

Name _____

MULTIPLE CHOICE. Choose the one alternative that best completes the statement or answers the question.

- 1) The word "Geology" is derived from Greek meaning _____. 1) _____
A) discourse of the Earth B) the logic of rocks
C) geographic theology D) rocks form all lands
- 2) _____ involves the study of Earth's origin and development through time based on sequences of strata, fossils, and geologic events, utilizing the geologic time scale as a reference. 2) _____
A) uniformitarianism B) historical geology
C) catastrophism D) physical geology
- 3) _____ includes the study of how rocks and minerals form and change according to immutable physical, chemical, and biologic processes which affect everything from Earth's internal structures and tectonic plates to landscape evolution and crystal forms. 3) _____
A) Physical geology
B) Catastrophism
C) Teleology
D) Historical geology
E) Manifest destiny
- 4) The principle goal of physical geology is to study _____. 4) _____
A) Earth's evolution with time.
B) ongoing natural processes and the products they create.
C) physical processes that affect the earth and its resources as opposed to chemical or biologic processes.
D) mankind and the environment.
- 5) _____ is the second, broad area of geologic science after physical geology. 5) _____
A) Historical geology B) Mineralogy
C) Oceanography D) Meteorology
- 6) Sir William Edmond Logan was appointed the first Director of The Geological Survey of Canada in 1842 and is noted for his observations and maps of _____. 6) _____
A) copper deposits in the Eastern townships
B) coal bearing strata around Swansea, Wales
C) coal measures at Joggins, Nova Scotia
D) igneous and metamorphic rocks around Lake's Temiskaming, Huron, and Superior
E) all of the above
- 7) Canada's highest mountain is _____. 7) _____
A) Mount Washington on Vancouver Island
B) Mount Chingcousy in Brampton, Ontario
C) Mount Rundle in the Canadian Rockies
D) Mount Waddington in the Coast Mountains of B.C.
E) Mount Logan 5959 m elevation in the southwest corner of Yukon

- 8) In geologic theory, volcanic eruptions, earthquakes, landslides, floods and tsunamis are all _____ 8) _____
- A)** naturally recurring geologic hazards from ongoing physical processes
 - B) divine punishments sent to discourage us of our evil ways
 - C) unique phenomena that can neither be predicted nor understood
 - D) exceptions to the theory of uniformitarianism
- 9) A *geologic* understanding of natural resources includes _____ of extraction or usage for water, soil, metallic, non-metallic, and energy resources. 9) _____
- A) the current corporate or political objective and most expedient means
 - B) the economic value and geographic location
 - C) the size of deposits and cost
 - D)** the conditions of formation and the environmental impact
- 10) The Earth's human population now is best described by which one of the following statements? 10) _____
- A) increasing very rapidly in advanced, western countries and falling rapidly in third-world areas such as Latin America and Africa
 - B)** larger than it has ever been and increasing at a very high rate
 - C) just beginning to approach the world's population before the Second World War
 - D) larger than it has ever been but will stabilize within the next 10 years
- 11) Which one of the following is a logical consequence of the rapidly growing human population? 11) _____
- A) Terrestrial, aquatic, and marine habitats will be unaffected by the rapid growth.
 - B) Everybody will have much more fun because parties will be larger and more frequent.
 - C)** Competition for nonrenewable natural resources will intensify.
 - D) Reduced government regulation and spending and the application of new technologies will increase living standards and lessen environmental concerns.
- 12) The biggest driving force for natural resource development is _____. 12) _____
- A) local needs for employment and viable industry
 - B)** exponential population increase and human expectations for goods and profits
 - C) the size of the deposit
 - D) finding local deposits to meet each country's needs
- 13) The world population is currently growing at about + _____ people per year. 13) _____
- A) 10 billion
 - B)** 100 million
 - C) 10 million
 - D) 1 billion
- 14) Why is Mt. Vesuvius considered so hazardous? 14) _____
- A) People fear that it may imminently repeat the type of ash eruptions that buried Pompeii and Herculaneum in AD 79.
 - B) It is made of very steep unstable ash deposits that are always generating landslides.
 - C) It is constantly erupting.
 - D)** The city and Bay of Naples surrounds it so that any renewal of activity threatens people.
- 15) The inference that the Earth had been created in 4004 B.C. was attributed to James Ussher who _____ 15) _____
- A) was a religious crackpot whom nobody believed
 - B) was the Irish geologist to first attempt absolute dating of rocks
 - C) had this revealed to him by the Archangel Gabriel in a divine dream
 - D)** carefully counted the generations and "begats" in the Bible

- 16) _____ used the Bible to calculate that the Earth was created in 4004 B.C. 16) _____
 A) Father Hutton B) Saint Torquemada
 C) Bishop Ussher D) Brother Lyell
- 17) Compared to the age of Earth accepted as correct today, how did 17th and 18th century proponents of catastrophism envision the Earth's age? 17) _____
 A) They accepted Bishop Ussher's calculation but explained the differences in landforms and geology by violent catastrophes.
 B) They believed Earth to be a few hundred years younger than it really is.
 C) They believed Earth to be much older than it really is.
 D) They were right on the money, give or take a few million years.
- 18) In geologic theory, volcanic eruptions, earthquakes, landslides, floods, and tsunamis are all _____ 18) _____
 A) exceptions to the theory of uniformitarianism
 B) divine punishments sent to discourage us of our evil ways
 C) naturally recurring geological hazards from ongoing physical processes
 D) unique phenomena that can neither be predicted nor understood
- 19) The idea that all of the tremendous geologic changes in Earth's history were concentrated in a few brief millennia is termed _____. 19) _____
 A) catastrophism B) Ussherism
 C) gradualism D) uniformitarianism
- 20) _____, a popular natural philosophy of the 17th and early 18th centuries, was based on a firm belief in a very short geologic history for Earth. 20) _____
 A) Uniformitarianism B) Catastrophism
 C) Ecospherism D) Exoschism
- 21) Which one of the following observations and inferences is most consistent with the idea of uniformitarianism? 21) _____
 A) The number of erupting volcanoes is constant throughout geologic time, so this is not a big influence on changing climates.
 B) Sand rolls along a stream bottom at the same rate every hour, every day, year in, year out.
 C) Mountains are dissolved and/or eroded mechanically one ion and one mineral grain at a time and carried down to the sea.
 D) Meteorite impacts always occur at regular intervals and this has forced biologic evolution.
- 22) _____ is often paraphrased as "the present is the key to the past." 22) _____
 A) Biblical prophecy B) Catastrophism
 C) Uniformitarianism D) Aristotelian logic
- 23) "The physical, chemical and biological processes that operate today have operated throughout geologic time" is a restatement of James Hutton's theory of _____. 23) _____
 A) recidivism B) uniformitarianism
 C) gradualism D) catastrophism

- 24) "The present is the key to the past." Is the uniformitarian concept that _____. 24) _____
 A) rivers, seas, mountains, etc. are perpetual features of an unchanging landscape
 B) each mountain that is eroding today to produce river sediment has always done so
 C) the rates of geologic processes (erosion, sedimentation, volcanism) are invariant
D) geologic processes give rise to the same types of products and features
- 25) _____ was an a Scottish physician and farmer who wrote Theory of the Earth and is credited 25) _____
 with being the father of modern geology because he was the first to promote the theories of
 uniformitarianism and the vastness of geologic time.
A) James Hutton B) James Ussher C) William Stokes D) Charles Lyell
- 26) _____ was the first to clearly formulate the concept of uniformitarianism. 26) _____
 A) Charles Playfair **B) James Hutton**
 C) Charles Darwin D) Sir James Ussher
- 27) Most geologic processes like erosion, sedimentation, uplift, and plate motion _____. 27) _____
 A) take place gradually but don't add up to much change in the long run
 B) take place during cataclysmic floods and violent upheavals that transform Earth
C) take place gradually but given the vastness of geologic time add up to big effects
 D) occur quickly in fits and starts, but mostly nothing is happening
- 28) The acceptance of the 18th century concept of uniformitarianism inevitably led to the acceptance of 28) _____
 _____.
 A) a geologic evolution for Earth that was free from catastrophes
 B) Darwin's theory of evolution
 C) Ussher's calculations
D) an extremely old age for the Earth
- 29) Compared to the age of the Universe of 13.7 billion years, the currently accepted age of Earth is 29) _____
 about _____ years as determined by using radioactivity for dating rocks and minerals.
 A) 13.7 billion
 B) 5.4 trillion
 C) 4.6 thousand
 D) 5.4 million
E) 4.6 billion
- 30) Which of the following is closest to the currently accepted age of the Earth? 30) _____
 A) 5 million years B) 100,000 years C) 10 billion years **D) 5 billion years**
- 31) Which of the following best describes the fundamental concept of superposition? 31) _____
 A) Older strata generally are deposited on younger strata without intervening, intermediate age
 strata.
B) Any sedimentary deposit accumulates on older rock or sediment layers.
 C) Older fossils in younger strata indicate a locally inverted geologic time scale.
 D) Strata with fossils are generally deposited on strata with no fossils.

- 32) The law of superposition establishes _____. 32) _____
 A) the oldest deposits are always on top
B) the relative ages in a layered sedimentary or volcanic sequence
 C) why the oldest rocks are never found in the bottoms of deep canyons
 D) the absolute age of any strata
- 33) That fossil organisms succeed one another in an orderly and definite sequence is _____. 33) _____
 A) the Phanerozoic principal **B) the principal of fossil succession**
 C) the law of the geologic time scale D) the law of superposition
- 34) The _____ division of the geologic time scale is an era of the Phanerozoic Eon. 34) _____
A) Paleozoic B) Permian C) Paleocene D) Proterozoic
- 35) The Phanerozoic Eon corresponding to the age of complex multicellular life as recorded in fossils encompasses _____. 35) _____
 A) the first 4.6 billion years of Earth history
 B) only the first 50 million years of the Cambrian Period
C) roughly the last 12% of Earth history
 D) only the latest 56 million years of Earth history
- 36) Fossils of armour headed fishes and trilobites would be found in marine sedimentary rocks of _____. 36) _____
A) the lower part of the Paleozoic Era B) the Carboniferous Period
 C) the Mesozoic Era D) the Proterozoic Eon
- 37) The Precambrian (Hadean, Archean and Proterozoic Eons) accounts for _____. 37) _____
A) the first 88% of Earth history and the geologic time scale
 B) all of the periods after the Permian
 C) the segment of geologic time prior to uniformitarianism taking effect
 D) the first 8% of Earth history
- 38) Which sequence is in the correct order through time for "fossil succession" assuming strata successively from: Late Precambrian, Cambrian, Silurian, Jurassic, Tertiary 38) _____
 A) land plants, insects, marine plants, trilobites, humans
B) multicelled organisms, hardbodied marine invertebrates, first land plants, dinosaurs, mammals
 C) one celled organisms, first fishes, first amphibians, reptiles, dinosaurs
 D) flowering plants, birds, reptiles, first trees, first fishes, blue green algae
- 39) The _____ theory is the leading hypothesis that describes the formation of the Sun, Earth, and other planets of the solar system. 39) _____
 A) astrostellar B) planoassembler
 C) solar flareup **D) nebular**
- 40) The _____ proposes that the bodies of our solar system formed at essentially the same time from a rotating cloud of gases and dust. 40) _____
 A) Plate Tectonics theory B) Heliocentric theory
C) Nebular hypothesis D) Big Bang theory

- 41) Early during Earth's history what two things contributed heat that led to the internal melting and formation of the core? 41) _____
 A) chemical reactions between early unstable elements
 B) a hotter proto-sun and the burning off of Earth's early hydrogen atmosphere
 C) tidal forces and friction between moving unconsolidated meteorite debris
D) kinetic energy of impacts from nebular debris and decay of radioactive elements
- 42) The Earth's core was formed from _____. 42) _____
 A) high density radioactive carbon
B) molten iron and nickel that separated from silicates and sank due to its higher density
 C) a massive nickel iron asteroid that was the nucleus upon which Earth condensed
 D) the left over nickel and iron that would not fit into the earlier formed crust and mantle
- 43) The early geologic process that formed the primitive: atmosphere, crust, mantle and core within the first few million years of Earth history was _____. 43) _____
A) chemical differentiation or segregation B) absorption
 C) meltdown D) stratification
- 44) Pangaea was _____. 44) _____
A) a super continent that formed in the late Paleozoic and broke apart in Triassic time
 B) a huge mountain range formed when Africa pushed northward into Europe in Eocene time
 C) a large, Precambrian shield area in Africa and South America that broke apart late in the Proterozoic Eon
 D) a large, ocean basin that opened in the Triassic and closed in the Paleocene
- 45) In the early part of the 20th century, _____ argued forcefully for continental drift. 45) _____
 A) Alfred the Great B) Karl Wagner
 C) Edwin Rommel **D) Alfred Wegener**
- 46) Wegener's supercontinent that began to break up about 200 million years ago was named _____. 46) _____
 A) Rodinia **B) Pangaea**
 C) Gondwanaland D) Laurasia
- 47) _____ was never proposed as evidence supporting the existence of the Pangaea supercontinent. 47) _____
 A) Late Paleozoic glacial features
 B) Geometric fit between South America and Africa
C) Islands of Proterozoic rocks along the Mid-Atlantic Ridge
 D) The Glossopteris flora
- 48) Why did Sir Edward Bullard's 1960's fit of the 900 m bathymetric contour show some areas of overlap between South America and Africa ? 48) _____
A) large volumes of sediment have accumulated in the deltas and fans from the Congo, Amazon, Parana and Rio de Plata rivers to outbuild the continental shelves and slopes
 B) the work was actually done by a graduate student and Bullard never checked the details before he published it
 C) inaccurate bathymetry was all that was available to him prior to our modern multibeam sonar techniques
 D) massive erosion has modified the entire coastlines since 200 Ma so it is a wonder they still fit so well

- 56) According to Wegener, where was southern Africa located during the Late Paleozoic? 56) _____
 A) 30° south of the equator B) up by the north pole
C) over the south pole D) along the equator
- 57) Tethys was _____. 57) _____
 A) a large, Precambrian shield area in Africa and South America that broke apart late in the Proterozoic Eon
 B) a huge mountain range formed when Africa pushed northward into Europe in Eocene time
 C) a super continent that formed in the late Paleozoic and broke apart in Triassic time
D) a large, ocean basin that opened in the Triassic and closed in the Paleocene
- 58) Today, of all the continents, _____ is closest to the same geographic position it occupied during the Late Paleozoic. 58) _____
A) Antarctica B) Australia C) South America D) India
- 59) The _____ forms the relatively cool, brittle plates of plate tectonics. 59) _____
 A) eosphere B) asthenosphere C) astrosphere **D) lithosphere**
- 60) New seafloor is created at _____ plate boundaries. 60) _____
 A) transform B) hot spot C) convergent **D) divergent**
- 61) Consider the tectonic plates on either side of an oceanic-ridge boundary. How are the plates moving with respect to the boundary? 61) _____
 A) sliding along it **B) moving away from it** C) moving toward it
- 62) The San Andreas fault in California and the Alpine fault in New Zealand are good examples of _____. 62) _____
A) transform faults that cut continental crust
 B) convergent margins between oceanic plates
 C) emergent ocean basins
 D) divergent oceanic crust
- 63) Shallowest to deepest, the primary *compositional* layers within the Earth are _____. 63) _____
 A) sedimentary, metamorphic and igneous
 B) basalt, crust, mantle, asthenosphere, core
 C) lithosphere, asthenosphere, mesosphere, outer core, inner core
D) crust, mantle and core
- 64) The _____ is the thinnest layer within the Earth. 64) _____
 A) inner core **B) crust** C) outer core D) mantle
- 65) The oceanic crust is made of mafic rock called _____ and is about _____ thick on average. 65) _____
 A) basalt, 70 km **B) basalt, 7 km**
 C) granite, 35–40 km D) marine sedimentary rocks, 25 km
- 66) The continental crust is heterogeneous but is predominantly made of _____ and is _____ thick. 66) _____
 A) granite, 3.5 to 7 km B) metasedimentary rocks, 600 km
C) granite, 35 to 70 km D) basalt, 7 km

- 67) The Mantle extends from < 100 km to about _____ and is bounded at both its top and bottom by _____. 67) _____
 A) 2900 km, material of identical composition but contrasting temperature
 B) 600 km, layers of molten rock
C) 2900 km, layers of markedly different chemical composition
 D) 290 km, the asthenosphere
- 68) The mantle is made of dense rock _____ called _____. 68) _____
A) >3.3 g/cm³, peridotite B) <2.9 g/cm³, granite
 C) <3.0 g/cm³, basalt D) >3.4 g/cm³, shergottite
- 69) The composition of the core of Earth is thought to be _____. 69) _____
 A) basalt **B) iron-nickel alloy**
 C) granite D) peridotite
- 70) In addition to the dominant iron and nickel, the core is thought to contain _____. 70) _____
 A) major amounts of oxygen, silicon and sulphur
 B) large resources of diamonds
C) minor amounts of oxygen, silicon and sulphur
 D) minor amounts of heavy metals such as gold, lead, and uranium
- 71) In correct order from the centre outward, Earth includes which units? 71) _____
 A) core, inner mantle, outer mantle, crust B) inner core, crust, mantle, hydrosphere
C) inner core, outer core, mantle, crust D) core, crust, mantle, hydrosphere
- 72) Shallowest to deepest, the primary layers within the Earth as defined by contrasting physical properties are _____. 72) _____
 A) sedimentary, metamorphic, igneous
 B) crust, mantle, core
 C) basalt, crust, mantle, asthenosphere, core
D) lithosphere, asthenosphere, mesosphere, outer core, inner core
- 73) The _____, about 100 km thick, is the coldest, most rigid and most brittle layer in the Earth. 73) _____
 A) asthenosphere **B) lithosphere** C) inner core D) mesosphere
- 74) The asthenosphere is actually a part of the _____ of the Earth. 74) _____
 A) inner core B) outer core C) crust **D) mantle**
- 75) The _____ is thought to be the only molten, metallic portion in the Earth's interior. 75) _____
 A) inner core B) lithosphere **C) outer core** D) mantle
- 76) The two layers inside the Earth which contain significant amounts of molten material are _____. 76) _____
 A) crust and inner core **B) asthenosphere and outer core**
 C) mesosphere and inner core D) crust and mesosphere

- 77) As a self-contained planet, Earth is divided into several interacting systems called _____. 77) _____
 A) the solid earth, the liquid earth, the gaseous earth and the living planet
 B) the geosphere, atmosphere, cryosphere, and giasphere
 C) the aerosphere, aquasphere, terrasphere, and ecosphere
 D) the atmosphere, hydrosphere, geosphere, and biosphere
- 78) The _____ refers to the sum total of all life on Earth. 78) _____
 A) asthenosphere B) hydrosphere C) biosphere D) atmosphere
- 79) The _____ is not a part of the Earth's physical environment. 79) _____
 A) atmosphere B) geosphere C) astrosphere D) hydrosphere
- 80) Of the hydrosphere, 97% is contained in _____. 80) _____
 A) lakes and streams B) groundwater
 C) the oceans D) glaciers
- 81) Observing Earth from beyond the moon's orbit, the most apparent features are _____. 81) _____
 A) plumes of erupting volcanoes
 B) the boundaries between the continents and the oceans
 C) white polar ice caps, green rain forests and brown deserts
 D) vast areas of ocean and swirling cloud patterns
- 82) The Earth's atmosphere serves to _____. 82) _____
 A) keeps most of the hydrosphere in a liquid state rather than being lost as a gas to space or frozen solid like ice caps on Mars
 B) reduce the influx of dangerous solar ultraviolet radiation
 C) regulate climate by means of heat transfer we call weather
 D) trap solar heat and hold it from being immediately radiated back into space
 E) all of the above
- 83) Ocean waves are directly created by _____. 83) _____
 A) evaporation
 B) the pull of the Moon's gravity
 C) the drag of air across open water and water's interaction with the shoreline and sea bed
 D) the revolution of the planet
- 84) The continental crust extends _____. 84) _____
 A) beneath the continental shelf through to the toe of the continental slope
 B) beneath about half of the ocean basins wherever it is shallow
 C) only to where their shorelines occur; beyond that is oceanic crust
 D) deep into the mantle wherever there are subduction zones
- 85) The continental shelf is located _____. 85) _____
 A) landward of the continental slope
 B) between the continental rise and the abyssal plains
 C) seaward of the continental slope
 D) between the continental slope and continental rise

- 86) Why are the youngest mountains formed either in the circum Pacific belt or the Alps-Himalayas belt? 86) _____
 A) these are areas of maximum plate convergence today
 B) these are the regions with the greatest political pressure
 C) because these are the stable shield areas
 D) because this is where the oldest and strongest rocks are exposed
- 87) Older mountain belts are found where former continent-continent collision occurred making thickened, low density crust like in _____ where erosion has exposed deformed Precambrian rocks from deep in the crust. 87) _____
 A) the Cascades
 B) the Appalachians and the Urals
 C) the Aleutians
 D) the Mid Atlantic Ridge
- 88) What is the age of most of the continental crust, especially the exposed shield areas in continental interiors? 88) _____
 A) Younger than the ocean basins because it is still high
 B) Precognition
 C) Paleozoic and younger
 D) Precambrian; with parts approximately 4 billion years.
- 89) Ocean crust is generally lower in elevation _____. 89) _____
 A) entirely because of the great weight of the overlying sea water
 B) averaging about 380 metres below sea level
 C) and contains prominent ridges, chains of volcanoes, deep canyons, and large plateaus
 D) and relatively featureless due to flat seafloor and sediments that drape everything
- 90) The most prominent features on the ocean floor are the _____. 90) _____
 A) seamounts
 B) oceanic ridges
 C) deep-ocean trenches
 D) lava plateaus
- 91) The total length of the spreading ridge system in the world's ocean basins is about _____. 91) _____
 A) 7,000 km
 B) 700 km
 C) 70,000 km
 D) 700,000 km
- 92) Time scales and intervals of importance to geologic processes _____. 92) _____
 A) must be at least as long as the epochs in the geologic time scale
 B) range from less than a millisecond to billions of years
 C) must be shorter than seismic wave vibrations or longer than mantle convection cycles but nothing in between
 D) range only from days to millions of years
- 93) Earth's two chief energy sources for all of its heat and geologic processes are _____. 93) _____
 A) external solar radiation and internal decay of naturally radioactive elements
 B) tidal forces and wind
 C) wind and ocean currents
 D) oil and coal

- 94) Human activities like damming rivers, building seawalls, tilling land, strip mining, refining ores, burning fossil fuels, and disposing of garbage _____. 94) _____
 A) mainly affect the landscape but not the physical environment, weather or ocean
 B) are all inherently evil and must cease at any cost
 C) can substantially influence natural systems and geologic processes both locally and globally
 D) have little influence beyond their immediate area of disruption
- 95) The series of processes by which one rock type can transform to another, and record Earth's internal or external past environmental conditions as it does so, is called _____. 95) _____
 A) the rock cycle
 B) the tricycle
 C) the uniformitarian cycle
 D) the Wilson cycle
- 96) _____ are the three, basic categories of rocks in the rock cycle. 96) _____
 A) Weathered, sedimentary, and volcanic
 B) Sedimentary, igneous, and metamorphic
 C) Sedimentary, igneous, and volcanic
 D) Crustal, lithospheric, and transform
- 97) Which one of the following statements is not correct? 97) _____
 A) magmas crystallize to form igneous rocks
 B) igneous rocks can undergo metamorphism
 C) metamorphic rocks may melt to magma
 D) sedimentary rocks may weather to igneous rocks
- 98) Molten silicate material that forms at appropriate conditions of temperature and pressure for rocks to melt within the earth is called _____. 98) _____
 A) obsidian
 B) ignimbrite
 C) vesuvianite
 D) magma
- 99) The process by which magmas cool and solidify to rock is termed _____. 99) _____
 A) crystallization
 B) plutonism
 C) thermal metamorphism
 D) volcanism
- 100) _____ rocks form by crystallization and consolidation of molten magma. 100) _____
 A) Primary
 B) Sedimentary
 C) Indigenous
 D) Igneous
- 101) The term igneous is _____. 101) _____
 A) Armenian for "containing many crystals"
 B) Latin for "rock from below"
 C) Greek for "full of fire"
 D) Polish for "rock that flows"
- 102) The natural chemical and mechanical decomposition of rocks at Earth's surface is termed _____. 102) _____
 A) de-lithification
 B) weathering
 C) solifluction
 D) decrepitation
- 103) _____ is the process by which rocks breakdown in place to produce soils and sediments. 103) _____
 A) Weathering
 B) Lithification
 C) Metamorphism
 D) Subduction
- 104) In the rock cycle, the transported natural chemical and mechanical residues of weathering are termed _____. 104) _____
 A) turbidites
 B) soils
 C) sediments
 D) debitage
 E) talus

- 105) _____ are the places where most sediments are ultimately deposited. 105) _____
 A) Swamps B) Dunes **C) Oceans** D) Floodplains
- 106) In sedimentary rocks, lithification includes _____. 106) _____
 A) crystallization and cooling B) compaction and transportation
 C) cementation and weathering **D) compaction and cementation**
- 107) In the rock cycle, the series of processes that transform unconsolidated sediment into sedimentary rocks is termed _____. 107) _____
 A) cementation
B) lithification
 C) dewatering
 D) recrystallization
 E) compaction
- 108) _____ rocks always originate at the surface of the Earth. 108) _____
 A) Metamorphic **B) Sedimentary** C) Igneous D) Secondary
- 109) Rocks that have been recrystallized under strain, or changing conditions of heat and pressure are termed _____. 109) _____
 A) igneous B) sedimentary **C) metamorphic**

TRUE/FALSE. Write 'T' if the statement is true and 'F' if the statement is false.

- 110) William Logan was Canada's first official geologist. 110) _____
- 111) The Second World War caused a steep decline in the post-war rate of world population growth. 111) _____
- 112) James Hutton's 18th century textbook emphasized the importance of catastrophic geologic processes and a short time span for the whole of Earth's geologic history. 112) _____
- 113) The doctrine of uniformitarianism implies that Earth's geologic history took place over a relatively short time span. 113) _____
- 114) The doctrine of uniformitarianism implies that the current forces and processes shaping the Earth have been operating for a very long time. 114) _____
- 115) The law of superposition applies primarily to sedimentary rocks and lava flows. 115) _____
- 116) The currently accepted age of Earth is approximately 4.6 billion years. 116) _____
- 117) According to the nebular hypothesis, all of the bodies in the universe evolved from a rotating cloud of gases and dust about 5 billion years ago. 117) _____
- 118) Despite publishing a book in 1915 called "The Origins of the Continents and Oceans", Alfred Wegener's academic training and profession was as a meteorologist and not a geologist. 118) _____
- 119) According to Wegener, the Late Paleozoic climate favoured by the Glossopteris ferns was sub-tropical. 119) _____

- 120) The faunal evidence for Pangaea was tenuous as the giant crocodillian, Mesosaurus, could have easily swum from South America to Africa. 120) _____
- 121) Because of plant fossil similarities, by the early part of the twentieth century, most paleontologists were in agreement that some sort of land connection existed between the southern continents during the Late Paleozoic and Early Mesozoic Eras. 121) _____
- 122) An extensive, Late Pleistocene glaciation covered all of southern India, southern Africa, and southeastern South America with a continental ice cap prior to the break up of Pangaea. 122) _____
- 123) During Permian glaciation, southern Africa was situated over the South Pole. 123) _____
- 124) Seafloor spreading is the dominant process at convergent plate margins. 124) _____
- 125) Cooling away from the ridge causes the oceanic lithosphere to strengthen and thicken. 125) _____
- 126) The diameter and surface area of the Earth gradually increase as new seafloor is produced by seafloor spreading. 126) _____
- 127) Because of the nearly 70,000 km of spreading ridges the Earth is gradually increasing in surface area. 127) _____
- 128) Subduction zones are usually associated with oceanic ridge systems. 128) _____
- 129) During subduction, oceanic lithosphere descends into the asthenosphere. 129) _____
- 130) Where oceanic and continental plates converge, the denser, oceanic plate sinks beneath the continental plate. 130) _____
- 131) Transform faults only cut across oceanic lithosphere where ridge systems are offset. 131) _____
- 132) Internally, the Earth consists of spherical shells with different compositions and densities. 132) _____
- 133) The mantle is a shell of molten metal, mainly iron, that surrounds the inner core. 133) _____
- 134) The mantle and crust have about the same thickness. 134) _____
- 135) The lithosphere, asthenosphere, and mesosphere are all layers of Earth defined by their composition. 135) _____
- 136) The asthenosphere is a relatively cool and rigid shell that overlies the lithosphere. 136) _____
- 137) There is little feedback or interaction between Earth's various spheres and systems. 137) _____
- 138) Oceans cover slightly less than half of the Earth's surface. 138) _____
- 139) According to the rock cycle, any type of rock (igneous, sedimentary, or metamorphic) may be transformed into another type of rock, given enough time. 139) _____

140) Igneous rocks are produced largely by the deposition and consolidation of surface materials like sand and mud.

140) _____

Answer Key

Testname: UNTITLED4

- 1) A
- 2) B
- 3) A
- 4) B
- 5) A
- 6) E
- 7) E
- 8) A
- 9) D
- 10) B
- 11) C
- 12) B
- 13) B
- 14) D
- 15) D
- 16) C
- 17) A
- 18) C
- 19) A
- 20) B
- 21) C
- 22) C
- 23) B
- 24) D
- 25) A
- 26) B
- 27) C
- 28) D
- 29) E
- 30) D
- 31) B
- 32) B
- 33) B
- 34) A
- 35) C
- 36) A
- 37) A
- 38) B
- 39) D
- 40) C
- 41) D
- 42) B
- 43) A
- 44) A
- 45) D
- 46) B
- 47) C
- 48) A
- 49) B
- 50) B

Answer Key

Testname: UNTITLED4

- 51) D
- 52) C
- 53) C
- 54) A
- 55) A
- 56) C
- 57) D
- 58) A
- 59) D
- 60) D
- 61) B
- 62) A
- 63) D
- 64) B
- 65) B
- 66) C
- 67) C
- 68) A
- 69) B
- 70) C
- 71) C
- 72) D
- 73) B
- 74) D
- 75) C
- 76) B
- 77) D
- 78) C
- 79) C
- 80) C
- 81) D
- 82) E
- 83) C
- 84) A
- 85) A
- 86) A
- 87) B
- 88) D
- 89) C
- 90) B
- 91) C
- 92) B
- 93) A
- 94) C
- 95) A
- 96) B
- 97) D
- 98) D
- 99) A
- 100) D

Answer Key

Testname: UNTITLED4

- 101) C
- 102) B
- 103) A
- 104) C
- 105) C
- 106) D
- 107) B
- 108) B
- 109) C
- 110) TRUE
- 111) FALSE
- 112) FALSE
- 113) FALSE
- 114) TRUE
- 115) TRUE
- 116) FALSE
- 117) FALSE
- 118) TRUE
- 119) FALSE
- 120) FALSE
- 121) TRUE
- 122) FALSE
- 123) TRUE
- 124) FALSE
- 125) TRUE
- 126) FALSE
- 127) FALSE
- 128) FALSE
- 129) TRUE
- 130) TRUE
- 131) FALSE
- 132) TRUE
- 133) FALSE
- 134) FALSE
- 135) FALSE
- 136) FALSE
- 137) FALSE
- 138) FALSE
- 139) TRUE
- 140) FALSE