|  |  |
| --- | --- |
| **1.** |  |
|  | |  |  | | --- | --- | | Concerning the Permo-Triassic extinction, which of the following statements is FALSE? | | |  | | | |  | **Student Response** | **Value** | **Correct Answer** | **Feedback** | | --- | --- | --- | --- | --- | | A. | The Siberian Traps may have contributed to the mass extinction event. |  |  |  | | Student Response B. | Over 95% of all species became extinct. | 0% |  |  | | C. | Trilobites went into extinction. |  |  |  | | D. | The extinction was largely restricted to land based creatures. |  | Student Response |  | | E. | The continents were grouped together in a land mass called Pangea. |  |  |  | | | | Score: | 0/1 | |  | | |
| **2.** |  |
|  | |  |  | | --- | --- | | Which of the following CORRECTLY states Steno’s Principle of Superposition? | | |  | | | |  | **Student Response** | **Value** | **Correct Answer** | **Feedback** | | --- | --- | --- | --- | --- | | A. | Fossils can be used to characterize certain geological strata (layers). |  |  |  | | Student Response B. | A sedimentary layer is older than the one above it. | 100% | Student Response |  | | C. | Fossils from different parts of the world will show no similarities. |  |  |  | | D. | Sedimentary rocks can be used for correlation. |  |  |  | | E. | Rocks over 500 million years old contain no sedimentary rocks. |  |  |  | | | | Score: | 1/1 | |  | | |
| **3.** |  |
|  | |  |  | | --- | --- | | Approximately how many objects enter the Earth’s atmosphere over 24 hours? | | |  | | | |  | **Student Response** | **Value** | **Correct Answer** | **Feedback** | | --- | --- | --- | --- | --- | | A. | 5 |  |  |  | | B. | 10 |  |  |  | | C. | 100 |  |  |  | | Student Response D. | 1000 | 0% |  |  | | E. | 100,000 million |  | Student Response |  | | | | Score: | 0/1 | |  | | |
| **4.** |  |
|  | |  |  | | --- | --- | | What was one of most important contributions by William Smith to Biostratigraphy? | | |  | | | |  | **Student Response** | **Value** | **Correct Answer** | **Feedback** | | --- | --- | --- | --- | --- | | A. | fossils from different parts of the world will show no similarities |  |  |  | | Student Response B. | fossils can be used to characterize certain geological strata | 100% | Student Response |  | | C. | rocks over 500 million years old contain no fossils |  |  |  | | D. | fossils are creatures that have become extinct |  |  |  | | E. | fossil mammoths once existed in Europe |  |  |  | | | | Score: | 1/1 | |  | | |
| **5.** |  |
|  | |  |  | | --- | --- | | An impact event in the 20th century that could have caused a mass extinction on Earth (if it hit us) occurred in \_\_\_\_\_\_\_\_\_. | | |  | | | |  | **Student Response** | **Value** | **Correct Answer** | **Feedback** | | --- | --- | --- | --- | --- | | A. | the Sun |  |  |  | | B. | Yucatan |  |  |  | | C. | Mars |  |  |  | | D. | Siberia |  |  |  | | Student Response E. | Jupiter | 100% | Student Response |  | | | | Score: | 1/1 | |  | | |
| **6.** |  |
|  | |  |  | | --- | --- | | In terms of area, how large were the impact marks caused by the collision of Comet Shoemaker-Levy 9 on the surface of Jupiter? | | |  | | | |  | **Student Response** | **Value** | **Correct Answer** | **Feedback** | | --- | --- | --- | --- | --- | | A. | around the size of B.C. |  |  |  | | Student Response B. | 5 times the size of the Chicxulub impact | 0% |  |  | | C. | 2 times the size of the Chicxulub impact |  |  |  | | D. | around the size of Texas |  |  |  | | E. | around the size of the Earth |  | Student Response |  | | | | Score: | 0/1 | |  | | |
| **7.** |  |
|  | |  |  | | --- | --- | | What is the significance of high levels of iridium in Late Cretaceous sediments? | | |  | | | |  | **Student Response** | **Value** | **Correct Answer** | **Feedback** | | --- | --- | --- | --- | --- | | A. | It supported the idea that global fires occurred in the Late Cretaceous, contributing to the mass extinction. |  |  |  | | B. | It was evidence that large-scale earthquakes did not contribute to the K/T extinction. |  |  |  | | Student Response C. | It supports the idea that an extraterrestrial object collided with the Earth at that time, contributing to a mass extinction. | 100% | Student Response |  | | D. | It is proof that the Late Cretaceous biosphere was stressed by iridium contamination prior to the K/T extinction. |  |  |  | | E. | It proved that the K/T meteorite crater was in the Northern Hemisphere. |  |  |  | | | | Score: | 1/1 | |  | | |
| **8.** |  |
|  | |  |  | | --- | --- | | Which of the following would be the MOST EFFECTIVE way to cause a mass extinction today? | | |  | | | |  | **Student Response** | **Value** | **Correct Answer** | **Feedback** | | --- | --- | --- | --- | --- | | A. | Acidify major inland lakes. |  |  |  | | Student Response B. | Exterminate the majority of the biota at the base of the food chain. | 100% | Student Response |  | | C. | Exterminate all top predators in North America. |  |  |  | | D. | Cut down deciduous trees (those that lose all of their leaves for part of the year). |  |  |  | | E. | Stop fertilizing farm fields. |  |  |  | | | | Score: | 1/1 | |  | | |
| **9.** |  |
|  | |  |  | | --- | --- | | Which of the following features of the planet Jupiter has probably aided the development of life on Earth? | | |  | | | |  | **Student Response** | **Value** | **Correct Answer** | **Feedback** | | --- | --- | --- | --- | --- | | A. | acts as a large gravity well |  | Student Response |  | | B. | methane in its upper atmosphere |  |  |  | | C. | amino acids in its upper atmosphere |  |  |  | | D. | intense radiation belts |  |  |  | | Student Response E. | turbulent atmosphere | 0% |  |  | | | | Score: | 0/1 | |  | | |
| **10.** |  |
|  | |  |  | | --- | --- | | Which of the following BEST describes the biosphere? | | |  | | | |  | **Student Response** | **Value** | **Correct Answer** | **Feedback** | | --- | --- | --- | --- | --- | | Student Response A. | A way of considering life and its interaction with the solid Earth, the oceans and the atmosphere. | 100% | Student Response |  | | B. | A complex web of creatures that came into being towards the end of the Permian 250 million years before present. |  |  |  | | C. | A spherical zone surrounding the sun that describes the distance at which it is possible for life to exist and evolve. |  |  |  | | D. | A grouping of animals on the Earth’s surface. |  |  |  | | E. | A complex interaction of marine creatures that is built upon the base of the food chain represented by plankton. |  |  |  | | | | Score: | 1/1 | |  | | |
| **11.** |  |
|  | |  |  | | --- | --- | | How did Ussher determine the age of the Earth? | | |  | | | |  | **Student Response** | **Value** | **Correct Answer** | **Feedback** | | --- | --- | --- | --- | --- | | A. | He based it on a careful examination of the biostratigraphy of dinosaurs and other Mesozoic creatures. |  |  |  | | Student Response B. | He used information from the thickness of ocean sediments and the rates these are being deposited today. | 0% |  |  | | C. | He based it on the life span of all the creatures thought to have existed since the Cambrian. |  |  |  | | D. | He based it on the difference between age of craters on Mercury and Mars and those found on the Earth and the Moon. |  |  |  | | E. | He used information from the Bible. |  | Student Response |  | | | | Score: | 0/1 | |  | | |
| **12.** |  |
|  | |  |  | | --- | --- | | In preventing an impact from space, which is the MOST important factor? | | |  | | | |  | **Student Response** | **Value** | **Correct Answer** | **Feedback** | | --- | --- | --- | --- | --- | | A. | covering the asteroid or comet in a sufficiently reflective material to permit "solar wind pushing" |  |  |  | | B. | understanding the composition of the comet or asteroid |  |  |  | | Student Response C. | ensuring fragments will not be generated if the impacting body is exploded using nuclear warheads | 0% |  |  | | D. | having enough warning of the approaching asteroid or comet |  | Student Response |  | | E. | development of high powered "space lasers" that could be used in steady state orbit adjustment |  |  |  | | | | Score: | 0/1 | |  | | |
| **13.** |  |
|  | |  |  | | --- | --- | | Which of the following best describes the LONGER-TERM (years to decades) effect of the Chicxulub impact on global climate? | | |  | | | |  | **Student Response** | **Value** | **Correct Answer** | **Feedback** | | --- | --- | --- | --- | --- | | A. | Icehouse conditions resulting in the formation of glaciers |  |  |  | | B. | extremes of cold winters and hot summers |  |  |  | | Student Response C. | greenhouse conditions with elevated levels of water vapour and CO2 in the atmosphere | 100% | Student Response |  | | D. | back to normal, no change in temperature and climate |  |  |  | | E. | "nuclear winter" caused by greenhouse gasses such as CO2 |  |  |  | | | | Score: | 1/1 | |  | | |
| **14.** |  |
|  | |  |  | | --- | --- | | Why does the Earth NOT have an impact-scarred surface like the Moon? | | |  | | | |  | **Student Response** | **Value** | **Correct Answer** | **Feedback** | | --- | --- | --- | --- | --- | | A. | The Earth is slightly older than the Moon. |  |  |  | | Student Response B. | Earth's surface has undergone change and continental reconfiguration. | 100% | Student Response |  | | C. | The Moon's atmosphere attracts the majority of large space debris. |  |  |  | | D. | The Earth has experienced less impacts than the Moon. |  |  |  | | E. | The Earth is larger and has a stronger gravitational field. |  |  |  | | | | Score: | 1/1 | |  | | |
| **15.** |  |
|  | |  |  | | --- | --- | | How large was the object that impacted the Earth at the end of the Cretaceous? About the same size as \_\_\_\_\_\_. | | |  | | | |  | **Student Response** | **Value** | **Correct Answer** | **Feedback** | | --- | --- | --- | --- | --- | | Student Response A. | Mount Everest | 100% | Student Response |  | | B. | B.C. |  |  |  | | C. | UBC campus |  |  |  | | D. | a 1-bedroom cottage |  |  |  | | E. | the Pacific Ocean |  |  |  | | | | Score: | 1/1 | |  | | |
| **16.** |  |
|  | |  |  | | --- | --- | | Which of the following likely contributed to the significant increase in greenhouse gases in the atmosphere in the Late Cretaceous? | | |  | | | |  | **Student Response** | **Value** | **Correct Answer** | **Feedback** | | --- | --- | --- | --- | --- | | Student Response A. | chemical reactions which destroyed the ozone layer | 0% |  |  | | B. | formation of limestone CaCO3 in the oceans |  |  |  | | C. | global-scale fires |  |  |  | | D. | emission of volcanic gases |  | Student Response |  | | E. | vaporization of basalt rock |  |  |  | | | | Score: | 0/1 | |  | | |
| **17.** |  |
|  | |  |  | | --- | --- | | Which of the following is currently NOT a feasible plan to prevent a meteor impact on Earth? | | |  | | | |  | **Student Response** | **Value** | **Correct Answer** | **Feedback** | | --- | --- | --- | --- | --- | | A. | Destroy it with nuclear weapons. |  |  |  | | B. | Destroy it with enormous space mirrors. |  |  |  | | Student Response C. | Mine it to remove material, which would shift its orbit. | 0% |  |  | | D. | Attach an engine and nudge the object from its orbit. |  |  |  | | E. | All of the above are NOT feasible. |  | Student Response |  | | | | Score: | 0/1 | |  | | |
| **18.** |  |
|  | |  |  | | --- | --- | | Scientists believe that the sixth major mass extinction is on-going. Which of the following is the most LIKELY cause? | | |  | | | |  | **Student Response** | **Value** | **Correct Answer** | **Feedback** | | --- | --- | --- | --- | --- | | A. | global warming |  |  |  | | B. | less continental fragmentation |  |  |  | | C. | humans |  | Student Response |  | | D. | unknown viruses and other dieseases |  |  |  | | Student Response E. | sea-level rise | 0% |  |  | | | | Score: | 0/1 | |  | | |
| **19.** |  |
|  | |  |  | | --- | --- | | The evolution of new species following a mass extinction is called \_\_\_\_\_\_. | | |  | | | |  | **Student Response** | **Value** | **Correct Answer** | **Feedback** | | --- | --- | --- | --- | --- | | A. | a radiation |  | Student Response |  | | B. | a biosphere |  |  |  | | Student Response C. | an impact event | 0% |  |  | | D. | a fossil range |  |  |  | | E. | a period |  |  |  | | | | Score: | 0/1 | |  | | |
| **20.** |  |
|  | |  |  | | --- | --- | | A \_\_\_\_\_\_ is an extraterrestrial object that enters the Earth’s atmosphere. | | |  | | | |  | **Student Response** | **Value** | **Correct Answer** | **Feedback** | | --- | --- | --- | --- | --- | | A. | meteorist |  |  |  | | B. | meteoroid |  |  |  | | C. | meteorite |  |  |  | | D. | meteorologist |  |  |  | | Student Response E. | meteor | 100% | Student Response |  | | | | Score: | 1/1 | |  | | |
| **21.** |  |
|  | |  |  | | --- | --- | | What are TEKTITES? | | |  | | | |  | **Student Response** | **Value** | **Correct Answer** | **Feedback** | | --- | --- | --- | --- | --- | | A. | a sedimentary rock that can be formed by concentration of elements present in sea water |  |  |  | | Student Response B. | sedimentary rocks composed of the bones and shells of sea creatures | 0% |  |  | | C. | evidence that rock has been melted during an impact event |  | Student Response |  | | D. | a type of sedimentary rock deposited following a tsunami |  |  |  | | E. | a type of rock that is stressed/compressed by impact |  |  |  | | | | Score: | 0/1 | |  | | |
| **22.** |  |
|  | |  |  | | --- | --- | | Which of the following statements about the Principle of Superposition is FALSE? | | |  | | | |  | **Student Response** | **Value** | **Correct Answer** | **Feedback** | | --- | --- | --- | --- | --- | | A. | Sediments are deposited in sequence from OLDEST to YOUNGEST. |  |  |  | | B. | The YOUNGEST rock in a section of undisturbed layered sediments will be at the TOP. |  |  |  | | C. | Horizontal sedimentary rocks are deposited from OLDEST to YOUNGEST. |  |  |  | | Student Response D. | Sediments are deposited in sequence from YOUNGEST to OLDEST. | 100% | Student Response |  | | E. | The OLDEST rock in a section of undisturbed layered sediments will be at the BOTTOM. |  |  |  | | | | Score: | 1/1 | |  | | |
| **23.** |  |
|  | |  |  | | --- | --- | | Under the conditions defined in the lecture notes, which of the following could be described as a MASS extinction event? | | |  | | | |  | **Student Response** | **Value** | **Correct Answer** | **Feedback** | | --- | --- | --- | --- | --- | | A. | Extinction of 40% of species in a coral reef environment. |  |  |  | | B. | Extinction of all species of daisy. |  |  |  | | Student Response C. | Extinction of 55% of Earth’s species over a 20 million year period. | 0% |  |  | | D. | Extinction of 20% species over a 10 000 year period. |  |  |  | | E. | Extinction of 35% of species over a 50 000 year period. |  | Student Response |  | | | | Score: | 0/1 | |  | | |
| **24.** |  |
|  | |  |  | | --- | --- | | The greatest mass extinction Earth has experienced occurred at the \_\_\_\_\_\_\_\_ boundary. | | |  | | | |  | **Student Response** | **Value** | **Correct Answer** | **Feedback** | | --- | --- | --- | --- | --- | | A. | Permo/Triassic |  | Student Response |  | | B. | Devonian/Silurian |  |  |  | | Student Response C. | Cretaceous/Tertiary | 0% |  |  | | D. | Precambrian/Cambrian |  |  |  | | E. | Triassic/Jurassic |  |  |  | | | | Score: | 0/1 | |  | | |
| **25.** |  |
|  | |  |  | | --- | --- | | What kind of damage to the biosphere would the comet Shoemaker Levy 9 have caused if it had hit Earth? | | |  | | | |  | **Student Response** | **Value** | **Correct Answer** | **Feedback** | | --- | --- | --- | --- | --- | | A. | many times more severe than the K/T extinction event |  | Student Response |  | | B. | more damage in the oceans than on land |  |  |  | | Student Response C. | equivalent to the K/T extinction event | 0% |  |  | | D. | destroyed all mammalian life |  |  |  | | E. | anything smaller than 25 kg would probably survive |  |  |  | | | | Score: | 0/1 | |  | | |