

Final Exam Study Guide

Layers of the Earth

1. What are the 4 layers of the earth?
2. Be sure to know different characteristics of each layer.
3. What are 2 sub layers of the crust?
4. Compare and contrast the 2 sub layers of the earth. Be sure to specifically mention the composition, density and age.
5. What are the 2 sub layers of the mantle?
6. What does lithos mean and what does astheno mean?
7. Where is the lithosphere located?
8. What is so special about the asthenosphere?
9. Where does Earth's magnetic field come from?
10. What causes earth's magnetic field?
11. Why is the earth's inner core a solid?

Seismic Waves and Inferences About the Layers of the Earth

12. What are seismic waves and where do they travel?
13. Draw a venn diagram comparing and contrasting P waves and S waves.
14. What does it mean if something is reflected? What does it mean if something is refracted?
15. What is the main reason as to why scientists are able to infer the characteristics of the layers of the earth?

Continental Drift

16. Explain continental drift.
17. Who was Alfred Wegener?
18. What are the 6 pieces of evidence we discussed involving continental drift?

19. How were fossils a key piece of evidence in supporting continental drift?
20. How was rock evidence a key piece of evidence in supporting continental drift?
21. How were glacial deposits a key piece of evidence in supporting continental drift?
22. What scientist suggested that the seafloor might be spreading?
23. Explain how scientists know that the seafloor is spreading.
24. What is the Mid Atlantic Ridge and where is it located?
25. What does paleo mean?
26. What does paleomagnetism have to do with continental drift?
27. How do scientists know that the earth's magnetic field has reversed?
28. In what direction are the 2 oceanic plates moving that make the Atlantic Ocean?

Plate Tectonics

29. What is plate tectonics?
30. About how many centimeters do the plates move per year?
31. How many major plates are there?
32. What are the 3 types of plate boundaries
33. What types of landforms occur at each type of boundary?
34. What are the differences between the 3 types of convergent boundaries?
35. Be able to name a place on Earth where each of the different types of plate boundaries occurs.
36. What is the difference between a continental rift and an ocean ridge?
37. What type of plate boundary were the Andes Mountains formed by?
38. Be able to explain how the graham crackers and frosting model plate tectonics.

Convection

39. It might be a good idea to watch the Khan Academy video again.
40. What is convection?
41. How was convection displayed in the demo and the experiment?
42. Be able to EXPLAIN how the plates move by convection using words such as heat, hotter, colder, more dense, less dense, etc.

Earthquakes

43. What are earthquakes and where do earthquakes occur?
44. Explain the difference between the focus and the epicenter.
45. Compare and contrast the 3 different types of earthquakes.
46. What are hanging walls and foot walls?
47. How are you able to tell the difference between the hanging wall and the foot wall?
48. Explain which way the hanging wall moves during each of the 3 types of earthquakes.
49. How do scientists use seismometers to determine the epicenter of an earthquake?
50. What is the difference between the Richter Scale and the Mercalli Scale?
51. Know what the difference between a magnitude 8 earthquake and a magnitude 2 earthquake is.
52. What is the Ring of Fire and where is it located?
53. What type of plate boundary causes the most earthquakes?
54. What type of plate boundary causes the deepest earthquakes?
55. Name 3 high risk zone for earthquakes throughout the world.

Rocks

56. What are the 3 different types of rocks?

57. What is the meaning of the following words: igneous, sedimentary and metamorphic?
58. How are igneous rocks formed?
59. Explain the difference between magma and lava.
60. What are the 2 different types of ways that igneous rocks are formed?
61. Explain the 2 different ways in which igneous rocks are classified.
62. What type of crystals will form if a rock is cooled quickly? What if the rock is cooled slowly?
63. Know the different characteristics of igneous rocks.
64. Explain the process in which sedimentary rocks are formed.
65. What are sediments?
66. What are the 2 different ways in which sedimentary rocks can be formed?
67. What are the 3 different types of sedimentary rocks?
68. Know the different characteristics of sedimentary rocks.
69. How are metamorphic rocks made?
70. What is the difference between a foliated rock and a nonfoliated rock?
71. Know the difference between local and regional metamorphism?
72. What is the main reason for contact metamorphism? What about dynamic metamorphism?
73. Know the different characteristics of metamorphic rocks.

Seasons

74. Explain how the Earth's tilt is responsible for the seasons.
75. If it is summer in the northern hemisphere, why is it winter in the southern hemisphere?

Astronomy

76. What is a star?
77. Explain what a nebula is and how a nebula is the beginning of a star.
78. At what point does a nebula turn into a protostar?
79. What needs to occur in order for a protostar to turn into a star?
80. Explain what nuclear fusion is.
81. What is a main sequence star?
82. Explain the balancing act that occurs in main sequence stars.
83. What nuclear fusion process occurs in a main sequence star? A red giant? A supergiant?
84. How are white dwarfs formed?
85. Explain what a supernova is.
86. What is a black hole?
87. Be able to use an H-R diagram to determine certain characteristics of a star.
88. What are the 2 basic properties on an H-R diagram?
89. What kind of star is the Sun right now? What will it eventually turn in to?
90. What was your honest opinion of this class?