

Chapter 13, Part 1.

1. Tokyo has a major earthquake on average each _____.
2. The biggest death toll from an earthquake happened at Shensi, China, in _____.
3. Perhaps the biggest earthquake known to man, happened in _____ in _____.
4. Earthquakes result from sudden movement and ruptures in the earth's crust called _____.
5. The point at which there is the greatest movement is called the _____. This may be deep below the earth's surface. The _____ is the point directly above the focus and on the _____.
6. Read figure 13.2 on page 282. Briefly describe what happens during an earthquake:
7. During earthquakes, certain _____ of soils will _____ and turn to _____.
8. When earthquakes occur under the sea, the sudden faults cause giant waves or _____.
9. What are aftershocks and why are they so dangerous?
10. View the damage caused by tsunamis and read figure 13.4 on page 283.

11. Earthquakes are separated by _____ when energy is _____.
12. The _____ is suddenly transformed into energy of _____.
13. Energy of motion is called _____.
14. Scientists believe rock far beneath the surface becomes less _____ and more _____.
15. Earthquake _____ are used to study materials and processes otherwise hard to see.
16. A theory which explains the storing and release of stress in rock is called the _____.
17. Diagram and briefly explain the elastic rebound theory:

Part 2.

18. About _____, the _____ invented a device to detect ground motions. This device was _____, but it could not tell between _____ vibrations.
19. Read figure 13.7 and the extension on page 285. Why did the government made this decision?
20. Italian scientist Giuseppe Mercalli developed the _____ used to measure earthquakes. It was based upon _____, _____, and _____ effects.
21. Read about the Modified Mercalli scale in table 13.1 on page 286.
22. The _____ is more accurate instrument to measure earthquakes. To measure the _____ of the motion, a stationary reference _____ is needed.
23. _____ is the tendency of a mass to stay at rest or continue moving unless the _____ of mass or _____ is changed by external force. The _____ the mass, the greater the _____.
24. Describe how a seismograph machine works:

25. The development of the _____ meant the motion could be _____.
The new earthquake scale for measuring motion is called _____.
26. The energy of an earthquake _____ in all directions from the _____,
becoming _____ as it spreads out from the centre.
27. The differences in the types of _____ and _____ change the level of
_____ felt by people on the surface. The _____ of damage to
structures is not a _____ indication of the strength of an earthquake.
28. Why was Mexico City more severely damaged than Acapulco during the major quake of 1985?
29. _____ developed the standardized measurement of _____ in 1935.
30. Magnitude is based on the measurement of the _____ of _____. It
has no upper _____ although readings great than _____ are very _____.
31. Each point on the _____ represents ground vibrations _____ more
than the point below. Each tenfold increase in _____ means about _____
increase in the amount of _____ released.
32. Seismograms show the presence of two different types of _____ called _____ and _____.
33. What are the differences between S and P earthquake waves?

Part 3.

34. How do seismologists locate the origin or epicentres of an earthquake?
35. By _____ the locations of earthquake _____ around the world,
geologists have found that epicentres tend to be _____ in certain areas.
36. These areas are identified as _____ earthquake zones where the _____
of earthquakes is much _____ than average.

37. The earth's outer _____ is divided into separate rigid _____ called _____.
38. _____ where earthquake activity occurs and the plate meet are called _____.
39. What are the three types of plate boundaries:
40. Earthquakes are believed to occur when _____ alternatively _____ and _____ against each other in the _____ zones at _____.
41. This theory of moving plates was developed by a Canadian scientist called _____ and is called the _____.
42. Read about J. Tuzo Wilson and theory of Plate Tectonics in the Profile panel on page 294.

Part 4.

43. Describe the three characteristics of high-risk earthquake zones:
44. Read figure 13.18. What do you think is the earthquake risk for British Columbia? Why?
45. The clustering of quakes along the shoreline indicate the presence of _____.
46. What kind of geological evidence would you look that indicates prehistoric quakes in BC?

Part 5.

47. Certain changes in the properties of rock such as _____, _____, and _____ are observed just before a fault slips.
48. Tiny _____ develop in strongly compressed rock and fill with _____.

49. Seismologist _____ been able to accurately _____ earthquakes.
50. List some of the factors and conditions involved in predicting earthquakes:
51. Examine the earthquake prediction for the San Andreas Fault in figure 13.21 on page 297.
52. Read the Computer Application panel on page 298.
53. A _____ measures _____ just like a seismograph.
54. With help from computers, a _____ of seismometers, called a seismological array, can detect _____ anywhere in the world and help enforce _____.

Part 6.

55. Energy from powerful earthquakes can _____ through the earth. Waves pass through _____ or _____ material called _____. Since their _____ changes due to the _____ of the material, scientists can use these waves to learn about the earth's _____.
56. Wave speed _____ with the density of the medium. By using _____ and _____ scientists can find out about the composition of different rocks. However, this technology is only useful within a _____ of depth.
57. Read Activity 13E, **Part 1** on page 299. Orally answer questions 1-6 with out doing the lab. Move onto **Part 2** and answer questions 7 - 9 on a separate sheet of paper. You will need a ruler and extra paper. Copy and complete Table 13.3. Do not complete the discussion section.
58. Our planet is _____ like the _____ of an onion and the deep layers are under _____, compressing materials to _____.
59. Sketch and label figure 13.24 on page 302 below. List & describe the various layers of the earth:

60. The _____ is a very complex layer of the earth. It is _____ and _____. The top 100 km is rigid and known as the _____.
61. Under the lithosphere is a very hot, thick fluid & under great _____. This fluid rises and cools, slowly flowing and _____ in _____ currents.
62. Convection currents are believed to be the force behind _____.
63. Whole continents float slowly on the mantle until they _____ causing crustal rocks to be _____ and _____ into mountain ranges.
64. Sketch figure 13.25 on page 303 showing convection currents found in the earth's mantle layer: