

- 1. The early atmosphere of Earth consisted of which elements?**
 - a. Oxygen and carbon dioxide
 - b. Argon and helium
 - c. Hydrogen and helium
 - d. Silicon and oxygen
- 2. Why did Carbon Dioxide rise in the early atmosphere?**
 - a. Production from organisms
 - b. Outgassing from volcanoes
 - c. Cosmic rain
 - d. Bovine belch
- 3. When did the Great Oxygenation Event occur, approximately?**
 - a. ~2.5 Billion years ago
 - b. ~2.5 Million years ago
 - c. ~25 Million years ago
 - d. A while ago
 - e. 3.5 Billion years ago
- 4. Describe one of the prominent hypotheses for the occurrence of life on Earth:**

- 5. Fill in the blanks:** Trace fossils in rocks 3.5 _____ years old preserve biologic disturbances of sediments, known as M_____ I_____ S_____ Structures, record the existence of primitive microbes during the Archean.
- 6. The rise of Oxygen in the oceans led to the sequestration of oxygen and iron as sediments, known as:**
 - a. Iron Ore
 - b. Banded Iron Formations
 - c. Stripy-red-and-black rocks that magnets stick to
 - d. Ringed Oxygen Structures
- 7. Which material is implemental for life on earth: [check all that apply]**
 - a. Clay
 - b. Carbon (methane, carbon monoxide, and/or carbon dioxide)
 - c. Water (dihydrogen monoxide)
 - d. Sunlight (photons)
 - e. Language
- 8. What are the five criteria for mass extinctions?**

- 9.** The Devonian Mass Extinction was probably caused by:
- The rise of life on land
 - An asteroid impact
 - The rise of oxygen, a poisonous gas to many types of microbes, in the atmosphere
 - Widespread habitat loss due to anthropic development
 - Thanos wiped out half of all life on every planet using the Infinity Stones

10. In an Earth Systems Science context, which of these ‘spheres’ most recently appeared on Earth:

- Atmosphere, as it only arose as a by-product of life
- Geosphere, as it was only created here by an Ultimate life force
- Heliosphere, as it took a long time for the suns light to travel to Earth
- Biosphere, as it is a product of the interaction between the other four
- Hydrosphere, as it is an organic molecule created by life

11. Which of the Mass Extinctions discussed was the highest percentage of species annihilated?

- The Devonian Extinction
- The Jurassic-Triassic Extinction
- The Cretaceous-Paleogene Extinction
- The Anropocene-Apocalyptic Extinction
- The The End Permian Extinction (Permo-Triassic)

12. Fill in the approximate age of each Mass Extinction: (in millions of years, Ma)

- The Devonian Extinction _____
- The Jurassic-Triassic Extinction _____
- The Cretaceous-Paleogene Extinction _____
- The Anropocene-Apocalyptic Extinction – This is not an *actual* event, and just me teasing at cultural meme
- The The End Permian Extinction (Permo-Triassic) _____
- The Ordovician-Silurian Extinction _____
- The Great Oxidation Event _____

13. What is the name given to the small planetesimal that collided with Earth, leading to the formation of the moon?

- Gaia
- Theia
- Dysnomia
- Ceres
- Laurie

14. What is the relationship between Mass, distance, and gravity?

- a. These three variables are not related
- b. Mass and gravity are related, but independent on distance
- c. **Gravity increases with increasing mass and/or decreasing distance**
- d. Mass and distance are dating, and gravity is jealous

15. What is the approximate age of the Universe? Approximate age of the Earth?

- a. They are the same age, at 6021.53 years old.
- b. They are the same age, at 31.53 years old.
- c. The Universe is slightly older than the Earth, at 5.6 Billion years, while the Earth is 4.6 Billion years old.
- d. The Earth is 4.6 Billion years old, which is about 33% the age of the Universe, at 13.8 Billion
- e. The Universe is 13.8 Billion years old, while the Earth is 4.6 Million year old.

16. When did the moon-forming impact occur?

- a. 2.5 Billion years ago
- b. 542 Million years ago
- c. 4.48 Billion years ago
- d. 6.7 Billion years ago
- e. 31.7 years ago

17. A(n) _____ is a made of diffuse material in orbital motion around a massive central body.

- a. Exotic terrane
- b. Cosmic Frisbee
- c. Galaxy
- d. Accretionary disk
- e. Atomic nucleus

18. What hypothesis did Alfred Wegener propose to attribute the match of the South American and African continents?

- a. Seafloor Spreading
- b. Continental Drift
- c. Entheogenic revival
- d. Cosmic delusion
- e. Magic