

Test Bank for Environmental Geology 5th Reichard

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Chapter 01 Test Bank: Humans and the Geologic Environment

CORRECT ANSWERS ARE
LOCATED IN THE 2ND HALF OF
THIS DOC.

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

- 1) The biggest environmental issue facing humanity is sustainability.
☐ true
☐ false
- 2) A scientific law describes the relationship between several different hypotheses.
☐ true
☐ false
- 3) As one of many species living on Earth, humans are very limited in their ability to impact the environment.
☐ true
☐ false
- 4) In geologic time, humans have existed for only a very brief amount of Earth's history.
☐ true
☐ false

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

- 5) Which trend best describes human population growth?
A) Exponential
B) Linear
C) Tangential
D) Planar
E) Unpredictable
- 6) Which of the following measures do environmentalists suggest may be necessary in order for humans to live in a sustainable manner?
A) Stabilize the population
B) Conserve resources
C) Reduce per capita consumption of resources
D) Develop renewable energy resources
E) All of the answers listed here

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- 7) The tragedy of the commons is an important concept related to environmental degradation and human behavior. Which of the following best describes this concept?
- A) When the self-interest of individuals destroys natural resources being shared by society.
 - B) When a common disease spreads through society due to poor sanitation.
 - C) When over population creates living conditions that lower the quality of life.
 - D) When humans act irrationally during a large-scale natural disaster.
 - E) When humans overreact to an environmental threat and then limit economic growth.
- 8) Which of the following refers to the process by which the physical world is examined in a logical manner?
- A) Scientific Method
 - B) Elemental Method
 - C) Plausibility Theory
 - D) Inquiry Theory
 - E) Intelligent Design
- 9) Which term refers to a scientific explanation of data that can be tested in such a way that shows it to be false?
- A) Hypothesis
 - B) Uncertainty
 - C) Plausibility
 - D) Educated Guess
 - E) All of the answers listed here
- 10) Which of the following is NOT an attribute of a good scientific explanation?
- A) Sustainable
 - B) Falsifiable
 - C) Peer-Reviewed
 - D) Consistent with all the data available
 - E) All of the answers listed here
- 11) About how many years old is the Earth as shown by science?
- A) 4.5 billion
 - B) 10 thousand
 - C) 4.5 trillion
 - D) 4.5 thousand
 - E) 4.5 million

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- 12) Which of the following terms refers to the use of resources in such a way that future generations will have a fair share and inherit a quality environment?
- A) Sustainability
 - B) Renewability
 - C) Catastrophism
 - D) Environmentalism
 - E) All of the answers listed here
- 13) This type of dating uses radioactive elements and their decay products to determine an absolute age for an earth material.
- A) Radiometric Dating
 - B) Relative Dating
 - C) Fossilization Timing
 - D) Petrographic Dating
 - E) Superposition
- 14) How does the ecological footprint for people living in developed (industrialized) nations compare to that of people living in developing nations?
- A) It is greater
 - B) It is smaller
 - C) It is equivalent
 - D) This is not a plausible comparison
 - E) It is not defined for developing nations
- 15) How was the geologic time scale developed?
- A) By correlating exposed rock sections from around the world.
 - B) By systematically dividing all of earth history into equally spaced time intervals, similar to the hours and minutes on a clock.
 - C) By radiometrically dating successive intervals in rock layers.
 - D) By compiling Biblical and historical records to reconstruct Earth's history.
 - E) All of the answers listed here.
- 16) When defining environmental risks, scientists must primarily consider which of the following components?
- A) The probability that an event will occur and the expected consequences of that event.
 - B) The consequences of an event only.
 - C) The magnitude and consequences of an event.
 - D) The measures necessary to prevent environmental risks from occurring.
 - E) Whether an event is even possible.

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- 17) Which of the following is NOT TRUE of incremental processes?
- A) They take place somewhat randomly as discrete events.
 - B) They generate small changes with time.
 - C) They can be difficult to recognize.
 - D) Deforestation is an example of an incremental process.
 - E) Climate change is an example of an incremental process.
- 18) Which of the following statements is NOT TRUE regarding the Earth system?
- A) Humans are not capable of affecting the system.
 - B) It consists of several subsystems.
 - C) It is dynamic and interactive.
 - D) It is affected by other bodies in the solar system.
 - E) Earth's life forms are dependent on the system.
- 19) Which term is used to describe the amount of biologically productive land/sea area necessary to support the lifestyle of an individual?
- A) Ecological Footprint
 - B) Sustainable Square
 - C) Environmental Area
 - D) Geologic Commons
 - E) Consumption Rate
- 20) Which of the following are potentially limiting factors associated with food production and distribution?
- A) All of the answers listed here
 - B) Water supply and resources
 - C) Mineral resources
 - D) Energy resources
 - E) Soil erosion
- 21) Almost all of the environmental problems discussed in class were ultimately tied to one factor. Which of the following is the root cause of most of our problems?
- A) Human population
 - B) Air pollution
 - C) Food production
 - D) Energy production
 - E) Water pollution
- 22) The two critical factors that led to the development of Earth's diversity of life are
- A) the surface temperature of the Earth and its ability to retain the atmosphere.
 - B) the amount of solar insolation and the presence of the Moon.
 - C) the distance between Sun and Moon and the effect of the Moon on Earth.
 - D) the amount of glacial ice and the number of oceans.

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- 23) What is meant by the tragedy of the commons?
- A) Common people go through tragic environmental problems.
 - B) The self-interest of people results in the destruction of a common or shared resource.
 - C) Common societies are disconnected from the natural environment.
 - D) Environmental problems are very common in nature.
- 24) What is a scientific theory?
- A) A prediction made about a scientific phenomenon
 - B) A possible explanation that has not yet been tested
 - C) A possible explanation that has been tested and found to be false
 - D) A widely accepted and logical explanation of natural phenomena that has survived rigorous testing
- 25) What is the Law of Superposition?
- A) Sedimentary rocks are always deposited in horizontal layers
 - B) Sedimentary features are always superimposed on other types of rocks
 - C) Sedimentary layers become progressively older with depth
 - D) Sedimentary layers become progressively younger with depth
- 26) Why is pollution considered a geologic hazard?
- A) It always involves materials not found in nature.
 - B) It may involve extraterrestrial phenomena.
 - C) It directly impacts human health.
 - D) It involves nonrenewable resources.
- 27) What is used to determine the age of a rock in years?
- A) Heat
 - B) Gravity
 - C) Solar radiation
 - D) Radioactive elements
- 28) Which of the following is not a sporadic geologic process?
- A) Eroding of sedimentary rocks
 - B) Landslides
 - C) Earthquakes
 - D) Floods
- 29) What is an example of creeping normalcy?
- A) Landsliding
 - B) Volcanic activity
 - C) The process of deforestation
 - D) Earthquake activity

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- 30) What is an interdisciplinary field of study?
- A) A study of special environments
 - B) A combination of two or more fields
 - C) Any specialized field in geology
 - D) Any highly specialized field focusing on the environment
- 31) What is the downside of specialization?
- A) Scientists lose sight of nature as a whole
 - B) Very few jobs exist
 - C) Specialized jobs do not pay well
 - D) None of these choices are correct
- 32) What comprises the geosphere?
- A) All of the organisms on Earth
 - B) All of the water on Earth
 - C) All of the gases surrounding the Earth
 - D) The solid Earth
- 33) Which of the following is NOT an adverse consequence of deforestation?
- A) Increased soil erosion
 - B) Increased landslide activity
 - C) Decreased use of resources per capita
 - D) Decreased plant and animal life
- 34) How might deforestation contribute to global warming?
- A) Trees no longer prevent soil erosion.
 - B) Trees no longer remove carbon dioxide from the atmosphere.
 - C) Trees no longer produce oxygen.
 - D) Burning of trees increases the heat output of Earth.
- 35) Linear growth occurs when the amount added over successive time periods
- A) increases.
 - B) decreases.
 - C) increases then rapidly decreases.
 - D) stays the same.
- 36) Exponential growth occurs when the amount added over successive time periods
- A) increases.
 - B) decreases.
 - C) increases then rapidly decreases.
 - D) stays the same.
- 37) What is the projected population of Earth in 2050?
- A) 95 million
 - B) 9.5 billion
 - C) 95 billion
 - D) 950 billion

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- 38) Why didn't human population collapse as predicted by Malthus?
- A) His mathematical model was flawed
 - B) The rate of population growth unexpectedly decreased
 - C) Food production increased at an exponential rate
 - D) Food production increased at a linear rate
- 39) Why is infinite population growth not possible?
- A) Topsoils are being lost at an alarming rate.
 - B) Water supplies are stretched to the limit in many places.
 - C) Supplies of crude oil and gas are in decline.
 - D) All of these choices are correct.
- 40) What is meant by the term sustainability?
- A) Food production is sustained by fertilizers.
 - B) A system or process can be maintained for an indefinite period of time.
 - C) Soils are sustained by conservation measures.
 - D) Resources are replenished by geological processes.
- 41) What is meant by demographic transition?
- A) Populations stabilize when birth and death rates are equal.
 - B) Populations increase when birth rates exceed death rates.
 - C) Populations decrease when death rates exceed birth rates.
 - D) Populations decrease as food production is diminished.
- 42) Which factors are key to sustainability?
- A) Earth's total population
 - B) Use of resources per capita
 - C) Stabilizing total population and use of resources per capita
 - D) None of these choices are correct
- 43) What is meant by the term ecological footprint?
- A) The total number of ecosystems present on Earth
 - B) The amount of biologically-productive land and sea area needed to support the lifestyle of humans
 - C) The amount of land not affected by human activity
 - D) The amount of coastline inhabited by humans

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- 44) What is the estimated average ecological footprint of humanity?
- A) 6 acres per person
 - B) 60 acres per person
 - C) 600 acres per person
 - D) 6000 acres per person
- 45) What is the biggest environmental issue facing humanity?
- A) Volcanic eruptions may cause climate change
 - B) Coastlines may be drowned by rising sea levels
 - C) Depletion of local drinking water supplies
 - D) Sustainability
- 46) What is the key problem facing sustainability?
- A) Economic prosperity is limited by food production.
 - B) Economic prosperity is limited by money.
 - C) Economic prosperity is limited by technology.
 - D) Economic prosperity is based on growth.
- 47) Which of the following best describes why the population of Easter Island declined from about 10,000 to 1,000 people in a matter of a few generations?
- A) Continued eruptions of a volcano occurred that had previously been dormant.
 - B) Climatic changes made the environment inhospitable.
 - C) A tsunami (tidal) wave swept over the island and the population never recovered.
 - D) The island's natural ecosystem collapsed due to an expanding population.
 - E) A large landslide occurred and the population never recovered.
- 48) Which of the following best describes the relationship between human activity and the increased algae blooms on Lake Erie?
- A) Agricultural runoff of nutrients and draining of the natural swamp
 - B) Lower lake levels due to less rainfall associated with climate change
 - C) Higher lake levels due to increased runoff from urbanization
 - D) Increased nutrient input from Lake Huron
 - E) All of the answers listed here

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Answer Key

Test name: Chapter 01 Test

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- 1) TRUE
- 2) FALSE
- 3) FALSE
- 4) TRUE
- 5) A
- 6) E
- 7) A
- 8) A
- 9) A
- 10) A
- 11) A
- 12) A
- 13) A
- 14) A
- 15) A
- 16) A
- 17) A
- 18) A
- 19) A
- 20) A
- 21) A
- 22) A
- 23) B
- 24) D
- 25) C
- 26) C
- 27) D
- 28) A
- 29) C
- 30) B
- 31) A
- 32) D
- 33) C

- 34) B
- 35) D
- 36) A
- 37) B
- 38) C
- 39) D
- 40) B
- 41) A
- 42) C
- 43) B
- 44) A
- 45) D
- 46) D
- 47) D
- 48) A