

Name: \_\_\_\_\_

Date: \_\_\_\_\_

### Earth Science Term 3 Review

1) The Grinnell Glacier in Glacier National Park, Montana has been retreating rapidly since the early 1900's. (2) Photographs taken of the glacier document its reduced size since 1850. (3) Mountain glaciers are excellent monitors of climate change. (4) The worldwide shrinkage of mountain glaciers is caused by a combination of climate cycles and increased greenhouse gases.

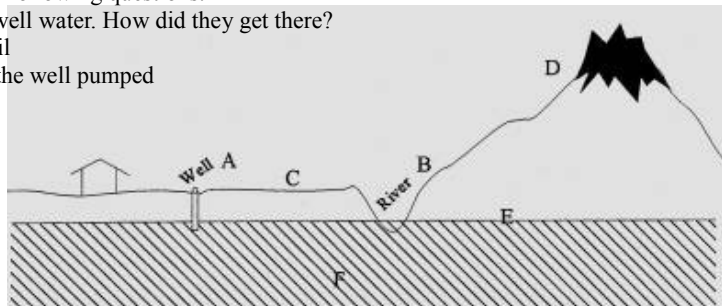
Which of the sentences in this paragraph is an inference?

- A. 1
  - B. 2
  - C. 3
  - D. 4
- 2) Which sentence has data to support the argument that the glacier is shrinking?
- A. 1
  - B. 2
  - C. 3
  - D. 4
- 3) Water moves against gravity up a tree stem and upwards through soil. What property of water allows this to happen?
- A. density
  - B. solubility
  - C. color
  - D. surface tension
  - E. taste
- 4) How does the salt content of sea water affect its usefulness to people? The salt
- A. reduces the number of ways people can use it.
  - B. makes it valuable for farming and aquariums.
  - C. makes it impossible for living things to survive.
  - D. makes it as useful as freshwater, just different.
- 5) Where is the majority of the Earth's water found?
- A. In rivers
  - B. In lakes
  - C. In oceans
  - D. In wetlands
- 6) What has caused our nation to reduce the pollution in some of its lakes?
- A. Scientific studies showing the effect of pollutants on fish and animal life.
  - B. The fact that most people who swam in polluted lakes got sick.
  - C. Boats and water sport vehicles were being damaged by the pollutants.
  - D. Factories that were polluting lakes developed products that didn't need a water source.
- 7) Which of the following aspects of stream water would NOT affect the types of life that could live in the stream?
- A. temperature
  - B. turbidity
  - C. dissolved oxygen content
  - D. molecular composition of water
  - E. stream gradient

8) Use this diagram of a cross section of the earth to answer the following questions.

Insecticides sprayed on a field near point "C" are found in the well water. How did they get there?

- A. they were carried by water flowing through the soil
  - B. they evaporated into the air and were drawn in as the well pumped
  - C. the well was open when they were sprayed
- 9) The line labeled "E" is called the:
- A. water table
  - B. watershed
  - C. recharge area
  - D. reclamation dam



10) If more wells were built and a great deal of water was pumped from them, what might happen to the river?

- A. its flow would increase
  - B. its flow would decrease
  - C. the wells would not affect the river
  - D. more snow would melt and maintain the balance
- 11) The water table will remain in the same place if
- A. losses at "B" and "C" are greater than gains at "D"
  - B. losses at "B" and "C" are less than gains at "D"
  - C. the well at "A" doesn't pump more than "B"
  - D. snow and rain from "D" replace the losses at "A" and "B"

- 12) Which best describes the future of water use in Southern Utah?
- The use of computers will enable us to better recognize water needs and control water distributed to those communities.
  - The decline in growth of cities in Southern Utah will decrease the demand for water in that part of the state.
  - The supply of water in Southern Utah will dry up and the area will become a desert.
  - Meteorologists will be able to predict and control when storms hit Southern Utah.

- 13) Which of the following is NOT a source of water for people in Utah?

- ground water
- streams
- lakes
- glaciers

- 14) Water is placed over a burner until it boils. The graph shows the temperature at each two minute interval. The experiment ended at 20 minutes. Yet the fellow extrapolated until 26 minutes. At what Temperature did the water boil?

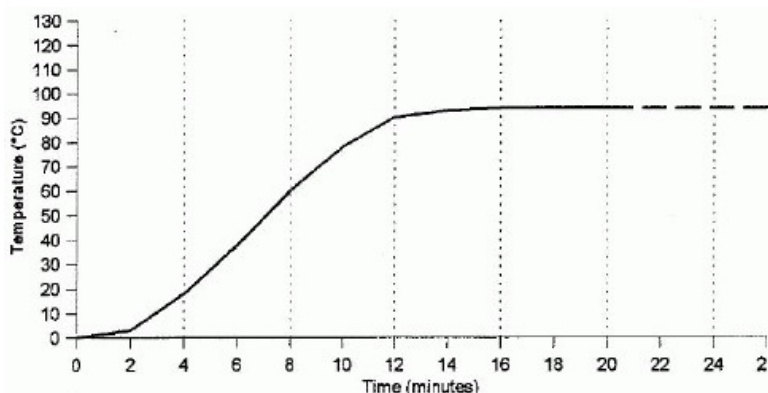
- 35
- 70
- 94
- 100

- 15) If the water was left to boil for 1 hour more, how hot would the water get?

- 32
- 96
- 100
- 212

- 16) The way to save the most water in your home is to:

- use less water in the yard
- do less cleaning
- use less in cooking
- put a brick in the back of the toilet



- 17) Jill wants to measure the stream flow volume (amount of water flowing through a stream) of the stream that flows down a nearby canyon. What aspects of the stream should she measure?

- The width, length, and depth of the stream
- The width, depth, and meters per second flow of the stream
- The meters per second flow of the stream
- The length, depth, and meter per second flow of the stream
- The width and length of the stream

- 18) Water expands when it freezes. What would happen if water did NOT expand when frozen?

- Ice would sink, ponds would freeze from the bottom up, and many aquatic plants and animals would die
- Water would be more dense than wood therefore wood would not float. Beavers would be adversely affected
- The surface tension would be destroyed. Water striders and other creatures that walk on the water's surface would sink
- Water would not evaporate therefore clouds would not form. There would be no snow or rain
- Water would not dissolve many substances. It would be impossible to make root beer or clean bathrooms

- 19) Why is water called the universal solvent?

- it can solve any problem
- it can dissolve many substances
- it is found many places in the universe
- it is part of most living things

- 20) An oil spill at sea often damages birds and sea mammals but fish are relatively unaffected. What properties of water and oil are responsible for this situation?

- oil is less dense than water and floats on the surface
- oil is darker in color and has a stronger odor
- water is harmless to sea life, oil is a poison to most things
- water floats when it freezes, oil sinks when frozen

- 21) Which best describes the future of water use in Southern Utah?

- The use of computers will enable us to better recognize water needs and control water distributed to those communities.
- The decline in growth of cities in Southern Utah will decrease the demand for water in that part of the state.
- The supply of water in Southern Utah will dry up and the area will become a desert.
- Meteorologists will be able to predict and control when storms hit Southern Utah.

- 22) People protect watershed areas in many ways, including placing bans on dogs and horses in the areas near streams. Why?

- Dogs and horses drink a great deal of water that people need
- The animals' wastes can wash into the streams, polluting them
- More people will visit the area if they can bring their pets
- Animals frighten wildlife and ruin the natural environment
- Animals will walk in the water, stirring up mud

23) A 9th grade student wants to test the effect of excess fertilizer on algae growth in freshwater versus algae growth in saltwater. The student predicts the saltwater will be more affected. A gram of fertilizer is added to a liter of local pond water in one container and a liter of saltwater from the classroom aquarium in another. Both samples are placed in the same windowsill for a week. Daily observations are recorded.

	<b>Saltwater</b>	<b>Freshwater</b>
<b>Day 1</b>	Water is cloudy. Some floating organisms	Water is clear. Some floating organisms.
<b>Day 2</b>	No change.	No change.
<b>Day 3</b>	Water is cloudier.	Green algae start to appear
<b>Day 4</b>	No change.	More algae. It is difficult to see through the water.
<b>Day 5</b>	Water is a little cloudier. Some organisms still floating.	Water is a lot greener than day one. Lots of floating material.

Was the experiment adequate to resolve the student's question?

- A. No, the hypothesis was not correct
  - B. No, careful observations were not made
  - C. Yes, if the results are reproducible
  - D. Yes, he used the correct amount of fertilizer
- 24) Which factor affects the boiling point of water?

- A. the amount of air pressure present
- B. the latitude of the water's location
- C. the longitude of the water's location
- D. the air temperature around the water

25) An oceanographer collected data on the physical properties of the sea in several locations. Then she counted the number of sea snails in the same locations over a period of several days. Which factor is not easily analyzed with this data?

- A. temperature
- B. salinity
- C. depth
- D. snail populations

<b>Location</b>	<b>Temperature (degrees C)</b>	<b>Salinity (parts per thousand)</b>	<b>Depth (meters)</b>	<b>Average number of snails</b>
<b>Site 1</b>	15	31	22	56
<b>Site 2</b>	22	30	7	31
<b>Site 3</b>	16	30	17	49

26) Why did the oceanographer count the snail populations several times and do an average?

- A. to increase the accuracy of her results
- B. to make sure she didn't miss any
- C. to have more opportunities to see the snails
- D. to see if the snails are moving from one place to another

27) Using this data, what relationship appears between depth and temperature?

- A. no apparent relationship exists
- B. deeper waters are warmer
- C. deeper waters are cooler
- D. deeper waters lose heat more rapidly

28) Using this data, which physical properties do sea snails appear to prefer?

- A. Colder, deeper water
- B. Colder, shallower water
- C. Warmer, deeper water
- D. Warmer, shallower water

29) Where would you expect the greatest number of living organisms in the ocean?

- A. on the surface
- B. in the top 100 meters
- C. in the top half mile
- D. in the lowest regions

30) Most scientists agree that global warming is taking place, and as a result, sea levels will rise. What do they recommend people do to prevent this?

- A. Reduce fossil fuel consumption.
- B. Reduce nuclear energy production.
- C. Increase electricity use in order to reduce CO2 emissions.
- D. Increase fossil fuel use in order to save electricity.

31) Fish living far below the oceans' surface are rarely or never displayed at seawater aquariums. Why?

- A. They are fast swimmers and hard to catch
- B. The types of food they need are not available at aquariums
- C. They have adapted to intense pressures of the deep
- D. Aquariums do not think people will pay to see them

32) What do organisms living in the inter-tidal zone (area of land between low and high tides) have in common?

- A. they eat the same things
- B. they like the same temperatures
- C. they have few predators
- D. they can survive out of water

33) What is the main cause of waves on the ocean?

- A. currents
- B. tides
- C. the moon
- D. wind

34) A student wonders if waves are caused by wind. To test this he goes to a beach and measures the wind speed, wind direction and wave height for a week. According to this table, what conclusion best summarizes this experiment?

Day	Wind Speed (mph)	Wind Direction	Average Wave Height (meters)
1	8	S	2.4
2	5	S	1.0
3	16	S	.8
4	22	S	1.0
5	13	SW	1.2
6	9	N	1.3
7	6	N	.5

- A. Wave height depends on many factors but not wind speed or direction.
- C. Waves move for no testable reason.
- D. Wave height at the beach does not depend on local winds.
- D. Wave height is determined by movements of currents and tides

35) Which of the following hypothesis would be a logical follow-up to this experiment?

- A. If waves are not influenced by wind, then nothing else will affect them.
- B. If winds out at sea are strong, wave height will be higher the next day.
- C. If waves are not interfered with by coral reefs, then they will be higher.
- D. If currents are present, then waves will be smaller.

36) According to this table of his results, does wave height appear to be related to wind speed or direction?

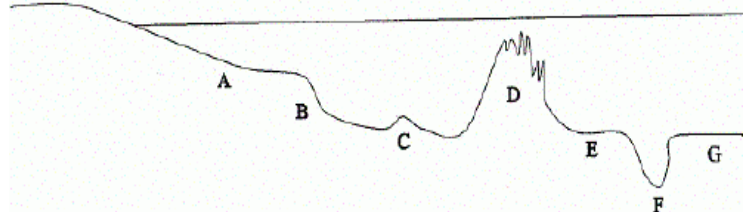
- A. Yes, the highest waves occurred during a SE wind.
- B. Yes, the lowest waves occurred during the lowest wind
- C. No, there is no pattern of wind speed or direction related to wave height.
- D. No, the measurements this student took were inaccurate and cannot be used.

37) While walking along an ocean beach, you and a friend find live barnacles and mussels attached to rocks and hermit crabs in shells. You infer that these organisms can live under water much of their life. What data would support this inference?

- A. A tide chart showing that at high tide the beach is underwater.
- B. The barnacles are anchored to some rocks.
- C. There are fish swimming in the ocean nearby.
- D. All three of the animals found have shells.

38) Use the diagram to answer the following question: Organisms living at "G" would be adapted to which kind of conditions?

- A. high amounts of light, high pressures
- B. high amounts of light, low pressures
- C. no light, high pressures
- D. no light, low pressures



39) The feature labeled "A" is called the:

- A. ridge
- B. abyssal plains
- C. continental shelf
- D. continental rise

40) The greatest number of living things would be found in which area?

- A. A
- B. B
- C. C
- D. E

41) Where in the ocean would large schools of fish most likely be found?

- A. in deep water
- B. in areas of up welling
- C. near river mouths
- D. near undersea volcanoes

42) What is the main cause of ocean tides?

- A. currents
- B. the sun and the moon
- C. waves
- D. wind

43) Which process returns nutrients and gases collected in deep ocean water to the surface?

- A. currents
- B. rip tides
- C. up-welling
- D. waves

44) What important function do currents, waves and El Nino provide for living things in the sea?

- A. Provides a way for living things to move around
- B. Brings nutrients up from deeper water
- C. Mixes land and sea organisms
- D. Allows Earth to have weather

45) Which of the following is NOT a physical dynamic of oceans?

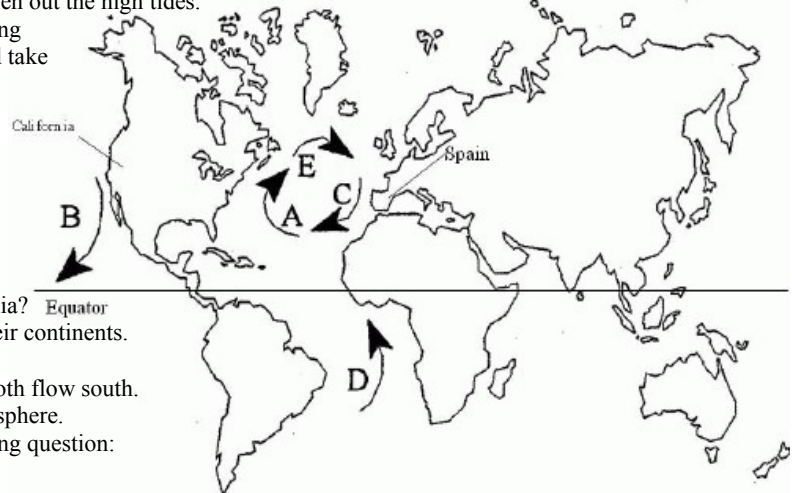
- A. fish
- B. waves
- C. ocean currents
- D. tides

46) How has technology increased our understanding of the ocean?

- A. Oceanographers use remote sensing satellites to map the ocean floor.
- B. Technology has prevented the pollution of ocean waters.
- C. Technology has allowed oceanographers to identify plate boundaries and prevent their movement.
- D. Oceanographers have used technology to even out the high tides.

47) Use this map of ocean currents to answer the following question: A boat sailing across the Atlantic Ocean would take advantage of which current on the journey east?

- A. A
- B. B
- C. C
- D. D
- E. E



48) If you had no data other than the map above, what evidence could you supply to support the inference that the coast of Spain has a climate like the coast of California?

- A. Spain and California are both on the west side of their continents.
- B. Spain and California are both near an ocean.
- C. Ocean currents flowing near Spain and California both flow south.
- D. Spain and California are both in the Northern Hemisphere.

49) Use this map of ocean currents to answer the following question: Which current would be warm?

- A. A
- B. B
- C. C
- D. D

50) Use this map of ocean currents to answer the following question: How would current "B" affect the land it runs near?

- A. increase temperatures
- B. decrease temperatures
- C. would not affect temperatures
- D. decrease humidity

51) What type of changes would you expect as you go down from the ocean's surface to its bottom?

- A. Temperature, pressure, light, and density all decrease
- B. Temperature and pressure increase; light and density decrease
- C. Temperature and light decrease; pressure and density increase
- D. Temperature and density decrease; light and pressure increase

52) When do areas of upwelling in the ocean occur?

- A. When fish gather for feeding
- B. When the tides are at their lowest
- C. When surface water is replaced by deep water
- D. When the currents collide and form whirlpools

53) Where would the warmest water in the ocean be found?

- A. the poles, on the surface
- B. the poles, deep below the surface
- C. the equator, deep below the surface
- D. the equator, on the surface

54) What is the main cause of ocean currents?

- A. The prevailing winds
- B. The Coriolis effect
- C. Waves
- D. The sun and the moon

55) Kendra's mom is purchasing a car, but cannot decide what color to get. Kendra advises her mom that a car with a black exterior will be uncomfortable in the summer. This observation is correct because dark objects, as compared to lighter colored objects,

- A. reduce heat transfer.
- B. are generally more dense.
- C. absorb more of the Sun's energy.
- D. reflect sunlight more efficiently.

56) The cycles of sun spots have been monitored since Galileo's time. Evidence has shown that there may be a relationship between the climate on Earth and solar activity. The evidence shows that an increase in solar activity is associated with warmer than normal climates and that a decrease is associated with colder climates. Which of the following best describes the importance of understanding the relationship between solar activity and climate?

- A. Variations in solar activity and climate affect many aspects of human life.
- B. Solar activity needs further study to see if Galileo's observations were correct.
- C. Most climate changes are the direct result of modern human activities.
- D. Future climate prediction is essential for scientific investigations to continue.

57) Which of the following is NOT a fossil fuel?

- A. coal
- B. gas
- C. oil
- D. wood

58) Over the last few decades, scientists have indicated an increase in global temperatures. Scientists have been encouraged to investigate what factors are causing these changes. How has this new research about global warming affected human life?

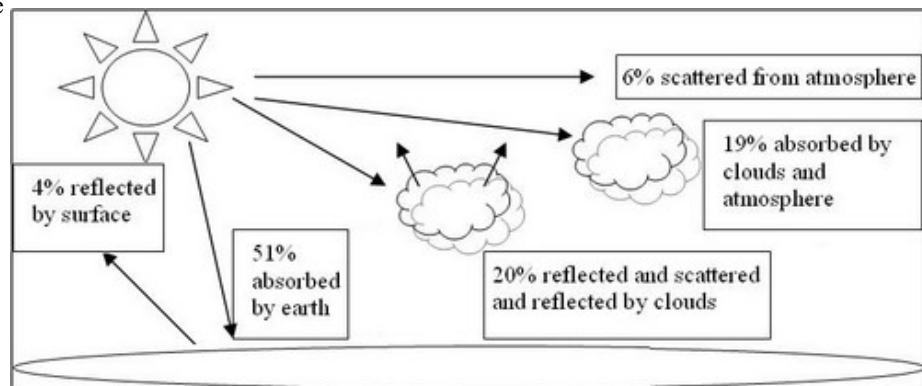
- A. Global warming has decreased the amount of fossil fuels used by human activities.
- B. More people are aware of the possible impact their activities have on global warming.
- C. Students are required to learn about global warming in all science classes.
- D. There has been no significant change in human life due to global warming.

59) Which of the following is the best title for the above diagram?

- A. How the Greenhouse Effect Works
- B. The Creation of Weather Patterns on Earth
- C. The Use of Fossil Fuels on Earth
- D. How Energy is Distributed on Earth

60) The 'greenhouse effect' could cause a number of problems. Which is NOT a problem associated with it?

- A. rising sea level
- B. changes in weather patterns
- C. changes in ocean currents
- D. increased skin cancer



61) Heat is a form of energy. Why?

- A. It can be produced in many ways
- B. It can do work
- C. It happens to atoms
- D. It is found everywhere
- E. It can change into other forms

62) The main source of 'greenhouse' gas is

- A. burning of fossil fuels
- B. aerosol cans
- C. the rainforests
- D. methane from rice paddies

63) Ms. Magnificent, Lance's Earth Systems teacher, gave him an assignment to design and conduct an energy related experiment. Lance decided to compare the amount of energy required to melt ice with the amount of energy required to melt snow. Which of the following hypothesis compares the energy required to melt ice with the energy required to melt snow?

- A. If salt is applied to snow and ice, then snow will melt faster
- B. Ice is 50 more dense than snow
- C. If the polar ice caps melted, then how many cities would be flooded?
- D. If energy is applied to snow and ice, then it will change water from a liquid to a solid state
- E. If energy is applied to snow and ice, then it will require 50 more energy to melt ice than snow

64) Which of the following best describes this statement? "By increasing the amount of greenhouse gases, it is possible to increase the greenhouse effect."

- A. Hypothesis
- B. Observation
- C. Fact
- D. Law

65) Which of the following is NOT considered a 'greenhouse' gas?

- A. Carbon dioxide
- B. Methane
- C. Water vapor
- D. Nitrogen