REVIEW – THE OCEAN /135 NAME \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_Hr\_\_

OCEAN WATER PROPERTIES CHAPTER 20-1

1. What types of things can be dissolved in ocean water?

1

2

1. How do gases get dissolved in ocean water (4 pts)

1

2

3

4

1. How does temperature affect how much gas can dissolve in water?
2. Why is ocean water considered a CARBON SINK?
3. What brings dissolved solids in to the ocean?
4. What are the sources of the dissolved solids?

1

2

3

1. What word do we use to describe the amount of dissolved solids in water?
2. Which has a greater salinity, fresh or ocean water? What are the percentages? (3pts)

1

2

3

1. What 2 processes can increase the salinity of water? Explain each (4pts)

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| --- | --- |
| Process | How it works: |
|  |  |
|  |  |

1. Describe the 3 temperature layers of the ocean (6pts)

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| --- | --- |
| Name of layer | What it is like |
|  |  |
|  |  |
|  |  |

1. How does cold water affect its density? Warm? (2 pts)

1

2

OCEAN CURRENTS CHAPTER 21-1

1. Define Ocean current –
2. What are the 2 kinds of ocean currents?

1

2

1. What 3things cause the surface currents?

1

2

3

1. In general, low pressure air \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ and high pressure air \_\_\_\_\_\_\_\_\_\_\_\_\_\_
2. Wind always moves from \_\_\_\_\_\_\_\_\_\_\_\_\_\_ pressure to \_\_\_\_\_\_\_\_\_\_\_\_\_\_ pressure areas
3. Why doesn’t the wind flow in straight lines from the north pole to the equator?

Describe what the air is doing

|  |  |
| --- | --- |
| 1. Polar easterlies, northern hemisphere
 |  |
| 1. Westerlies, northern hemisphere
 |  |
| 1. Horse latitudes, northern hemisphere
 |  |
| 1. Trade winds, northern hemisphere
 |  |
| 1. Equatorial doldrums
 |  |
| 1. Trade winds, southern hemisphere
 |  |
| 1. Horse latitudes, southern hemisphere
 |  |
| 1. Westerlies, southern hemisphere
 |  |
| 1. Polar Easterlies, southern hemisphere
 |  |

1. What makes an ocean current deflect?
2. How does a northern hemisphere gyre move?
3. How does a southern hemisphere gyre move?
4. In general, ocean currents at the equator move what direction and are what temperature?
5. The California and canary currents are moving south (and one would think be getting warmer), and yet they become cold currents. Why?
6. What causes an upwelling?
7. How does the water current flow in an upwelling?
8. What factors control the DEEP currents of the ocean? How does it affect the current? (6pts)

|  |  |
| --- | --- |
| Factors | How is affects the ocean current |
|  |  |
|  |  |
|  |  |

1. What is a turbidity current? Explain.

TIDES CHAPTER 21-3

1. Define tide:
2. What 2 things cause tides?

1

2

1. Why is the moon a more powerful influence on tides than the sun?
2. Why is there a bulge on the side NOT facing the moon?
3. What are the 2 types of tides?

1

2

1. Describe the position of the moon and sun relative to earth during spring tide
2. What lunar phases occur during spring tide?

1

2

1. What are the high tide like at spring tide? Low tides? (2 pts)

1

2

1. How would you describe the gravity forces at spring tide?
2. Describe the position of the moon and sun relative to earth during neap tide
3. What lunar phases occur during neap tide?

1

2

1. What are the high tide like at neap tide? Low tides? (2 pts)

1

2

1. How would you describe the gravity forces at neap tide?
2. What is flood tide?
3. What is ebb tide?
4. What is slack water?
5. What is a tidal bore?
6. Which tidal pattern is shown by the graphs below? (3pts)



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OCEAN ECOLOGY AND ENERGY TRANSFER

1. What is the name of the study of how organism interact with each other and the environment?
2. What does biotic mean?
3. What does abiotic mean?
4. Define ecosystem
5. Creatures that do either photosynthesis or chemosynthesis are both filling which niche in an ecosystem?

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| --- | --- | --- | --- | --- | --- |
| (10pts) | Who does it in the ocean? | Where in the ocean does it happen? | What is the energy source? | What is being produced? | In the light or darkness? |
| Photosynthesis |  |  |  |  |  |
| chemosynthesis |  |  |  |  |  |

1. What does it mean to be a producer?
2. What is a consumer?
3. Compare and contrast carnivore and consumer. (how are they alike, how are they different?)

1

2

1. If you were to count all the calories in all of the vent octopuses and all the calories in the vent mussels at a hydrothermal vent, which would have more calories?
2. Which would have the greater population?
3. Which ocean zones are powered by the sun?

1

2

1. Which ocean zones are powered by radioactive decay?

1

2

3

1. The sunlight can penetrate which ocean zones?

1

2

1. Which ocean zones have phytoplankton?
2. Which ocean zones have zooplankton?
3. What is the difference between zooplankton and phytoplankton?
4. What is the base of the food chain at the surface of the ocean?
5. What is the base of the food chain at the bottom of the ocean?
6. What is chemosynthesis?
7. Label the formulas below:

CO2 + 6H2O -> C6H12O6 + 6O2 =

CO2 + 4H2S + O2 -> CH20 + 4S + 3H2O =

1. Give an example of a mutually benficial relationship in the vent ecosystem
2. Give an example of a parasitic relationship in the vent ecosystem
3. What is commensalism?
4. Draw a food chain for the hydrothermal vent ecosystem
5. Draw a food web for the hydrothermal vent ecosystem (use 6 organisms)
6. What organisms go at the bottom of an energy pyramid?
7. Why is the bottom fatter?(give 2 reasons)

1

2

1. What happens every time you move up a trophic level?
2. Why does there have to be a greater population at the bottom of an energy pyramid?