Geologic Time Test Study Guide
1. What is the difference between uniformitarianism and catastrophism?

**Uniformitarianism:** the same geologic processes shaping the Earth today have been at work throughout Earth’s history

**Catastrophism:** a principle that states that geologic change occurs suddenly

2. What is relative dating?

**Determining whether an object or event is older or younger than other objects or events**

3. What is the law of superposition?

**The principle that states that younger rocks lie above older rocks in undisturbed sequences**
4. What is the principle of original horizontality?

Sediment is generally deposited in flat, horizontal layers. If it is tilted and bent, then it occurred after the rock layers formed in flat, horizontal layers.

5. What is an unconformity? What causes unconformities?

An unconformity is a break in the geologic record created when rock layers are eroded or when sediment is not deposited for a long period of time.
What is an unconformity?

Layer(s) of missing rock, due to erosion or nondeposition.
6. What is a fossil?

**Traces or imprints of living things that are preserved in rock**

7. In what type of rock are most fossils found?

**Sedimentary Rock**

8. What is a trace fossil?

**Any naturally preserved evidence of animal activity (coprolite)**

9. What is an index fossil?

**Fossils of organisms that lived during a relatively short, well-defined geologic time span (trilobites)**
10. What are the 2 conditions that favor preservation of an organism as a fossil?

1. **Rapid Burial**— protects an organism from being eaten or decomposing
2. **Possession of Hard Parts**— they are more likely to remain intact long enough to become fossilized

11. How can fossils help build detailed pictures of past environments?

1. **Fossilized clam shells**: there must have been an ocean there
2. **Fossilized coral**: there must have been a shallow tropical sea there
3. **Coal**: There must have been a swamp with tropical plants
12. What is radioactive decay?

**The process of unstable nuclei becoming stable by spontaneously breaking apart and releasing energy**

13. What is absolute dating?

**Any method of measuring the age of an event or object in years**

14. What is the most common method of absolute dating?

**Radiometric dating**

15. What is half-life?

**The time needed for half of a sample of a radioactive substance to become stable**

16. What is an isotope?

**An atom that has the same number of protons as other atoms of that element but a different number of neutrons (and therefore a different atomic mass)**
17. What is radiometric dating?

A method of determining the age of an object by estimating the relative percentages of a radioactive (parent) isotope and a stable (daughter) isotope.

18. Why can’t radiometric dating be used to date sedimentary rock? How do geologists get the age of it then?

Sediment in rocks are weathered from so many different rocks of different ages. They must relate the sedimentary rock to datable masses of igneous rock.
19. How old is the earth?

**4.6 Billion-ish years old**

20. What do geologists call the period of time before the Cambrian period?

**Pre-Cambrian time**

21. Be able to place the eras in the correct order from oldest to most recent.

**Paleozoic ➔ Mesozoic ➔ Cenozoic**

22. How long ago did the dinosaurs become extinct?

**65 million years ago**
23. Which era means “Ancient life” because geologists thought this was the oldest rock that existed? List some basic facts from this era.

**Paleozoic Era**  -- dominated by fish, Amphibians, Early Reptiles, Land plants emerge

24. Which era was the “Age of the Reptiles”? List some basic facts from this era.

**Mesozoic Era**  -- Early birds appear, first flowing plants, dinosaurs dominant

25. Which era was the “Age of the Mammals”? List some basic facts from this era.

**Cenozoic Era**  -- Mammals, primates, and humans