

UNIT TEST :

Fresh and Saltwater Systems



Student _____

Class _____

Climate Question (Worth 2 marks)

	J	F	M	A	M	J	J	A	S	O	N	D
Precipitation (mm)	146.9	119.1	122.6	124.4	110.5	98.4	96.8	109.6	94.9	128.9	154.4	167
Daily Mean (°C)	-5.8	-6.0	-1.7	3.6	9.4	14.7	18.3	18.1	13.8	8.5	3.4	-3.0

The Precipitation and Temperature information in the table above identifies a Canadian city. From the data you might be able to infer that this data represents the City of

- A. Calgary B. Winnipeg C. Halifax D. Quebec City

Your inference is based on the fact that ...

- A. There are extreme periods of precipitation indicating it is located in the Prairies
- B. There are few extremes in temperature indicating it is by a large body of water
- C. Its highest temperature indicates that it might be near the Great Lakes
- D. Its highest temperature indicates that the **C of RED** keeps it warm most of the time

1.1 The Distribution of Water on Earth

1. Because our planet has a lot of water on it's surface and is rich in vegetation, astronauts from space have described it as the ...
 - A Aqua planet
 - B Water world
 - C Blue planet
 - D Blue Green World
2. Of all the water on the Earth, the only water that is fit for humans to drink is called ...
 - A pure water
 - B potable water
 - C purified water
 - D spring water
3. Many substances are dissolved in freshwater and saltwater. This is because water is a solvent that is widely used to dissolve substances. '**Water**' is known as the ...
 - A universal solvent
 - B universal solute
 - C common solute
 - D common solvent

1.2 Water Quality

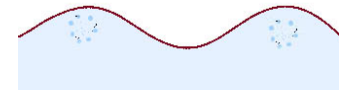
4. Most of the substances that are dissolved in water are salts. Not just sodium chloride, but many different kinds of salts. The total amount of all salts dissolved in the water is referred to as its ...
 - A quality
 - B salinity
 - C potability
 - D distillation
5. **Hard water** is water that contains high concentrations of dissolved ...
 - A Gold and silver
 - B Calcium and chlorine
 - C Hydrogen and oxygen
 - D Calcium and magnesium
6. Water quality is a vital issue because many of the organisms, which can harm humans, are too small to see with the naked eye. Another organism, which can give humans intestinal problems, is Giardia, which is a microscopic ...
 - A virus
 - B bacteria
 - C parasite
 - D fungus
7. When testing samples of water for the presence of living organisms, the students put 125ml of their samples into separate flasks and added 5 drops of **bromothymol blue**. They labeled it, put a stopper in it and placed it in a warm dark place for 24 hours. What were they looking for, to indicate that living organisms were present in the water?
 - A A temperature change
 - B A color change
 - C The presence of bubbles
 - D A decrease in water level

2.1 Waves and Tides

8. **Waves** are movements on the surface of the water. The kinds of waves that boats make as they travel across the surface of the water are called ...

- A tides
- B wash
- C ribbon
- D dimple

9. Sometimes, in order to understand a concept that is important, **models** are used to help us visualize it.



The movement of waves shown here can be modeled by using ...

- A a rope tied to a door
 - B a ball bouncing
 - C a ball rolling down a ramp
 - D dropping a rock in a pail
10. Extremely large waves that can grow to be as high as a 15-storey building are called **tsunamis**. These waves spread out over a very long distance from their source, which is ...
- A an earthquake
 - B a hurricane
 - C a tornado
 - D a monsoon

2.2 Erosion and Deposition

11. **Stream characteristics** help scientists understand where different organisms might live in a river and how they might be affected by human activities. These same stream characteristics are used when dams and bridges are designed and built by ...

- A technicians
- B biologists
- C engineers
- D environmentalists

12. A river's **sediment load** is the amount of ...

- A organisms it is able to sustain
- B water-borne materials it can carry
- C pollution it is able to filter out
- D erosion it can make as it flows

13. Major North American watersheds are determined by the **Continental Divide**.



This is where you find the highest land and is located in the ...

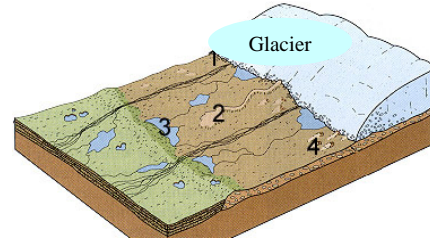
- A Appalachian Mountains
- B Great Smoky Mountains
- C Cascade Mountains
- D Rocky Mountains

2.3 Processes That Shape Ocean Basins and Continental Drainage

14. Geological features on the ocean floor are a result of the continental plates moving. Where the plates are **moving away from each other** you will find ...

- A volcanoes
- B mid-ocean ridges
- C trenches
- D seamounts

15. **Continental glaciers**, or **icecaps** cover large areas of land, forming the coldest regions on the Earth. Glaciers can also form high up in mountain ranges, where snow and ice build up over long periods of time. These glaciers are known as ...
- A mountain glaciers
B rocky glaciers
C valley glaciers
D moraine glaciers
16. **Glaciers** gouge huge areas of the land and then reshape the land by the materials they collect and deposit. Some of the features include rounded hills. These are called ...



- A reservoirs
B moraines
C eskers
D drumlins

2.4 Water and Climate

17. Large bodies of water affect the climate of a particular area. The main effect that they have is to ...
- A cause more precipitation to fall
B cause more extreme temperatures
C prevent more precipitation from falling
D prevent extreme temperatures
18. The reason that the eastern side of the Rockies (Lethbridge and Calgary) receives a **Chinook** (warm dry wind) is because it is located in a ...
- A updraft
B downdraft
C rain shadow
D snow shelter
19. Currents coming from the Arctic region like the Labrador current carry cold air, and that is partly what can account for Labrador's cold climate. Scotland gets warm air from the **North Atlantic Current** because it comes from ...
- A Canada
B The North Pole
C The Equator
D The Hawaiian islands

3.1 The Diversity of Organisms In Saltwater and Freshwater Systems

20. **Diversity** occurs within many different ecosystems around the world. The ecosystem that is the most diverse is the ...
- A coral reefs
B woodlands
C rainforests
D deserts
21. The **continental shelf** is a shelf of land that extends out from the edge of a continent below the ocean's surface. The water in this zone of the ocean is ...
- A Cold and rich in a variety of species
B Cold and dark with few species
C Warm and light making it rich in nutrients
D Warm and dark with few nutrients

22. Another important zone in the ocean ecosystem is the one that contains **brackish** water (a mixture of saltwater and freshwater). It is called the ...
- A Intertidal Zone
 - B Estuary Zone
 - C Continental Zone
 - D Oceanic Zone

3.2 Populations in Fresh and Salt Water

23. Using the estimation method, scientists can predict the size of a species population.

They can use the **quadrant sampling method**. An example of this method follows.

24				16			12			
	40							16		
				28						
									70	
	32									
			10							
										32

To find the size of this population you would do the following ...

- A Find the average of all the numbers and multiply by the number of squares you sampled
 - B Find the average of all the numbers and multiply by the total number of squares
 - C Find the average of all the numbers and multiply by the number of rows
 - D Find the average of all the numbers and divide by the number of squares sampled
24. These types of population changes can occur naturally but do not happen every year ...
- A short-term
 - B long-term
 - C permanent
 - D seasonal
25. **Purple loosestrife**, introduced into a wetland ecosystem, is an example of this type of population change ...
- A short-term
 - B long-term
 - C permanent
 - D seasonal

3.3 Water Quality and Living Things

26. Prairie lakes with high concentrations of **carbonates and bicarbonates** have white coatings on the rocks near the shoreline. These minerals have been dissolved out of the soil and have made the lakes ...
- A acidic
 - B alkaline
 - C saline
 - D indicative
27. Often when too many chemicals are added into an environment, pollution occurs. This is evident when fertilizer runoff from farmer’s fields increases the growth of green slime in a body of water nearby. This green slime is called ...
- A algal bloom
 - B algae slime
 - C creeping algae
 - D fertile algae

28. A population is related to a species in the following way ...
- A A specific population is part of a species
 - B A species is part of a specific population
 - C A population is a specific species in a particular area
 - D A species is specific to a particular population

4.1 How Humans Use Water

29. Water use by humans on the Earth can be direct or indirect. When humans use water directly it is called ...
- A industrial
 - B agricultural
 - C domestic
 - D recreational
30. Dissolved salts, in the soil, can be deposited on the surface causing a serious side effect for this agricultural use of water ...
- A over-irrigating
 - B under-irrigating
 - C groundwater depletion
 - D harvesting the crops
31. 5% of human use of water is domestic. Clean water is purified and piped into homes in ...
- A developing countries
 - B developed countries
 - C 3rd world countries
 - D undeveloped countries
32. There are many advantages and disadvantages to the construction of Dams. Canada has most of its major rivers dammed. The following is an advantage of a dam ...
- A water flow
 - B habitat
 - C sedimentation
 - D employment

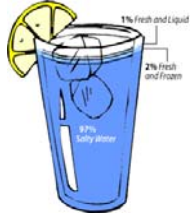
4.2 Measuring Impacts

33. A small micro-organism parasite, that lives in local water supplies, called *Giardia*, causes 'giardiasis', makes people sick. The illness is also referred to as ...
- A Step Throat
 - B Basket Aches
 - C Beaver Fever
 - D Lime Disease
34. Science and technology are two ways to solve many of the environmental problems society faces, but another more important way to solve problems is to get ...
- A laws passed to prevent problems from happening
 - B regulations imposed to prevent negative effects
 - C a strong commitment from people to act
 - D lots of money and endless resources
35. To maintain high standards in terms of water quality, cities and towns hire these people to measure chemicals and organisms in the water ...
- A Wildlife officers
 - B Sanitation workers
 - C Health engineers
 - D Water technicians

Numerical Response Questions (Worth 2 marks each)

1. This illustration models the total amount of water available on Earth.

4 parts represent the Earth's water supply:



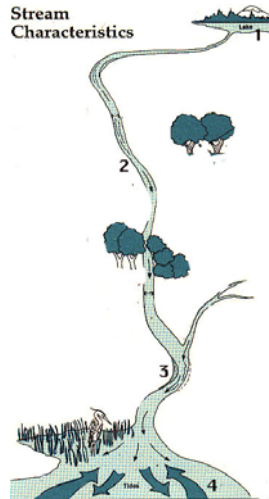
1. ice cubes
2. lemonade
3. melted water
4. lemon slice

Match each part in the model with what it represents...

_____ _____ _____ _____
 Salty Frozen Underground Surface

	.	.	
0	0	0	0
1	1	1	1
2	2	2	2
3	3	3	3
4	4	4	4
5	5	5	5
6	6	6	6
7	7	7	7
8	8	8	8
9	9	9	9

2. Match the stream characteristics with its location in the illustration.



_____ meanders

_____ rapid flow

_____ sediment deposits

_____ collects forming a channel

	.	.	
0	0	0	0
1	1	1	1
2	2	2	2
3	3	3	3
4	4	4	4
5	5	5	5
6	6	6	6
7	7	7	7
8	8	8	8
9	9	9	9

3. Use this table to answer the question

City	Jan Temp	July Temp
1	-4	+22
2	-7	+18
3	-11	+17
4	-15	+18

Match the city with the information provided in the table.

_____ _____ _____ _____
 Calgary Toronto Halifax Edmonton

	.	.	
0	0	0	0
1	1	1	1
2	2	2	2
3	3	3	3
4	4	4	4
5	5	5	5
6	6	6	6
7	7	7	7
8	8	8	8
9	9	9	9

4. Table of Freshwater Use (Litres/person/day)

Country	Domestic	Agricultural	Industrial
1	6	118	1
2	431	313	3136
3	110	16	424
4	129	1849	172

Identify each Country by its use of water ...

_____ _____ _____ _____
 Canada Mexico England Cambodia

	.	.	
0	0	0	0
1	1	1	1
2	2	2	2
3	3	3	3
4	4	4	4
5	5	5	5
6	6	6	6
7	7	7	7
8	8	8	8
9	9	9	9

Answer Key

Bonus Question (Title Page)					C		B		
Questions	Answer	Questions	Answer	Questions	Answer	Questions	Answer	Numerical Response Questions	Answer
1	C	11	C	21	C	31	B	1	2134
2	B	12	B	22	B	32	D	2	3241
3	A	13	D	23	B	33	C	3	3124
4	B	14	B	24	A	34	C	4	2431
5	D	15	C	25	B	35	D		
6	C	16	D	26	B				
7	B	17	D	27	A				
8	B	18	C	28	C				
9	A	19	C	29	C				
10	A	20	C	30	A				