

Name\_\_\_\_\_

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

- 1) The \_\_\_\_\_ are the most prominent feature on the ocean floor. 1) \_\_\_\_\_  
A) seamounts B) mid-ocean ridges  
C) sediment cores D) abyssal mounds

Answer: B

Diff: 1 Type: MC

- 2) If someone says that an idea is "only a theory" and implies that this means it can be dismissed, is this a valid viewpoint? 2) \_\_\_\_\_  
A) The viewpoint is incorrect because once an idea becomes a theory it can never be disproven.  
B) The viewpoint is incorrect because for an idea to become a theory it has withstood robust testing and is currently accepted.  
C) The viewpoint is accurate because since science is based on interpretation it is not really trustworthy.  
D) The viewpoint is accurate because a theory is essentially just a guess.

Answer: B

Diff: 2 Type: MC

- 3) Which of the following energy sources is thought to drive the lateral motions of Earth's lithospheric plates? 3) \_\_\_\_\_  
A) gravitational attractive forces of the Sun and Moon  
B) heat transfer between Earth's interior and the surface of Earth  
C) electrical and magnetic fields localized in the inner core  
D) swirling movements of the molten iron particles in the outer core

Answer: B

Diff: 1 Type: MC

- 4) In the proto-solar system nebula, gravity pulled matter together to form larger bodies. As they collided, what happened to these bodies? 4) \_\_\_\_\_  
A) Immense heat was released within the colliding bodies as gravitational potential energy was converted to heat.  
B) Oblique collisions caused individual bodies to spin.  
C) The objects temporarily broke apart and then reformed into large objects, cooling rapidly during the breakup period.  
D) The objects broke apart to form asteroids, much like a neutron colliding with a heavy atom produces fission.

Answer: A

Diff: 1 Type: MC

- 5) Which of the following layers in Earth has the highest density? 5) \_\_\_\_\_  
A) outer Core B) lower mantle C) lithosphere D) asthenosphere

Answer: A

Diff: 1 Type: MC

- 6) Continental shields and platforms represent \_\_\_\_\_. 6) \_\_\_\_\_
- A) sites where continents collide, analogous to warriors clashing shields
  - B) areas in the interior of continents that have not experienced mountain building for billions of years
  - C) names given to Paleozoic mountain belts
  - D) sedimentary basins with inland seas shaped like a shield, like Hudson's bay

Answer: B

Diff: 1 Type: MC

ESSAY. Write your answer in the space provided or on a separate sheet of paper.

- 7) Earth's physical environment is traditionally divided in the hydrosphere, atmosphere, and the solid Earth. Remembering the scientific method, why do you think that scientists tend to categorize and classify various features, phenomena, and characteristics of the natural world into groups or subdivisions? Also, are there potential pitfalls or problems if we only consider the natural world as individual groups or categories rather than as a whole?

Answer: Categorizing and classifying is a way of cataloging the differences and similarities between things. We put items that are mostly similar into the same broad groups and separate items that are mostly different. From this system, we can begin to study why things are similar and what is the significance of the differences and that helps us to get to the basic processes that are of scientific interest. The pitfalls or problems are that we may not recognize similarities in objects that have been classified as different and vice versa. Also, we are likely to miss the interactions between different groups and the processes that cause those interactions when we focus on classifying things.

Diff: 3 Type: ES

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

- 8) The \_\_\_\_\_ explains how our solar system probably formed from a giant cloud of gases and dispersed solid particles. 8) \_\_\_\_\_
- A) extrastellar solar hypothesis
  - B) nebular theory
  - C) protogalactic theory
  - D) planetary compression theory

Answer: B

Diff: 1 Type: MC

- 9) What are the basic differences between the disciplines of physical and historical geology? 9) \_\_\_\_\_
- A) Historical geology involves the study of rock strata, fossils, and geologic events, utilizing the geologic time scale as a reference; physical geology includes the study of how rocks form and of how erosion shapes the land surface.
  - B) Physical geology involves the study of rock strata, fossils, and deposition in relation to plate movements in the geologic past; historical geology charts how and where the plates were moving in the past.
  - C) Physical geology is the study of fossils and sequences of rock strata; historical geology is the study of how rocks and minerals were used in the past.
  - D) None of the above-physical geology and historical geology are essentially the same.

Answer: A

Diff: 1 Type: MC

- 10) What two chemical elements are most abundant in the deep interior of Earth? 10) \_\_\_\_\_  
A) magnesium and oxygen B) silicon and oxygen  
C) iron and magnesium D) hydrogen and helium

Answer: C

Diff: 1 Type: MC

- 11) Moving from the shoreline towards the deep-ocean basin, the first part of the continental margin you would encounter would be the continental \_\_\_\_\_. 11) \_\_\_\_\_  
A) rise B) trench C) shelf D) slope

Answer: C

Diff: 1 Type: MC

- 12) Soil belongs to the \_\_\_\_\_. 12) \_\_\_\_\_  
A) biosphere  
B) hydrosphere  
C) atmosphere  
D) geosphere  
E) All of the above

Answer: E

Diff: 1 Type: MC

ESSAY. Write your answer in the space provided or on a separate sheet of paper.

13) Below is a picture of water striking rocks at a coastline.



Describe which of Earth's "spheres" are interacting here, and some of the effects that may be caused by this interaction.

Answer: Student may say that the hydrosphere (surf) and geosphere (rocks) are interacting. They may also involve the atmosphere, as its energy is driving the force of the waves. Less commonly they may invoke the biosphere, noting that the rocks may be made from the shells of organisms. In terms of the effects, they could note that the surf energy will diminish when it hits the land, but erosion may occur as a result of the surf hitting land.

Diff: 2 Type: ES

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

- 14) In the television series "Cosmos" the astronomer Carl Sagan used to say, "We are all made of star stuff." What did he mean by that? 14) \_\_\_\_\_
- A) All of the chemical elements in our solar system were forged in an ancient star that went supernova.
  - B) The earth has incorporated large amounts of chemical material from the solar wind, so our bodies carry this material.
  - C) All of the chemical elements were formed during the big bang when the universe began, so we are like the stars.
  - D) We all have the potential to be stars.

Answer: A

Diff: 2 Type: MC

- 15) Oceanography is the study of the oceans and geology is the study of Earth, so what is meteorology? 15) \_\_\_\_\_  
A) the study of the Sun's impact on the upper atmosphere  
B) the study of how to be a TV newscaster  
C) the study of the atmosphere  
D) the study of meteors  
Answer: C  
Diff: 1 Type: MC
- 16) Long oceanic mountain chains typically are characterized by \_\_\_\_\_. 16) \_\_\_\_\_  
A) layers of igneous rocks  
B) rocks older than 1 billion years old  
C) granitic plutons and batholiths  
D) highly deformed sedimentary rocks  
Answer: A  
Diff: 1 Type: MC
- 17) The \_\_\_\_\_ is the thinnest layer of Earth. 17) \_\_\_\_\_  
A) outer core  
B) crust  
C) mantle  
D) inner core  
Answer: B  
Diff: 1 Type: MC
- 18) Examine the words and/or phrases below and determine the relationship among the majority of words/phrases. Choose the option that does not fit the pattern. 18) \_\_\_\_\_  
A) lithosphere  
B) core  
C) crust  
D) mantle  
Answer: A  
Diff: 2 Type: MC
- 19) The \_\_\_\_\_ refers to the water-dominated parts of Earth. 19) \_\_\_\_\_  
A) geosphere  
B) biosphere  
C) hydrosphere  
D) atmosphere  
Answer: C  
Diff: 1 Type: MC
- 20) A scientific theory is the \_\_\_\_\_ step in developing an idea. It is \_\_\_\_\_ well tested. 20) \_\_\_\_\_  
A) first; very  
B) first; not very  
C) last; not very  
D) last; very  
Answer: D  
Diff: 1 Type: MC
- 21) The Oort cloud is \_\_\_\_\_. 21) \_\_\_\_\_  
A) another name for the inner solar system, just before the Sun became hot enough for nuclear fusion  
B) an unusual type of cloud formed when meteorites strike Earth  
C) the outer solar system where planetesimals, rocky debris and comets orbit outside beyond the outer planets but cross into the inner solar system at times  
D) the asteroid belt  
Answer: C  
Diff: 1 Type: MC
- 22) The lithosphere and asthenosphere are layers of Earth defined by their \_\_\_\_\_. 22) \_\_\_\_\_  
A) composition  
B) biology  
C) heat  
D) strength  
Answer: D  
Diff: 1 Type: MC

- 23) All of the following are possible steps of scientific investigation except for \_\_\_\_\_. 23) \_\_\_\_\_  
A) development of observations and experiments to test the hypotheses  
B) the collection of scientific facts through observation and measurement  
C) assumption of conclusions without prior experimentation or observation  
D) the development of one or more working hypotheses or models to explain facts  
Answer: C  
Diff: 2 Type: MC
- 24) Convergent plate boundaries are \_\_\_\_\_. 24) \_\_\_\_\_  
A) sites where heat from Earth's interior is vented to the surface as volcanoes  
B) areas where two plates slide laterally past one another, generating earthquakes, like the San Andreas fault  
C) sites of supervolcanoes like Yellowstone  
D) sites where oceanic plates descend beneath continental plates  
Answer: D  
Diff: 1 Type: MC
- 25) The largest of Earth's spheres is the \_\_\_\_\_. 25) \_\_\_\_\_  
A) biosphere B) hydrosphere C) geosphere D) atmosphere  
Answer: C  
Diff: 1 Type: MC
- 26) Science is based on the assumption that nature behaves in a \_\_\_\_\_ and \_\_\_\_\_ manner. 26) \_\_\_\_\_  
A) consistent; unpredictable B) inconsistent; unpredictable  
C) consistent; predictable D) inconsistent; predictable  
Answer: C  
Diff: 1 Type: MC
- 27) The \_\_\_\_\_ is the solid, rocky shell between the crust and outer core. 27) \_\_\_\_\_  
A) core B) crust C) lithosphere D) mantle  
Answer: D  
Diff: 1 Type: MC
- 28) The composition of Earth's inner core is thought to be \_\_\_\_\_. 28) \_\_\_\_\_  
A) peridotite B) basalt  
C) granite D) solid iron-nickel alloy  
Answer: D  
Diff: 1 Type: MC
- 29) Hurricanes and tornados are natural disasters. What branch of the Earth sciences studies the origin of these phenomena? 29) \_\_\_\_\_  
A) meteorology B) geology C) oceanography D) astronomy  
Answer: A  
Diff: 1 Type: MC
- 30) The asthenosphere is part of the \_\_\_\_\_ of Earth. 30) \_\_\_\_\_  
A) outer core B) crust C) mantle D) inner core  
Answer: C  
Diff: 1 Type: MC

- 31) A scientific \_\_\_\_\_ is a tentative or untested explanation that is proposed to explain scientific observations. 31) \_\_\_\_\_  
A) law B) theory C) observation D) hypothesis  
Answer: B  
Diff: 1 Type: MC
- 32) Examine the words and/or phrases below and determine the relationship among the majority of words/phrases. Choose the option that does not fit the pattern. 32) \_\_\_\_\_  
A) planetesimals B) comets  
C) Oort cloud D) meteorites  
Answer: C  
Diff: 2 Type: MC
- 33) Shield areas in continental interiors are characterized by \_\_\_\_\_. 33) \_\_\_\_\_  
A) flat areas that include rocks older than 1 billion years old  
B) linear chains of mountains less than 100 million years old  
C) ancient coastal regions that have become abandoned and eroded  
D) flat river valleys that cut through older mountain ranges  
Answer: A  
Diff: 1 Type: MC
- 34) Ocean crust is denser than continental crust because ocean crust is \_\_\_\_\_. 34) \_\_\_\_\_  
A) composed primarily of basalt B) thinner than continental crust  
C) thicker than continental crust D) composed primarily of granite  
Answer: A  
Diff: 1 Type: MC
- 35) The convective flow of liquid, metallic iron in the \_\_\_\_\_ is thought to generate Earth's magnetic field. 35) \_\_\_\_\_  
A) asthenosphere B) lithosphere C) outer core D) inner core  
Answer: C  
Diff: 1 Type: MC
- 36) The asthenosphere is a relatively \_\_\_\_\_ and rigid shell that \_\_\_\_\_ the lithosphere. 36) \_\_\_\_\_  
A) warm; overlies B) cool; overlies  
C) warm; underlies D) cool; underlies  
Answer: C  
Diff: 1 Type: MC
- 37) The asthenosphere is the \_\_\_\_\_ layer in the upper mantle that the plates move on. 37) \_\_\_\_\_  
A) all liquid B) partially melted  
C) all solid D) gaseous  
Answer: B  
Diff: 1 Type: MC
- 38) Earthquakes are natural disasters. Which branch of the Earth sciences studies the impact of this phenomenon on coastal environments? 38) \_\_\_\_\_  
A) meteorology B) geology C) oceanography D) astronomy  
Answer: B  
Diff: 1 Type: MC

- 39) The formation of the solar system from a huge cloud of gases and dispersed particles is known as the \_\_\_\_\_. 39) \_\_\_\_\_  
A) solar galactic hypothesis B) origin of species  
C) harmony of the heavens D) Big Bang theory  
Answer: A  
Diff: 1 Type: MC
- 40) Geologists primarily would study which phenomenon? 40) \_\_\_\_\_  
A) rocks and minerals B) stars and galaxies  
C) clouds and precipitation D) marine life and ocean currents  
Answer: A  
Diff: 1 Type: MC
- 41) The "Big Bang" is an example of a \_\_\_\_\_. 41) \_\_\_\_\_  
A) hypothesis B) observation C) law D) theory  
Answer: D  
Diff: 1 Type: MC
- 42) The earth is sometimes called "The Blue Planet" because the \_\_\_\_\_ appear(s) blue in sunlight. 42) \_\_\_\_\_  
A) lakes B) rivers  
C) atmosphere D) overall surface of earth from space  
Answer: D  
Diff: 1 Type: MC
- 43) Light elements like hydrogen and helium form a large percentage of the outer planets and Sun is made up primarily of hydrogen. Why are these elements nearly absent from the inner planets? 43) \_\_\_\_\_  
A) It is a mystery that has never been solved by science.  
B) Hydrogen and helium have all been bound up by chemical reactions on the inner planets and are held in rock.  
C) These light elements are blown away from the inner planets by the solar wind.  
D) The Sun captured all of the hydrogen during its formation.  
Answer: C  
Diff: 1 Type: MC
- 44) Comets are made up primarily of \_\_\_\_\_. 44) \_\_\_\_\_  
A) iron-nickel alloys  
B) frozen hydrogen  
C) frozen water, carbon dioxide, and methane  
D) silicate minerals, like rocks on Earth  
Answer: C  
Diff: 1 Type: MC
- 45) What is the source of the energy that powers the Earth system? 45) \_\_\_\_\_  
A) the Sun B) heat from Earth's interior  
C) both A and B D) none of the above  
Answer: C  
Diff: 1 Type: MC



- 46) Earth's core is largely molten \_\_\_\_\_ and \_\_\_\_\_ and convection of this molten mass generates Earth's magnetic field. 46) \_\_\_\_\_  
 A) nickel, silicon      B) silicon, iron      C) oxygen, iron      D) nickel, iron  
 Answer: D  
 Diff: 1    Type: MC
- 47) A mineralogist studies minerals and their origins. A mineralogist studying the Earth system would \_\_\_\_\_ 47) \_\_\_\_\_  
 A) do the same thing, studying minerals and their origins, as any other mineralogist  
 B) study how minerals influence organisms living on them, how they react with water to produce soil forming minerals, or study how wind transports minerals as dust and influences climate  
 C) study how minerals form rocks  
 D) Minerals can never be used to study the Earth system.  
 Answer: B  
 Diff: 2    Type: MC
- 48) According to the nebular theory, all of the bodies in the universe evolved from a rotating cloud of gases and dust about \_\_\_\_\_ billion years ago. 48) \_\_\_\_\_  
 A) 12      B) 3      C) 5      D) 2  
 Answer: C  
 Diff: 1    Type: MC
- 49) A \_\_\_\_\_ is a well-tested and widely accepted view that best explains certain scientific observations. 49) \_\_\_\_\_  
 A) theory      B) hypothesis      C) law      D) generalization  
 Answer: A  
 Diff: 1    Type: MC
- 50) Examine the words and/or phrases below and determine the relationship among the majority of words/phrases. Choose the option that does not fit the pattern. 50) \_\_\_\_\_  
 A) stable platform      B) continental interior  
 C) shield      D) mountain belt  
 Answer: D  
 Diff: 2    Type: MC
- 51) The \_\_\_\_\_ refers to the sum total of all life on Earth. 51) \_\_\_\_\_  
 A) biosphere      B) geosphere      C) hydrosphere      D) atmosphere  
 Answer: A  
 Diff: 1    Type: MC
- 52) The thin, outer layer of Earth, from 7 to 40 km in thickness, is called the \_\_\_\_\_. 52) \_\_\_\_\_  
 A) core      B) crust      C) lithosphere      D) mantle  
 Answer: B  
 Diff: 1    Type: MC

- 53) The Himalayan Mountains and adjacent Tibet are a mountain system formed by \_\_\_\_\_. 53) \_\_\_\_\_  
 A) back-arc contraction B) sea floor spreading  
 C) continental collision D) subduction  
 Answer: C  
 Diff: 1 Type: MC
- 54) The two broad, traditional subject areas of geologic study are \_\_\_\_\_. 54) \_\_\_\_\_  
 A) physical and historical geology B) structural geology and sedimentology  
 C) mineralogy and igneous petrology D) None of the above  
 Answer: A  
 Diff: 1 Type: MC
- 55) The exchange of energy between the surface of Earth, the atmosphere, and space causes \_\_\_\_\_. 55) \_\_\_\_\_  
 A) temperature B) topography C) glaciers D) weather  
 Answer: D  
 Diff: 1 Type: MC
- 56) The \_\_\_\_\_ is thought to be a liquid, metallic region in Earth's interior. 56) \_\_\_\_\_  
 A) outer core B) lithosphere C) mantle D) inner core  
 Answer: A  
 Diff: 1 Type: MC
- 57) Earth is estimated to be approximately 4.6 billion years old. Life appeared early in the history of Earth, but metazoans (multicelled organisms) did not appear until about 600 million years ago. If the history of Earth were compressed into a single year, about when would metazoans appear? 57) \_\_\_\_\_  
 A) mid-December B) late January C) late September D) late November  
 Answer: D  
 Diff: 2 Type: MC
- 58) Examine the words and/or phrases below and determine the relationship among the majority of words/phrases. Choose the option that does not fit the pattern. 58) \_\_\_\_\_  
 A) observation B) fact C) hypothesis D) theory  
 Answer: B  
 Diff: 2 Type: MC
- 59) Which discipline is not used within the Earth sciences? 59) \_\_\_\_\_  
 A) Chemistry  
 B) Biology  
 C) Mathematics  
 D) Physics  
 E) None of the above; Earth Science makes use of all of these sciences.  
 Answer: E  
 Diff: 2 Type: MC
- 60) Humans are \_\_\_\_\_ the Earth System \_\_\_\_\_ Earth's environment in a major way. 60) \_\_\_\_\_  
 A) part of; but do not affect B) not part of; and do not affect  
 C) part of; and affect D) not part of; but affect  
 Answer: C  
 Diff: 2 Type: MC

- 61) Flat, stable areas of continental crust tend to be located \_\_\_\_\_. 61) \_\_\_\_\_  
A) near desert regions  
B) in areas that receive large amounts of rainfall  
C) along coastlines  
D) in the interior of continents  
Answer: D  
Diff: 1 Type: MC
- 62) The \_\_\_\_\_ forms the relatively cool, brittle tectonic plates. 62) \_\_\_\_\_  
A) eosphere B) astrosphere C) lithosphere D) asthenosphere  
Answer: C  
Diff: 1 Type: MC
- 63) The vast majority of Earth scientists are involved in \_\_\_\_\_. 63) \_\_\_\_\_  
A) lobbying for alternative energy for profit  
B) exploring the features and process of Earth  
C) focusing on only one earth science discipline with few connections to other Earth science disciplines.  
D) either extraction of mineral resources or energy  
Answer: D  
Diff: 1 Type: MC
- 64) Ocean floor averages about \_\_\_\_\_ km depth below sea level. 64) \_\_\_\_\_  
A) 6 B) 2 C) 4 D) 8  
Answer: C  
Diff: 1 Type: MC
- 65) Haley's Comet visits Earth's atmosphere once every 76 years. What branch of the Earth sciences is the main group that studies these phenomena? 65) \_\_\_\_\_  
A) meteorology B) geology C) oceanography D) astronomy  
Answer: D  
Diff: 1 Type: MC
- 66) The continental shelf is located \_\_\_\_\_. 66) \_\_\_\_\_  
A) seaward of the continental slope  
B) between the continental slope and continental rise  
C) between the continental rise and the abyssal plains  
D) landward of the continental slope  
Answer: D  
Diff: 1 Type: MC
- 67) Which of the following would not typically be considered an Earth Science study? 67) \_\_\_\_\_  
A) studies of volcanic eruptions  
B) studies of impact craters on the moon  
C) chemical refining of petroleum  
D) studies of acid mine waters and the bacteria that live in those waters  
Answer: C  
Diff: 1 Type: MC

68) A major cause of the differences in elevation between ocean basins and continents is \_\_\_\_\_. 68) \_\_\_\_\_  
A) temperature B) viscosity C) density D) mass

Answer: C

Diff: 1 Type: MC

69) The Andes Mountains in South America are formed as a result of \_\_\_\_\_. 69) \_\_\_\_\_  
A) sea floor spreading B) continental collision  
C) subduction D) back-arc contraction

Answer: C

Diff: 1 Type: MC

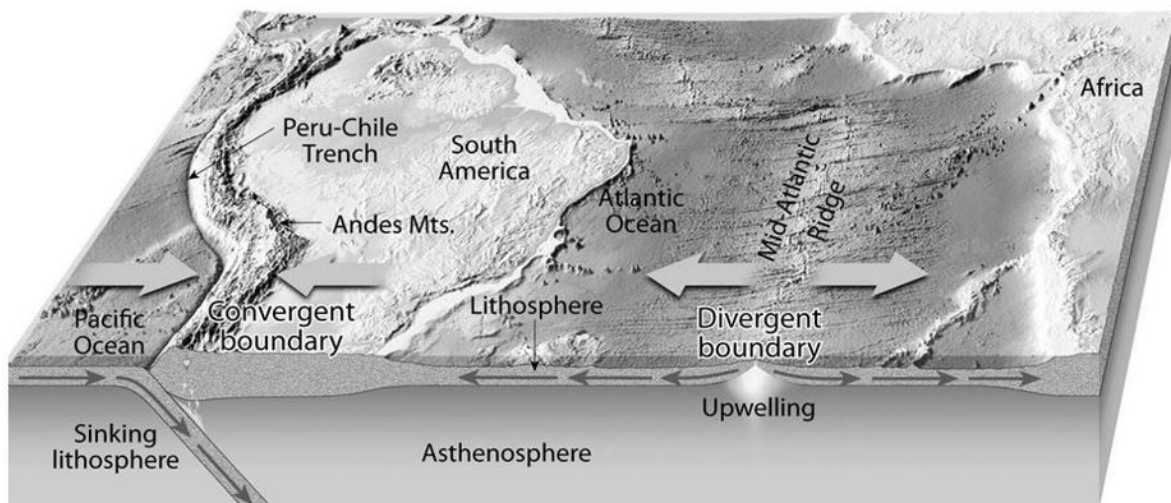
70) The study of Earth's atmosphere is known as \_\_\_\_\_. 70) \_\_\_\_\_  
A) cosmology B) astronomy C) meteorology D) oceanography

Answer: C

Diff: 1 Type: MC

ESSAY. Write your answer in the space provided or on a separate sheet of paper.

71) What is the relationship of the dense oceanic crust that is produced at a divergent plate boundary to the convergence or collision of an oceanic plate and a continental plate, such as the western margin of South America in the diagram below?



Answer: The dense oceanic crust sinks underneath the more buoyant continental crust at this type of convergent plate boundary.

Diff: 2 Type: ES

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

72) Active mountain belts are most likely to be found \_\_\_\_\_. 72) \_\_\_\_\_  
A) scattered throughout continents  
B) in the interior regions of continents  
C) along only the eastern margins of continents  
D) along the margins of continents

Answer: D

Diff: 1 Type: MC

- 73) Major mountain belts on Earth are \_\_\_\_\_. 73) \_\_\_\_\_  
A) older than smaller mountain belts because they have had enough time to grow large  
B) made of granite because it is low density and allows for maximum growth  
C) over 10 km high  
D) located around the Pacific Ocean

Answer: D

Diff: 1 Type: MC

- 74) Mechanisms that enhance or drive change are known as \_\_\_\_\_. 74) \_\_\_\_\_  
A) closed feedback mechanisms B) open feedback mechanisms  
C) negative feedback mechanisms D) positive feedback mechanisms

Answer: D

Diff: 1 Type: MC

- 75) There are places on the deepest parts of the ocean where no \_\_\_\_\_ penetrates that support colonies of life. 75) \_\_\_\_\_  
A) sound B) light C) energy D) water

Answer: B

Diff: 1 Type: MC

- 76) Oceans cover about \_\_\_\_\_ of Earth's surface. 76) \_\_\_\_\_  
A) 97 B) 70 C) 90 D) 30

Answer: B

Diff: 1 Type: MC

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

- 77) Continents are, on average, about 2 km higher than sea level. 77) \_\_\_\_\_

Answer: True ☒ False

Diff: 1 Type: TF

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

- 78) In an open system energy and matter flow \_\_\_\_\_ of the system. 78) \_\_\_\_\_  
A) not into and not out B) into and out  
C) into but not out D) not into but out

Answer: B

Diff: 1 Type: MC

- 79) Oceanic crust is generated at \_\_\_\_\_. 79) \_\_\_\_\_  
A) transform plate margins B) hot spots on the sea floor, like Iceland  
C) spreading ridges D) convergent plate margins

Answer: C

Diff: 1 Type: MC

- 80) Examine the words and/or phrases below and determine the relationship among the majority of words/phrases. Choose the option that does not fit the pattern. 80) \_\_\_\_\_  
A) seamount B) oceanic ridge  
C) continental crust D) abyssal plain  
Answer: C  
Diff: 2 Type: MC
- 81) Earth Science uses \_\_\_\_\_. 81) \_\_\_\_\_  
A) biology B) mathematics C) chemistry D) All of the above  
Answer: D  
Diff: 1 Type: MC
- 82) Which of the following is not considered to be part of a typical ocean basin? 82) \_\_\_\_\_  
A) deep canyons B) large expanses of flat plains  
C) a linear chain of volcanoes D) granitic intrusions  
Answer: D  
Diff: 1 Type: MC
- 83) The primary goal of Earth Science is \_\_\_\_\_. 83) \_\_\_\_\_  
A) to protect the environment  
B) to locate resources  
C) to identify the patterns in nature and use that information to predict the future  
D) to develop things that will benefit mankind  
Answer: C  
Diff: 1 Type: MC
- 84) Examine the words and/or phrases below and determine the relationship among the majority of words/phrases. Choose the option that does not fit the pattern. 84) \_\_\_\_\_  
A) atmosphere B) solid Earth  
C) hydrosphere D) biosphere  
Answer: C  
Diff: 2 Type: MC

85) Below is a picture of Mt. St. Helens volcano

85) \_\_\_\_\_



What is the usual cause for such events?

- A) interaction of the hydrosphere and the atmosphere
- B) location near a plate boundary
- C) location in earth's interior
- D) earthquakes

Answer: A

Diff: 2 Type: MC

86) The most prominent features on the ocean floor are the \_\_\_\_\_.

86) \_\_\_\_\_

- A) lava plateaus
- B) oceanic ridges
- C) seamounts
- D) deep-ocean trenches

Answer: B

Diff: 1 Type: MC

87) Shields and stable platforms are typically found in the \_\_\_\_\_ regions of a continent.

87) \_\_\_\_\_

- A) interior
- B) exterior
- C) subsurface
- D) atmospheric

Answer: A

Diff: 1 Type: MC



88) Which of the following is not a system?

88) \_\_\_\_\_

- A) soil, plants, rock, soil organisms, and animals
- B) the study of minerals
- C) the Pacific Ocean and the west coast of North America
- D) the biosphere

Answer: B

Diff: 2 Type: MC

89) Ocean surf wearing away rocks is an example of the interaction of which two of Earth's spheres?

89) \_\_\_\_\_

- A) atmosphere and hydrosphere
- B) biosphere and atmosphere
- C) hydrosphere and geosphere
- D) biosphere and geosphere

Answer: C

Diff: 2 Type: MC

90) Below is a picture of an Appalachian mountain ridge and Himalayan mountain peaks (left and right, respectively). Why are the Appalachians so much smoother and lower than the Himalayan Mountains?

90) \_\_\_\_\_



- A) The Appalachian Mountains are younger and have not yet built up to being jagged.
- B) The Appalachian Mountains are older and thus have become more worn down.
- C) The Appalachian Mountains are younger and younger mountains tend to be more weathered.
- D) The Appalachian Mountains are older and thus have softer rocks.

Answer: B

Diff: 2 Type: MC

91) Which of the following is not necessary for a hypothesis to be accepted by the scientific community?

91) \_\_\_\_\_

- A) There must be alternative hypotheses proposed.
- B) It must predict something other than the observations it was based on.
- C) It must be testable.
- D) It must be based on observations or facts.

Answer: A

Diff: 1 Type: MC



- 92) Examine the words and/or phrases below and determine the relationship among the majority of words/phrases. Choose the option that does not fit the pattern. 92) \_\_\_\_\_  
A) psychology  
B) geology  
C) astronomy  
D) meteorology  
E) oceanography  
Answer: A  
Diff: 1 Type: MC
- 93) If you want to buy a house in an area and you are worried there may be an earthquake hazard, who would be the best person to ask for advice on this hazard? 93) \_\_\_\_\_  
A) a geologist B) a civil engineer C) an astrologer D) a physicist  
Answer: A  
Diff: 1 Type: MC
- 94) Which of the following is a reasonable approximation of the rate that plates move? 94) \_\_\_\_\_  
A) the speed of deep ocean currents  
B) the speed of a mountain glacier  
C) the speed a turtle walks  
D) the rate of growth of human hair or fingernails  
Answer: D  
Diff: 2 Type: MC
- 95) A(n) \_\_\_\_\_ system is one in which energy moves freely in and out, but no matter enters or leaves the system. 95) \_\_\_\_\_  
A) feedback B) closed C) open D) equilibrated  
Answer: B  
Diff: 1 Type: MC
- 96) The waterline where the ocean meets the land is the boundary between \_\_\_\_\_. 96) \_\_\_\_\_  
A) mid-ocean ridge and subduction zone B) continental crust and oceanic crust  
C) dry land and submerged land D) all of the above  
Answer: C  
Diff: 1 Type: MC
- 97) During the history of Earth there have been periods when all the continents were together in a supercontinent known as \_\_\_\_\_. 97) \_\_\_\_\_  
A) Pangaea B) Gaia C) Laurentia D) Tethys  
Answer: A  
Diff: 1 Type: MC
- 98) Which of the following is not a planet? 98) \_\_\_\_\_  
A) Saturn B) Europa C) Venus D) Neptune  
Answer: B  
Diff: 1 Type: MC

- 99) The \_\_\_\_\_ is the relatively rigid zone above the asthenosphere that includes the crust and upper mantle. 99) \_\_\_\_\_  
 A) core B) crust C) lithosphere D) mantle  
 Answer: C  
 Diff: 1 Type: MC
- 100) The circumference of Earth is about \_\_\_\_\_ km. 100) \_\_\_\_\_  
 A) 10,000 B) 40,000 C) 30,000 D) 20,000  
 Answer: B  
 Diff: 1 Type: MC
- 101) Oceanography includes a study of \_\_\_\_\_. 101) \_\_\_\_\_  
 A) chemistry of sea water  
 B) the ocean floor  
 C) the effect of oceans on climate  
 D) ocean animals  
 E) all of the above  
 Answer: E  
 Diff: 1 Type: MC
- 102) Internally, Earth consists of \_\_\_\_\_ shells with different compositions and densities. 102) \_\_\_\_\_  
 A) circular B) hollow C) square D) rectangular  
 Answer: A  
 Diff: 1 Type: MC
- 103) Environmental science primarily focuses on any of the following except \_\_\_\_\_. 103) \_\_\_\_\_  
 A) mineral classification B) water use  
 C) air pollution D) sustainable development  
 Answer: A  
 Diff: 1 Type: MC
- 104) In correct order from the center outward, Earth includes which units? 104) \_\_\_\_\_  
 A) core, inner mantle, outer mantle, crust B) core, crust, mantle, hydrosphere  
 C) inner core, crust, mantle, hydrosphere D) inner core, outer core, mantle, crust  
 Answer: D  
 Diff: 1 Type: MC
- 105) Climate change is a well-known human created problem but there remains resistance to addressing the issue despite widespread scientific agreement on the issue. Although most scientists are familiar with the issues, if you were a congressman and wanted an informed analysis of the problem, which of the following would be most likely to give you the most complete analysis? 105) \_\_\_\_\_  
 A) a physicist  
 B) a geologist with knowledge of astronomy  
 C) an astronomer  
 D) a meteorologist with knowledge of oceanography  
 Answer: D  
 Diff: 1 Type: MC

- 106) Subduction zones are where \_\_\_\_\_ are descending. 106) \_\_\_\_\_  
 A) collisional mountain chairs B) oceanic plates  
 C) magmas D) transform faults  
 Answer: B  
 Diff: 1 Type: MC
- 107) Subduction zones are regions of convergence and the overlying plate is made of \_\_\_\_\_ 107) \_\_\_\_\_  
 lithosphere.  
 A) continental B) oceanic C) sedimentary D) liquid  
 Answer: A  
 Diff: 1 Type: MC
- 108) Deep ocean trenches typically are not located adjacent to \_\_\_\_\_. 108) \_\_\_\_\_  
 A) volcanic island arc chains B) transform plate boundaries  
 C) young continental mountains D) abyssal plains  
 Answer: B  
 Diff: 1 Type: MC
- 109) Sedimentary rocks with marine fossils are exposed at the top of Mt. Everest. Which scientists would 109) \_\_\_\_\_  
 make most use of this observation in their study?  
 A) geologists, because their elevation is related to physical geology and fossils are related to Earth history  
 B) oceanographers, because the fossils can tell us about periods when Earth was covered with water to the height of Mt. Everest  
 C) astronomers, because they can study how life came from outer space to Earth  
 D) meteorologists, because they could use the fossils as a guide to ancient climates  
 Answer: A  
 Diff: 1 Type: MC

Answer Key  
Testname: CH1

- 1) B  
Diff: 1    Page Ref:  
Topic: 1.5 The Face of Earth
- 2) B  
Diff: 2    Page Ref:  
Topic: 1.2 The Nature of Scientific Inquiry
- 3) B  
Diff: 1    Page Ref:  
Topic: 1.5 The Face of Earth
- 4) A  
Diff: 1    Page Ref:  
Topic: 1.3 Early Evolution of Earth
- 5) A  
Diff: 1    Page Ref:  
Topic: 1.5 The Face of Earth
- 6) B  
Diff: 1    Page Ref:  
Topic: 1.5 The Face of Earth
- 7) Categorizing and classifying is a way of cataloging the differences and similarities between things. We put items that are mostly similar into the same broad groups and separate items that are mostly different. From this system, we can begin to study why things are similar and what is the significance of the differences and that helps us to get to the basic processes that are of scientific interest. The pitfalls or problems are that we may not recognize similarities in objects that have been classified as different and vice versa. Also, we are likely to miss the interactions between different groups and the processes that cause those interactions when we focus on classifying things.  
Diff: 3    Page Ref:  
Topic: 1.4 Earth as a System
- 8) B  
Diff: 1    Page Ref:  
Topic: 1.3 Early Evolution of Earth
- 9) A  
Diff: 1    Page Ref:  
Topic: 1.1 What Is Earth Science?
- 10) C  
Diff: 1    Page Ref:  
Topic: 1.5 The Face of Earth
- 11) C  
Diff: 1    Page Ref:  
Topic: 1.5 The Face of Earth
- 12) E  
Diff: 1    Page Ref:  
Topic: 1.4 Earth as a System
- 13) Student may say that the hydrosphere (surf) and geosphere (rocks) are interacting. They may also involve the atmosphere, as its energy is driving the force of the waves. Less commonly they may invoke the biosphere, noting that the rocks may be made from the shells of organisms. In terms of the effects, they could note that the surf energy will diminish when it hits the land, but erosion may occur as a result of the surf hitting land.  
Diff: 2    Page Ref:  
Topic: 1.4 Earth as a System
- 14) A  
Diff: 2    Page Ref:  
Topic: 1.3 Early Evolution of Earth

Answer Key  
Testname: CH1

- 15) C  
Diff: 1    Page Ref:  
Topic: 1.1 What Is Earth Science?
- 16) A  
Diff: 1    Page Ref:  
Topic: 1.5 The Face of Earth
- 17) B  
Diff: 1    Page Ref:  
Topic: 1.4 Earth as a System
- 18) A  
Diff: 2    Page Ref:  
Topic: 1.5 The Face of Earth
- 19) C  
Diff: 1    Page Ref:  
Topic: 1.4 Earth as a System
- 20) D  
Diff: 1    Page Ref:  
Topic: 1.2 The Nature of Scientific Inquiry
- 21) C  
Diff: 1    Page Ref:  
Topic: 1.3 Early Evolution of Earth
- 22) D  
Diff: 1    Page Ref:  
Topic: 1.4 Earth as a System
- 23) C  
Diff: 2    Page Ref:  
Topic: 1.2 The Nature of Scientific Inquiry
- 24) D  
Diff: 1    Page Ref:  
Topic: 1.5 The Face of Earth
- 25) C  
Diff: 1    Page Ref:  
Topic: 1.4 Earth as a System
- 26) C  
Diff: 1    Page Ref:  
Topic: 1.2 The Nature of Scientific Inquiry
- 27) D  
Diff: 1    Page Ref:  
Topic: 1.5 The Face of Earth
- 28) D  
Diff: 1    Page Ref:  
Topic: 1.4 Earth as a System
- 29) A  
Diff: 1    Page Ref:  
Topic: 1.1 What Is Earth Science?
- 30) C  
Diff: 1    Page Ref:  
Topic: 1.4 Earth as a System

## Answer Key

Testname: CH1

31) B

Diff: 1 Page Ref:

Topic: 1.2 The Nature of Scientific Inquiry

32) C

Diff: 2 Page Ref:

Topic: 1.3 Early Evolution of Earth

33) A

Diff: 1 Page Ref:

Topic: 1.5 The Face of Earth

34) A

Diff: 1 Page Ref:

Topic: 1.5 The Face of Earth

35) C

Diff: 1 Page Ref:

Topic: 1.5 The Face of Earth

36) C

Diff: 1 Page Ref:

Topic: 1.5 The Face of Earth

37) B

Diff: 1 Page Ref:

Topic: 1.5 The Face of Earth

38) B

Diff: 1 Page Ref:

Topic: 1.1 What Is Earth Science?

39) A

Diff: 1 Page Ref:

Topic: 1.3 Early Evolution of Earth

40) A

Diff: 1 Page Ref:

Topic: 1.1 What Is Earth Science?

41) D

Diff: 1 Page Ref:

Topic: 1.2 The Nature of Scientific Inquiry and 1.3 Early Evolution of Earth

42) D

Diff: 1 Page Ref:

Topic: 1.4 Earth as a System

43) C

Diff: 1 Page Ref:

Topic: 1.3 Early Evolution of Earth

44) C

Diff: 1 Page Ref:

Topic: 1.3 Early Evolution of Earth

45) C

Diff: 1 Page Ref:

Topic: 1.4 Earth as a System

46) D

Diff: 1 Page Ref:

Topic: 1.5 The Face of Earth

Answer Key  
Testname: CH1

- 47) B  
Diff: 2      Page Ref:  
Topic: 1.4 Earth as a System
- 48) C  
Diff: 1      Page Ref:  
Topic: 1.3 Early Evolution of Earth
- 49) A  
Diff: 1      Page Ref:  
Topic: 1.2 The Nature of Scientific Inquiry
- 50) D  
Diff: 2      Page Ref:  
Topic: 1.5 The Face of Earth
- 51) A  
Diff: 1      Page Ref:  
Topic: 1.4 Earth as a System
- 52) B  
Diff: 1      Page Ref:  
Topic: 1.4 Earth as a System
- 53) C  
Diff: 1      Page Ref:  
Topic: 1.5 The Face of Earth
- 54) A  
Diff: 1      Page Ref:  
Topic: 1.1 What Is Earth Science?
- 55) D  
Diff: 1      Page Ref:  
Topic: 1.4 Earth as a System
- 56) A  
Diff: 1      Page Ref:  
Topic: 1.4 Earth as a System
- 57) D  
Diff: 2      Page Ref:  
Topic: 1.1 What Is Earth Science?
- 58) B  
Diff: 2      Page Ref:  
Topic: 1.2 The Nature of Scientific Inquiry
- 59) E  
Diff: 2      Page Ref:  
Topic: 1.1 What Is Earth Science?
- 60) C  
Diff: 2      Page Ref:  
Topic: 1.4 Earth as a System
- 61) D  
Diff: 1      Page Ref:  
Topic: 1.5 The Face of Earth
- 62) C  
Diff: 1      Page Ref:  
Topic: 1.5 The Face of Earth

Answer Key  
Testname: CH1

- 63) D  
Diff: 1 Page Ref:  
Topic: 1.1 What Is Earth Science?
- 64) C  
Diff: 1 Page Ref:  
Topic: 1.5 The Face of Earth
- 65) D  
Diff: 1 Page Ref:  
Topic: 1.1 What Is Earth Science?
- 66) D  
Diff: 1 Page Ref:  
Topic: 1.5 The Face of Earth
- 67) C  
Diff: 1 Page Ref:  
Topic: 1.1 What Is Earth Science?
- 68) C  
Diff: 1 Page Ref:  
Topic: 1.5 The Face of Earth
- 69) C  
Diff: 1 Page Ref:  
Topic: 1.5 The Face of Earth
- 70) C  
Diff: 1 Page Ref:  
Topic: 1.1 What Is Earth Science?
- 71) The dense oceanic crust sinks underneath the more buoyant continental crust at this type of convergent plate boundary.  
Diff: 2 Page Ref:  
Topic: 1.5 The Face of Earth
- 72) D  
Diff: 1 Page Ref:  
Topic: 1.5 The Face of Earth
- 73) D  
Diff: 1 Page Ref:  
Topic: 1.5 The Face of Earth
- 74) D  
Diff: 1 Page Ref:  
Topic: 1.4 Earth as a System
- 75) B  
Diff: 1 Page Ref:  
Topic: 1.4 Earth as a System
- 76) B  
Diff: 1 Page Ref:  
Topic: 1.4 Earth as a System
- 77) FALSE  
Diff: 1 Page Ref:  
Topic: 1.5 The Face of Earth
- 78) B  
Diff: 1 Page Ref:  
Topic: 1.4 Earth as a System



## Answer Key

Testname: CH1

79) C

Diff: 1      Page Ref:  
Topic: 1.5 The Face of Earth

80) C

Diff: 2      Page Ref:  
Topic: 1.5 The Face of Earth

81) D

Diff: 1      Page Ref:  
Topic: 1.1 What Is Earth Science?

82) D

Diff: 1      Page Ref:  
Topic: 1.5 The Face of Earth

83) C

Diff: 1      Page Ref:  
Topic: 1.2 The Nature of Scientific Inquiry

84) C

Diff: 2      Page Ref:  
Topic: 1.4 Earth as a System

85) A

Diff: 2      Page Ref:  
Topic: 1.5 The Face of Earth

86) B

Diff: 1      Page Ref:  
Topic: 1.5 The Face of Earth

87) A

Diff: 1      Page Ref:  
Topic: 1.5 The Face of Earth

88) B

Diff: 2      Page Ref:  
Topic: 1.4 Earth as a System

89) C

Diff: 2      Page Ref:  
Topic: 1.4 Earth as a System

90) B

Diff: 2      Page Ref:  
Topic: 1.5 The Face of Earth

91) A

Diff: 1      Page Ref:  
Topic: 1.2 The Nature of Scientific Inquiry

92) A

Diff: 1      Page Ref:  
Topic: 1.1 What Is Earth Science?

93) A

Diff: 1      Page Ref:  
Topic: 1.1 What Is Earth Science?

94) D

Diff: 2      Page Ref:  
Topic: 1.5 The Face of Earth

## Answer Key

Testname: CH1

95) B

Diff: 1      Page Ref:  
Topic: 1.4 Earth as a System

96) C

Diff: 1      Page Ref:  
Topic: 1.5 The Face of Earth

97) A

Diff: 1      Page Ref:  
Topic: 1.5 The Face of Earth

98) B

Diff: 1      Page Ref:  
Topic: 1.3 Early Evolution of Earth

99) C

Diff: 1      Page Ref:  
Topic: 1.5 The Face of Earth

100) B

Diff: 1      Page Ref:  
Topic: 1.3 Early Evolution of Earth

101) E

Diff: 1      Page Ref:  
Topic: 1.1 What Is Earth Science?

102) A

Diff: 1      Page Ref:  
Topic: 1.5 The Face of Earth

103) A

Diff: 1      Page Ref:  
Topic: 1.1 What Is Earth Science?

104) D

Diff: 1      Page Ref:  
Topic: 1.4 Earth as a System

105) D

Diff: 1      Page Ref:  
Topic: 1.1 What Is Earth Science?

106) B

Diff: 1      Page Ref:  
Topic: 1.5 The Face of Earth

107) A

Diff: 1      Page Ref:  
Topic: 1.5 The Face of Earth

108) B

Diff: 1      Page Ref:  
Topic: 1.5 The Face of Earth

109) A

Diff: 1      Page Ref:  
Topic: 1.1 What Is Earth Science?