Name _____

Aquatic Ecosystems (p. 181 – 191)

I. Describing Aquatic Ecosystems

p. 181

1. Define the term salinity.

Salinity – the amount of salts dissolved in water (ppt = parts per thousand)

2. What are the typical salinity levels of the following :

1. Salt Water : 30-50 ppt (Salt water = 35 ppt)
2. Fresh Water : less than 0.5 ppt
3. Brackish Water : 0.5 - 30 ppt

3. What happens to saltwater fish in freshwater and freshwater fish in salt water?

- Die (Hypotonic) (Hypertonic)

p. 182

4. Match each aquatic zone with the correct definition.

1. C	Photic Zone	A. Bottom of a body of water; Could be sunlit or dark
2. B	Aphotic Zone	B. Zone with no sunlight or photosynthesis occurring
3. A	Benthic Zone	C. Site of photosynthesis; Can extend down 200 meters

5. Most animals live in photic zones due to photosynthesis, dissolved oxygen, & warmth.

Circle One : (True) False

II. Freshwater Ecosystems

Lentic = Stop doing something; Lotic = locomotion

p. 183

1. Determine whether the statement is true or false. If false, then correct the statement to make it true. (X = True; O = False)

1. X Ponds are smaller and lakes are larger.
2. X The Great Lakes are an example of an inland sea, due to their large sizes.
3. O ~~All~~ Some lakes and ponds are full of nutrients. (Varies significantly)
4. X The littoral zone is shallow, near the shore, and possess rooted plants.
5. O ~~Very few~~ Many invertebrates live in the limnetic zone, which is far from the shore.

p. 184

2. Define the term wetlands.

Wetlands – areas of land that are flooded with water at least part of the year (Marshes, Swamps, Bogs, Fens)

Name _____

p. 184

3. List 5 reasons why wetlands are important ecosystems.

1. Prevent flooding
2. Filter pollutants (recharge aquifers)
3. Site of recreational activities
4. Provide habitats (comercially valuable fish)
5. Accumulate organic matter (nutrient-rich)

4. Determine whether the statement is true or false. If false, then correct the statement to make it true. (X = True; O = False)

1. O Freshwater marshes are mainly dominated by ~~woody~~ grass-like plants.
2. O Freshwater swamps consist of ~~grass-like~~ mainly woody plants ~~only~~.
3. X Bogs are characterized by floating mats of organic matter.
4. O ~~Primary~~ Secondary succession is common among bogs.
5. X Fens are similar to bogs, but possess a groundwater source of water.

p. 185

5. Match each river term with the correct definition.

1. D.	Flood Plain	A. All land area drained by a river and tributaries
2. E.	Meander	B. The result of the shifting of a river that cuts off water
3. B.	Oxbow Lake	C. A small river system flowing into a larger river
4. F.	Source	D. Area near a river that is low-lying & commonly flooded
5. C.	Tributary	E. Wide, curvy path of a mature river
6. A.	Watershed	F. Site of fast-moving, highly oxygenated river water

Longest River
1. Nile
2. Amazon
3. Yangtze, China
4. Mississippi

Largest River
Amazon – greater drainage area

III. Estuaries

p. 186

1. Define the term estuaries.

Estuaries – body of water where fresh water from land meets water of the ocean or inland sea

2. Organisms living in estuaries tolerate a wide range of salinity & temperature conditions.

Circle One : (True) False

3. Estuaries trap ~~very few~~ many nutrients and are considered to be relatively ~~un~~productive.

Circle One : True (False)

Name _____

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4. List 2 characteristics of a saltwater marsh & where one is located in the United States.

1. Habitat for shorebirds, waterfowl, fish + shellfish
2. Filter out pollution, Stabilize shorelines from surges

Location : Chesapeake Bay (Maryland, Virginia)

5. List 2 characteristics of a mangrove swamp & where one is located in the United States.

1. Dominated by mangrove trees (Fish nursery too!)
2. Source of food, medicine, tools + construction

Location : Florida Everglades

6. List two reasons why estuaries are important ecosystems.

1. Prevent soil erosion + flooding
2. Protective barrier between land + sea

IV. The Oceans

p. 187

1. List the five oceans of the world.

1. Arctic Ocean
2. Atlantic Ocean
3. Indian Ocean
4. Pacific Ocean
5. Southern Ocean

2. What percentage of the Earth is covered by ocean water? 71 %

3. ~~Warmer~~ Colder water sinks in oceans, whereas ~~colder~~ warmer water rises.

Circle One : True (False)

4. Water with higher salinity sinks, whereas water with less salinity rises.

Circle One : (True) False

5. What major ocean current flows from the Gulf Of Mexico to the north Atlantic Ocean?

The Gulf Stream

6. Define the term upwelling.

Upwelling – vertical flow of cold, nutrient rich water toward the surface

Name _____

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7. List the zones of the ocean (based on vertical and horizontal stratification).

Vertical	Horizontal
1. Photic Zone (to 200 m)	1. Intertidal Zone
2. Aphotic Zone (200 m - 10,000 m)	2. Neritic Zone
	3. Open Ocean

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8. Determine whether the statement is true or false. If false, then correct the statement to make it true. (X = True; O = False)

1. X Two high tides & two low tides occur each day in an intertidal zone.
2. O Organisms ~~do not~~ have to deal with extreme conditions in intertidal zones.
3. X Intertidal rocky shorelines possess organisms that attach themselves to rocks.
4. O Intertidal sandy shorelines have ~~more~~ less biodiversity than rocky shorelines.

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9. Determine whether the statement is true or false. If false, then correct the statement to make it true. (X = True; O = False)

1. X Neritic zones extend from the low tide mark to the edge of the continental shelf.
2. X The neritic zone is sunlit, because it only extends 66 meters downward.
3. X Kelp forests in neritic zones supply shelter & food for other organisms.
4. X Kelp forests are extremely productive due to kelp growing up to 200 meters tall.

10. Determine whether the statement is true or false. If false, then correct the statement to make it true. (X = True; O = False)

1. X Corals in coral reefs are composed of calcium carbonate.
2. O Corals are evolutionarily ~~un~~related to jellyfish and sea anemones. (Cnidarians)
3. X Corals symbiotically exist with algae known as *zooxanthellae*.
4. O Coral bleaching is caused by pollutants & ~~decreased~~ increased surface water temperatures.

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11. Determine whether the statement is true or false. If false, then correct the statement to make it true. (X = True; O = False)

1. O The open ocean ecosystem is ~~highly~~ not productive.
2. X Phytoplankton & zooplankton are the base for open ocean food webs.
3. O Bioluminescence is ~~un~~common in the aphotic zone of the open ocean.
4. O Photosynthesis does not occur in the open ocean benthic zone, ~~so no~~ but life exists. (Chemosynthe)
5. X Life in the benthic zone of the open ocean revolves around hydrothermal vents.