The fact that a p-wave travels faster than an s-wave allows us to determine which of the following? (a) magnitude of the earthquake (b) distance to the epicenter (c) time since the earthquake occurred (d) amount of destruction from the earthquake
13. Which type of seismic wave can travel through the core? (a) s-waves (b) long waves (c) p-waves (d) all of the above (e) none of the above

14. (T/F) Coal forms from old swamps but has been found in Antarctica.
15. At which of the following locations are earthquakes likely to be deepest? (a) at a mid-oceanic spreading center (b) at the San Andreas fault (c) beneath the Himalaya Mountains (d) beneath the Andes Mountains
16. Japan is an example of which of the following types of plate boundaries? (a) continental-continental convergence (b) divergent (c) oceanic-continental convergence (d) oceanic-oceanic convergence (e) transform
17. Which of the following provides the **least** evidence for plate tectonics? (a) the age of islands in the chain of seamounts that Hawaii is part of (b) direct satellite measurements of plate movement (c) paleomagnetic striping of the seafloor (d) radiocarbon dating (e) the presence of similar fossils and rock types on continents now separated by the Atlantic Ocean
18. In the figure shown below is (a) an anticline (b) a syncline (c) a transform fault (d) a uniform



19. In 1915, Alfred Wegener proposed the basic outline of a hypothesis called: (a) uniformitarianism. (b) seafloor spreading. (c) seafloor volcanism. (d) continental drift.
20. The main objection to Wegener's hypothesis was: (a) glacial striations in the Southern Hemisphere (b) the shapes of North America and Europe didn't match up (c) paleomagnetism refuted his arguments (d) there was no known mechanism capable of moving continents
21. Most basaltic volcanic activity is associated with what type of plate boundary? (a) hot spots (b) transform (c) divergent (d) convergent
22. The most widely believed theories explaining the mechanism that drives plate tectonics all rely on the idea of: (a) slap-push. (b) slab-pull. (c) plumes that rise from the core. (d) unequal heat distribution within the Earth.
23. The Andes Mountains in South America occur at which type of plate boundary? (a) continental-continental convergent (b) divergent (c) oceanic-continental convergent (d) oceanic-oceanic convergent
24. The Himalaya Mountains occur at which type of plate boundary? (a) continental-continental convergent (b) divergent (c) oceanic-continental convergent (d) oceanic-oceanic convergent
25. What is the name of the theory that the crust "floats" in gravitational balance on a more dense mantle? (a) orogenesis (b) mountain roots (c) isostasy (d) gravity

26. Why are young mountain chains taller than old mountain chains? (a) isostasy has pulled the mountains down (b) when orogenesis is over, the mountains elastically rebound (c) erosion has worn old mountains down (d) plate collisions are stronger now, producing taller mountains
27. Which of the following mountain types is primarily due to continental-continental convergence? (a) fault-block mountain (b) folded mountains (c) upwarped mountains (d) volcanic island arcs
28. Which of the following does the most to speed the evolution of bacteria? (a) coughing in the classroom (b) having unprotected sex (c) not washing your hands (d) stopping your antibiotics before you have taken the complete dose
29. Which of the following is **not** a type of relative dating? (a) law of superposition (b) principle of original horizontality (c) principle of cross-cutting relationships (d) radiometric dating
30. Before an angular unconformity forms, which of the following is required? (a) deformation (b) deposition (c) erosion (d) all of the above (e) c and d only
31. The characteristic of a radioactive isotope which allows its use as a “clock” is its (a) atomic mass (b) atomic number (c) half-life (d) number of neutrons
32. The principle that states that a fracture is younger than what is fractured is called: (a) principle cross-cutting relationships. (b) relative dating. (c) principle of original horizontality. (d) correlation. (e) absolute dating.
33. If the ratio of parent isotope to daughter isotope is 1:15, how many half-lives have passed? (a) 1 (b) 2 (c) 3 (d) 4 (e) 5
34. Which isotopic system is commonly used for by archaeologists for dating Egyptian artifacts? (a) uranium 235—lead 207 (b) uranium 238—lead 206 (c) potassium—argon (d) rubidium—strontium (e) radiocarbon
35. The first appearance of abundant fossils is found in rocks of what time period? (a) the Mesozoic. (b) the Precambrian. (c) the Cambrian. (d) the Quaternary. (e) the Hadean.
36. The extinction of the dinosaurs occurred at the boundary between which two time eras? (a) Precambrian—Paleozoic (b) Paleozoic—Mesozoic (c) Mesozoic—Cenozoic (d) Cenozoic—Precambrian
37. Which of these organisms, probably the first type to develop on Earth, does not require oxygen to live? (a) eukaryotes (b) anaerobic bacteria (c) photosynthesers (d) pangaea
38. Perhaps the strongest evidence found by UNO geologists that supported the hypothesis of the bolide impact killing off the dinosaurs was (a) analyzing recent corals from the Caribbean to determine global temperatures (b) discovering anhydrite encased in glass in cores from the Yucatan (c) finding bones from dead dinosaurs (d) performing geophysical surveys across the northern Yucatan

From the Slides:

39. The location indicated by the **red** arrow represents an earthquake's (a) epicenter (b) focus (c) p-wave (d) s-wave (e) wave front
40. Extensional forces pull a divergent boundary apart, creating: (a) rifts. (b) trenches. (c) basins. (d) abyssal plains.
41. The events indicated on the graph represent (a) active and dormant periods of volcanic activity (b) changes in direction of plate movement (c) magnetic reversals (d) periods of intense meteorite bombardment
42. In the figure shown, the pattern of blue, yellow, and red, such as on the west coast of South America, indicates (a) the increasing depth of earthquakes beneath a continent (b) the decreasing depth of earthquakes beneath a continent (c) the locations of volcanoes (d) the locations of trenches
43. In the figure shown, which is the correct order, from oldest to youngest? (a) A,F,G,K (b) A,G,F,K (c) F,A,C,E (d) H,I,C,K
44. What is the greatest cause of loss of life during an earthquake? (a) collapse of building (b) fire (c) flooding (d) heart attacks
45. The probability of an earthquake at the location pointed to by the blue arrow is best explained by the presence of (a) a major river (b) a subduction zone (c) a rift valley (d) testing of nuclear weapons
46. (a) (T/F) The fossil shown is younger than the dinosaurs.
47. Based on the diagram shown, which of the following is true? (a) Fishes evolved sooner than invertebrates. (b) Cone-bearing plants evolved from flowering plants. (c) The expansion of the mammals corresponded to the decline in reptiles. (d) The expansion in birds corresponded to the decline in mammals.
48. The Chixculub Crater circled in the figure is believed to be the location where (a) a large volcano erupted than doomed the Mayan culture (b) a bolide struck the doomed the dinosaurs (c) aliens first contacted Earthlings (d) oil was first found in Mexico
49. The portion of the bridge indicated by the white arrow is (a) an expansion joint (b) An engineering flaw in the construction of the bridge (c) a fracture due to an earthquake (d) a jump ramp for skateboarders
50. This figure is an example of what theory that states that the crust "floats" in gravitational balance on a more dense mantle? (a) orogenesis (b) mountain roots (c) isostasy (d) gravity