**Earth System History, 4th Edition, by Steven M. Stanley and John A. Luczaj**

**Test Bank, Chapter 01**

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| 1. | Actualism is the | |
| A) | idea that the geological record provides a unique perspective on human activities. |
| B) | study of how large meteors have struck the Earth over time and thus caused mass extinctions of life. |
| C) | notion that fundamental physical principles operating today have done so throughout Earth's history. |
| D) | study of ripples in sand made by water and air movements, and how those features are always different from the ones made by water and air long ago. |
| Ans: | C |

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| 2. | The concept or philosophy of uniformitarianism is commonly summarized by saying | |
| A) | catastrophic forces dominate Earth's geological history. |
| B) | conditions existing today cannot form rocks as in the past. |
| C) | rocks cannot be made in the laboratory. |
| D) | the present is the key to the past. |
| Ans: | D |

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| 3. | We can use the principle of actualism if | |
| A) | the rocks in question formed under conditions that no longer exist. |
| B) | we can simulate or replicate the conditions under which a rock formed. |
| C) | we know that the conditions responsible for the formation of these rocks still exist, but at such great depths beneath Earth's surface that we cannot observe them. |
| D) | the conditions exist today, but produce the rocks over a long interval of geologic time. |
| Ans: | B |

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| 4. | Catastrophism is a | |
| A) | principle very similar to actualism and uniformitarianism. |
| B) | theory advanced first by a Scottish gentleman farmer named James Hutton and expounded upon by the English naturalist and author Charles Lyell. |
| C) | nineteenth-century concept that floods caused by supernatural forces formed most of the rocks that we see today on Earth's surface today. |
| D) | twentieth-century philosophy about the formation of volcanic rocks. |
| Ans: | C |

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| 5. | Central to Hutton's view of Earth's history was | |
| A) | vast geologic time. |
| B) | catastrophism. |
| C) | volcanism. |
| D) | supernatural floods. |
| Ans: | A |

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| 6. | Charles Lyell was NOT | |
| A) | the author of *Principles of Geology*, a popular 1830s geology text. |
| B) | an advocate of ideas similar to James Hutton's regarding Earth's history. |
| C) | an advocate of gradual forces in Earth's history. |
| D) | a German professor of mineralogy who promoted catastrophism. |
| Ans: | D |

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| 7. | A mineral is | |
| A) | either extrusive or intrusive. |
| B) | interlocking or bonded grains of matter. |
| C) | a naturally occurring inorganic solid element or compound. |
| D) | formed mainly of sand grains that are cemented together. |
| Ans: | C |

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| 8. | \_\_\_\_\_\_\_\_\_\_ form by the cooling of molten material to the temperature at which the molten material hardens or freezes. | |
| A) | Magmas |
| B) | Igneous rocks |
| C) | Minerals |
| D) | Sedimentary rocks |
| Ans: | B |

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| 9. | \_\_\_\_\_\_\_\_\_\_ is the collective term for the chemical and physical processes that break down rocks of any kind at Earth's surface. | |
| A) | Weathering |
| B) | Sediment |
| C) | Erosion |
| D) | Lithification |
| Ans: | A |

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| 10. | In the sedimentary debris generated by the breakdown of preexisting rocks, the most common grains are | |
| A) | bits of broken sea shells. |
| B) | particles of sand and clay. |
| C) | salts precipitated from seawater. |
| D) | clay minerals derived from feldspars. |
| Ans: | B |

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| 11. | Sedimentary rocks made of the fragments of skeletons of once-living organisms are called | |
| A) | shale. |
| B) | limestone. |
| C) | sandstone. |
| D) | crystalline rock. |
| Ans: | B |

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| 12. | The arrangement of sedimentary rocks in discrete layers is called | |
| A) | metamorphism. |
| B) | lithification. |
| C) | cementation. |
| D) | stratification. |
| Ans: | D |

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| 13. | A \_\_\_\_\_\_\_\_\_\_ is a discrete body of rock of a particular type that formed in a particular way. | |
| A) | group |
| B) | supergroup |
| C) | formation |
| D) | member |
| Ans: | C |

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| 14. | Steno's second principle says that | |
| A) | the laws of nature are inviolable and have not changed with time. |
| B) | originally, all strata are horizontal when they form. |
| C) | the oldest strata lie at the bottom of a succession of layers and that successively higher strata are progressively younger. |
| D) | similar rocks that seem once to have been connected usually are. |
| Ans: | B |

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| 15. | The principle of cross-cutting relationships states that | |
| A) | intrusive igneous rock is always younger than the rock it invades. |
| B) | any structure, such as a fault, that cuts through a sequence of preexisting rocks must be younger than the host rocks. |
| C) | fragments of one body of rock are found within another body of rock. |
| D) | rock may be melted to form magma that later cools to form intrusive igneous rock. |
| Ans: | B |

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| 16. | The natural ordering known as fossil succession | |
| A) | cannot be used to establish the relative age of rocks that lie far apart. |
| B) | was one of the few things that eighteenth-century surveyor William Smith did not notice about the fossils he collected. |
| C) | reflects the sequence of organic evolution and extinction through time. |
| D) | has to do with the characteristics of trilobites from the Early, Middle, and Late Cambrian Periods. |
| Ans: | C |

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| 17. | Naturally occurring radioactive materials | |
| A) | decay into other materials at variable rates. |
| B) | provide us with good estimates of the actual ages of ancient rocks. |
| C) | are produced annually, like similar to rings in a tree trunk. |
| D) | establish relative ages of rocks on a global scale, but only in rocks with abundant fossils. |
| Ans: | B |

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| 18. | Eras are divided into formal units called | |
| A) | eras. |
| B) | epochs. |
| C) | periods. |
| D) | ages. |
| Ans: | C |

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| 19. | Which of the following is NOT an era in the Phanerozoic? | |
| A) | Cenozoic |
| B) | Mesozoic |
| C) | Paleozoic |
| D) | Proterozoic |
| Ans: | D |

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| 20. | The thickest chalk deposits in the world are found in which geological system? | |
| A) | Cambrian |
| B) | Carboniferous |
| C) | Cretaceous |
| D) | Triassic |
| Ans: | C |

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| 21. | The body of rock recognized in 1835 as representing the oldest system in what we call today the Phanerozoic is called | |
| A) | Devonian. |
| B) | Silurian. |
| C) | Ordovician. |
| D) | Cambrian. |
| Ans: | D |

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| 22. | An earthquake always begins at | |
| A) | the Moho. |
| B) | a focus. |
| C) | the base of the Earth's crust. |
| D) | the top of the Earth's mantle. |
| Ans: | B |

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| 23. | Ultramafic rocks make up Earth's | |
| A) | continental crust. |
| B) | oceanic crust. |
| C) | mantle. |
| D) | core. |
| Ans: | C |

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| 24. | \_\_\_\_\_\_\_\_\_\_ is the process in which material that is heated deep within the asthenosphere rises to displace cooler, less dense material near the surface. | |
| A) | Convection |
| B) | Subduction |
| C) | Mountain building |
| D) | Divergence |
| Ans: | A |

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| 25. | The location of the most powerful earthquakes that occur deep within the Earth is | |
| A) | at the Mid-Atlantic ridge. |
| B) | on the western edge of Africa. |
| C) | on the western edge of South America. |
| D) | on the eastern edge of Africa. |
| Ans: | C |

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| 26. | The largest reservoir for water on Earth is in | |
| A) | glaciers and ground ice. |
| B) | groundwater (both saline and fresh). |
| C) | oceans. |
| D) | Earth's atmosphere. |
| Ans: | C |

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| 27. | Darwin provided evidence that showed life has evolved even without | |
| A) | changes in the physical environment. |
| B) | the vast span of geological time. |
| C) | any process akin to organic evolution. |
| D) | preservation of the sequence of parent and descendant species in the rock record. |
| Ans: | A |

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| 28. | An ecosystem is | |
| A) | a cyclical change in Earth's history. |
| B) | the direction and the nature of change in Earth's history. |
| C) | an environment and the organisms within it. |
| D) | a group of fossil organisms. |
| Ans: | C |

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| 29. | Which phrase below does NOT best describe the whole stratigraphic record? | |
| A) | Sedimentation can occur in pulses. |
| B) | It displays evidence of episodic deposition. |
| C) | Deposition can be catastrophic. |
| D) | It contains few, if any, gaps in sedimentation. |
| Ans: | D |

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| 30. | A type of unconformity, with eroded crystalline rock below it, is called a | |
| A) | disconformity. |
| B) | nonconformity. |
| C) | angular unconformity. |
| D) | mass extinction. |
| Ans: | B |