

Ch 8 Practice Exam

Multiple Choice

Identify the choice that best completes the statement or answers the question.

- ____ 1. Scientists estimate the age of the Earth to be about
a. 10 billion years. c. 3.8 billion years.
b. 4.6 billion years. d. 4.4 million years.
- ____ 2. The first cells appeared about
a. 10 billion years ago. c. 3.5 billion years ago.
b. 4.6 billion years ago. d. 4.4 million years ago.
- ____ 3. Plants and air-breathing animals appeared during this time period.
a. Precambrian time c. Mesozoic era
b. Paleozoic era d. Cenozoic era
- ____ 4. Cyanobacteria, which first appeared on Earth over 3 billion years ago, are
a. eukaryotes. c. terrestrial organisms.
b. prokaryotes. d. descendants of primitive plants.
- ____ 5. Which of the following is characteristic of ALL primates?
a. bipedalism c. binocular vision
b. vertical pelvis d. opposable big toes

Use the table below to answer the questions that follow.

Era	Period	MYA
Cenozoic	Quaternary	1.8
	Tertiary	65
Mesozoic	Cretaceous	144
	Jurassic	206
	Triassic	248
Paleozoic	Permian	290
	Carboniferous	354
	Devonian	417
	Silurian	443
	Ordovician	490
	Cambrian	540
Precambrian		4600

- ____ 6. Dinosaurs became extinct about 65 million years ago. When did this occur in the geologic time scale?
a. Permian period, Paleozoic era c. Tertiary period, Cenozoic era
b. Tertiary period, Cenozoic era d. Jurassic period, Mesozoic era
- ____ 7. We are presently in the ____ period of the Cenozoic era.
a. Ordovician c. Permian
b. Carboniferous d. Quaternary
- ____ 8. Humans and their ancestors have been around for about 4 million years. When did this occur in the geologic time scale?
a. Precambrian time c. Quaternary period, Cenozoic era
b. Cretaceous period, Mesozoic era d. Tertiary period, Cenozoic era

- ____ 9. Dinosaurs ruled the Earth for about 150 million years in the Mesozoic era. How many geologic periods did dinosaurs last?
- a. 3
 - b. 4
 - c. 10
 - d. 11
- ____ 10. Humans with modern features appeared about 100,000 years ago. When did this occur on the geologic time scale?
- a. Cretaceous period, Mesozoic era
 - b. Quaternary period, Cenozoic era
 - c. Precambrian time
 - d. This period does not yet exist—it is too recent.
- ____ 11. Humans with modern-day features have lived on the Earth for only about 0.002 percent of the Earth's existence. Our time here has been short when compared with
- a. the geologic time scale.
 - b. your life span.
 - c. generation time.
 - d. Cro-Magnon time.
- ____ 12. Determining whether a fossil is older or younger than other fossils found in the many layers of sedimentary rock is the ____ method of determining the age of a fossil.
- a. relative dating
 - b. fossilization
 - c. absolute dating
 - d. layers dating
- ____ 13. When atoms break down or decay, they
- a. release energy.
 - b. stabilize as a different atom.
 - c. release particles.
 - d. All of the above

A volcanic rock has a half-life of 1.3 billion years. Use this information to answer the questions that follow.

- ____ 14. How many half-lives will have occurred when only 12.5% of the sample remains unchanged?
- a. one
 - b. two
 - c. three
 - d. four
- ____ 15. Eras depicted in the geological time scale are characterized by
- a. the type of animal that dominated the Earth at the time.
 - b. the age of the Earth in increments of one billion years.
 - c. major climatic changes of the Earth.
 - d. the type of primate in existence at the time.
- ____ 16. Scientists estimate that only 1/20 of 1 percent of all species that have ever existed on Earth are living today. The other species have most likely
- a. left Earth.
 - b. become extinct.
 - c. not yet been discovered in the rain forest.
 - d. not yet been discovered in the ocean.
- ____ 17. The majority of marsupials are found in Australia. This supports the theory of
- a. Precambrian life.
 - b. relative dating.
 - c. crustal formation.
 - d. plate tectonics.
- ____ 18. Because the continents are moving at a rate of 1–10 cm per year, the continents will be ____ in 150 million years.
- a. in the same place
 - b. arranged very differently
 - c. all at the North Pole
 - d. moving much more quickly
- ____ 19. About 180 million years ago, Pangaea began to divide into two pieces, called
- a. Laurasia and Gondwanaland.
 - b. Devonian and Ordovician.
 - c. Silurian and Permian.
 - d. Devonian and Silurian.

- ____ 20. Wilson's theory of how huge pieces of crust move around the globe is called
- the Pangaea movement.
 - plate tectonics.
 - the continental ride.
 - the planetary jig.
- ____ 21. According to Wilson, the outer crust of the Earth is broken into ____ large rigid plates and several smaller ones.
- three
 - five
 - seven
 - nine
- ____ 22. Which statement best describes the Precambrian era?
- The Earth's atmosphere was rich in oxygen.
 - Violent thunderstorms and volcanic eruptions rarely occurred.
 - The sun's light could not reach Earth's surface.
 - Meteorites crashed into the Earth's surface.
- ____ 23. Earth's first pollution was
- carbon monoxide.
 - oxygen.
 - CFCs.
 - radioactive waste.
- ____ 24. Which of the following is a characteristic of cyanobacteria?
- They are photosynthetic organisms.
 - They release oxygen into the air.
 - They are anaerobic.
 - All of the above
- ____ 25. Most plants and animals that exist today probably descended from a single-celled
- hominid.
 - prokaryote.
 - eukaryote.
 - prosimian.
- ____ 26. *Paleozoic* means
- "before life."
 - "ancient life."
 - "middle life."
 - "recent life."
- ____ 27. *Cenozoic* means
- "before life."
 - "ancient life."
 - "middle life."
 - "recent life."
- ____ 28. Which of the following occurred FIRST?
- The ozone layer formed, and living things moved onto dry land.
 - Atmospheric gases and minerals in oceans combined to form molecules.
 - The first prokaryotic, anaerobic cells appeared.
 - Cyanobacteria appeared.
- ____ 29. Mastodons, saber-toothed cats, and giant ground sloths all appeared during the ____ era.
- Precambrian
 - Paleozoic
 - Mesozoic
 - Cenozoic
- ____ 30. The closest living relative of humans is thought to be the
- chimpanzee.
 - ape.
 - orangutan.
 - lemur.
- ____ 31. All hominid species are now extinct, except for the
- ape.
 - lemur.
 - present-day human.
 - Cro-Magnon.
- ____ 32. Lemurs and lorises belong to the family of ____, meaning "before monkeys."
- hominids
 - prosimians
 - australopithecines
 - Cro-Magnons
- ____ 33. Lucy, discovered in Ethiopia, had ____ and a small skull, suggesting that upright posture evolved before the brain enlarged.
- crude stone tools.
 - a vertical pelvis.
 - opposable big toes.
 - All of the above

- ____ 34. Present-day humans are classified as
- | | |
|--------------------------|-----------------------------------|
| a. <i>Homo habilis</i> . | c. <i>Homo australopithecus</i> . |
| b. <i>Homo erectus</i> . | d. <i>Homo sapiens</i> . |
- ____ 35. Which statement describes Neanderthals?
- | | |
|---------------------------------------|---------------------|
| a. They buried their dead. | c. They made fires. |
| b. They had larger brains than we do. | d. All of the above |

Completion

Complete each statement.

36. Paleontologists use _____ to estimate the age of a fossil based on the layer in which it is found. (absolute dating or relative dating)
37. Some important divisions of geologic time are marked by _____. (mass speciations or mass extinctions)
38. The first primate ancestors, called _____, appeared during the Cenozoic era. (hominids or prosimians)
39. Although _____ had thicker and heavier bones than present-day humans, they appear to be our closest ancestors. (Neanderthals or Cro-Magnons)
40. The time it takes for one-half of a radioactive sample to decay is its _____.
41. _____ are traces or imprints of living things that are preserved in rock.
42. Fossils are commonly found in _____ rock.
43. The _____ is the process by which one rock type changes into another.
44. _____ are a group of mammals that includes humans, apes, monkeys, and prosimians.
45. Walking on two legs is called _____.

Matching

Match the organisms to the time period in which they first appeared.

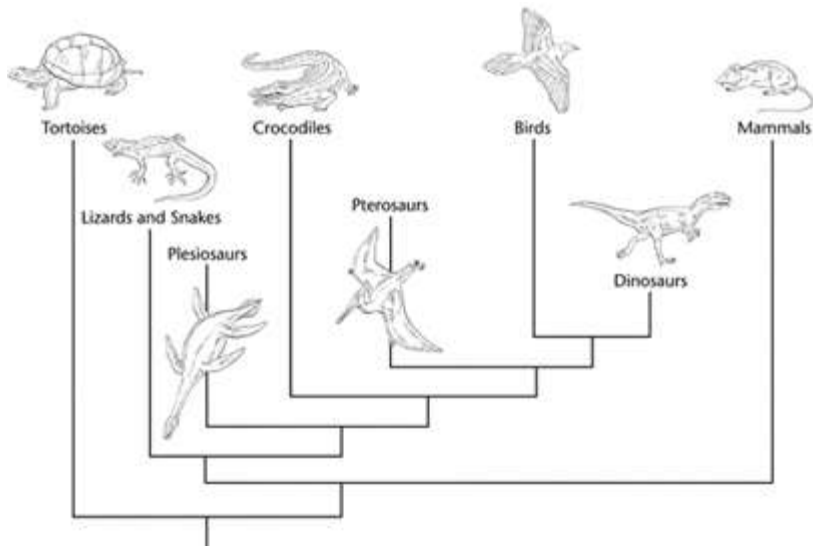
- | | |
|---------------------|-----------------|
| a. Precambrian time | c. Mesozoic Era |
| b. Paleozoic Era | d. Cenozoic Era |

- ____ 46. eukaryotes
- ____ 47. dinosaurs
- ____ 48. fishes
- ____ 49. flowering plants
- ____ 50. birds

Short Answer

51. a. What information does the geologic time scale provide?

b. What are the major divisions of time?
52. Fossils of Mesosaurus, a small aquatic lizard, have been found only in Africa and South America. Using what you know about plate tectonics, how would you explain this finding?
53. What is the main difference between the atmosphere 3.5 billion years ago and the atmosphere today?
54. Imagine you are a scientist excavating an ancient campsite. What might you conclude about the people who used the site if you found the charred bones of large animals and various stone blades among human fossils?
55. Why do scientists think the first cells were anaerobic?
56. Which occurred first in hominid evolution, an enlarged brain or the ability to walk upright? Support your answer.
57. A plant leaf imprint has been fossilized in a rock. The rock, which weighs 6 g, contains 1.5 g of an unstable form of an element and 4.5 g of the stable form of the element. The half-life of the unstable form is 1.2 million years. What is the age of the fossil? Show your work.



58. According to the diagram, which modern reptiles are most closely related to dinosaurs: tortoises, lizards and snakes, or crocodiles? Explain your reasoning.