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 bests 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 sweep 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 bests 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 Bank: Humans and the Geologic Environment

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

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