

Advanced Earth Science Fundamentals

Earth Science · Practice Test · 25 Questions

1. Which layer of the Earth's atmosphere contains the ozone layer that absorbs the majority of ultraviolet radiation?

- A) Troposphere
- B) Stratosphere
- C) Mesosphere
- D) Thermosphere

2. What is the primary driver of the Earth's thermohaline circulation?

- A) Tidal forces
- B) Differences in water density
- C) Solar radiation intensity
- D) Coriolis effect

3. Which mineral is the most abundant in the Earth's continental crust?

- A) Quartz
- B) Feldspar
- C) Calcite
- D) Olivine

4. The San Andreas Fault is an example of which type of plate boundary?

- A) Divergent
- B) Convergent
- C) Transform
- D) Subduction

5. What is the chemical composition of the Earth's inner core primarily composed of?

- A) Liquid silicate
- B) Solid iron and nickel
- C) Molten magnesium
- D) Compressed oxygen

6. Which scale is used to measure the moment magnitude of earthquakes, which is more accurate for large earthquakes than the Richter scale?

- A) Mercalli scale
- B) Moment Magnitude Scale (Mw)
- C) Fujita scale
- D) Saffir-Simpson scale

7. What process involves the conversion of nitrogen gas into ammonia by bacteria in the soil?

- A) Denitrification
- B) Nitrification
- C) Nitrogen fixation
- D) Ammonification

8. The 'Great Red Spot' is a long-lived storm system on Jupiter, but on Earth, which phenomenon refers to the rotating storm system characterized by low-pressure centers?

- A) Anticyclone
- B) Cyclone
- C) Frontal boundary
- D) Isobar

9. Which epoch are we currently officially living in according to the International Commission on Stratigraphy?

- A) Anthropocene
- B) Holocene
- C) Pleistocene
- D) Pliocene

10. Which type of rock is formed from the cooling and solidification of molten magma or lava?

- A) Sedimentary
- B) Metamorphic
- C) Igneous
- D) Conglomerate

11. What is the term for the boundary that separates the crust from the mantle?

- A) Gutenberg discontinuity
- B) Mohorovicic discontinuity
- C) Lehmann discontinuity
- D) Conrad discontinuity

12. Which atmospheric gas is the most abundant by volume in Earth's dry atmosphere?

- A) Oxygen
- B) Argon
- C) Nitrogen
- D) Carbon Dioxide

13. What phenomenon is primarily responsible for the seasonal variation in Earth's temperature?

- A) Earth's distance from the Sun
- B) The tilt of Earth's axis
- C) Ocean currents
- D) Solar flare activity

14. Which layer of the Earth is liquid and believed to be responsible for the generation of the Earth's magnetic field?

- A) Inner core
- B) Outer core
- C) Lower mantle
- D) Asthenosphere

15. What is the term for the process by which water vapor is released from plants into the atmosphere?

- A) Evaporation
- B) Sublimation
- C) Transpiration
- D) Condensation

16. Which specific zone of the ocean is also known as the 'twilight zone' where sunlight is insufficient for photosynthesis?

- A) Epipelagic
- B) Mesopelagic
- C) Bathypelagic
- D) Abyssopelagic

17. What type of volcanic eruption is characterized by a violent, explosive release of ash and gas from a stratovolcano?

- A) Hawaiian
- B) Strombolian
- C) Plinian
- D) Fissure

18. Which law of stratigraphy states that in an undisturbed sequence of rocks, the oldest layers are at the bottom?

- A) Principle of superposition
- B) Principle of cross-cutting relationships
- C) Principle of original horizontality
- D) Walther's Law

19. What is the name of the supercontinent that existed approximately 335 to 175 million years ago?

- A) Gondwana
- B) Laurasia
- C) Pangaea
- D) Rodinia

20. Which geological era is known as the 'Age of Reptiles'?

- A) Paleozoic
- B) Mesozoic
- C) Cenozoic
- D) Precambrian

21. The Coriolis effect is a result of which physical property of Earth?

- A) Gravity
- B) Rotation
- C) Magnetic field
- D) Atmospheric density

22. Which term describes the total amount of water vapor in the air?

- A) Relative humidity
- B) Specific humidity
- C) Dew point
- D) Saturation vapor pressure

23. What kind of climate is typical for a region characterized by high pressure and descending air masses?

- A) Rainforest
- B) Desert
- C) Tundra
- D) Savanna

24. Which mineral has a hardness of 10 on the Mohs scale?

- A) Corundum
- B) Topaz
- C) Diamond
- D) Quartz

25. What is the primary component of Earth's crust by mass?

- A) Oxygen
- B) Silicon
- C) Aluminum
- D) Iron