UNIT TEST :

UNIT 5 – Water Systems (Fresh and Salt)

Student _____ Class _____

Bonus 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. The 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 lowest 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

7. **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

8. A ***stream, or river profile*** is a description of its characteristics. Each stream has a pattern of flow that is shaped by its characteristics. Stream characteristics include the …

A size and distance of flow
B rate of flow and degree of slope
C course and obstacles to overcome
D location and human activity in it

9. 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

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

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

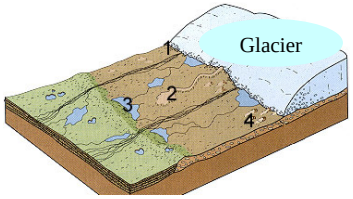
A Appalachian Mountains
B Great Smoky Mountains
C Cascade Mountains
D Rocky Mountains

2.3 Processes That Shape Ocean Basins and Continental Drainage

11. 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

12. ***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

13. **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

14. 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

15. 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

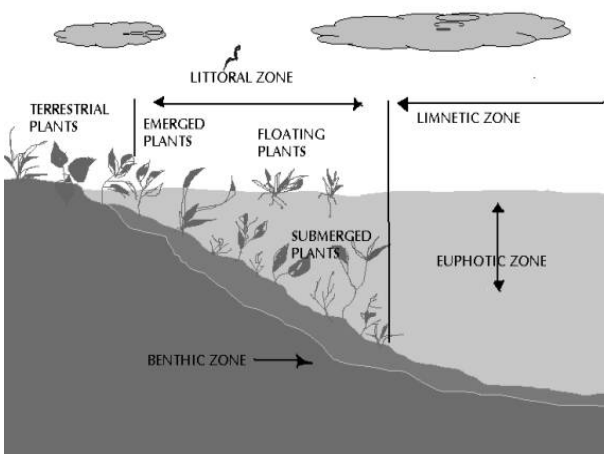
16. Currents coming from the Arctic region like the Labrador current carry cold air, and that is partly what can account for Labrador's cold climate. Scotland gets warm air from the **North Atlantic Current** because it comes from …
A Canada
B The North Pole
C The Equator
D The Hawaiian islands

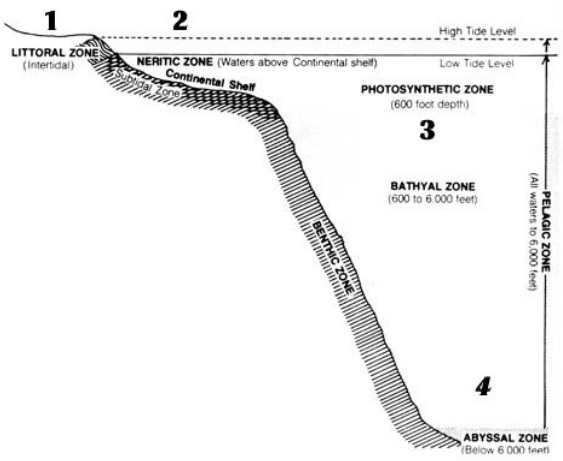
17. **El Niño** and **El Niña** have important consequences for weather all around the globe. **El Niño** and **El Niña** are caused by …
A earthquakes
B volcanoes
C pollution of the ozone
D disruption of the ocean-atmosphere system in the tropical Pacific

3.1 The Diversity of Organisms In Saltwater and Freshwater Systems

18. **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

19. ***Lake Zones*** ***Ocean Zones***





Lakes are freshwater bodies in low areas of land. Like the oceans, they have layers, or zones. The ***Neritic zone (2)*** are the waters above the **continental shelf** in the ocean. This zone could be compared to this lake zone …

   A Terrestrial
   B Benthic
   C Euphotic
   D Limnetic

20. 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

21. 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

22. ***Bioluminescence*** (as you learned in the Light and Optics Unit) is a characteristic that enables some aquatic organisms to produce their own light. The organs that enable these organisms to produce their own light are called ...
   A phospores
   B pituitary glands
   C phosphorescent
   D photophores

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. Waves moving across the surface of the water have changing patterns. The ripples can travel thousands of kilometers across the surface but the water itself …

A doesn't move at all
B travels to the shore and
C must returns to the source
D can only travel a specific distance

30. 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

31. A change in the water level in the ocean is referred to as **a tide**. Tides occur 4 times each day, every 6 hours, every day. There are two types of tides, **high tide** and **low tide**. The main reason that tides occur on the Earth is because of the ...

A gravitational force of the Earth on the moon
B gravitational force of the moon on the water
C rotation of the earth and tilt of its axis
D phases of the moon and the changing of the seasons

4.2 Measuring Impacts

32. **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

33. These are two characteristics you will likely see during stage 2 (when the river is free flowing and at its steepest grade)

A slow flow and erosion
B fast flow and erosion
C slow flow and deposition
D fast flow and deposition

34. 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

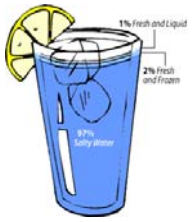
35. A river's ***sediment load*** is the amount of …
A organisms it is able to sustain
B water-borne materials it can carry
C pollution it is able to filter out
D erosion it can make as it flows

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