Environmental Science 3-1 Notes name_____

I.Climate – the long term average of weather conditions (_____&_____)

II. Land Biomes- _____
Flora= _____ Fauna= _____

A) TEMPERATE DECIDUOUS (trees that _____) FOREST
- 1) Temperature = _____
- 2) Precipitation = _____
- 3) Flora (plants) = _____
- 4) Fauna
  - a) Herbivores = _____
  - b) Carnivores = _____
  - c) Omnivores = _____

B) CONIFEROUS (EVERGREEN) FOREST (AKA taiga , boreal forest)
- 1) Temperature = has seasons with _____ and long, _____ winters
- 2) Precipitation = _____ inches/year (35- 75 cm/year)
- 3) Flora = _____, shrubs, mosses
- 4) Fauna
  - a) Herbivores = _____
  - b) Carnivores = _____
  - c) Omnivores = _____

C) TROPICAL RAIN FOREST (Most biodiverse land biome (50% + of all living things)
- 1) Temperature = _____
- 2) Precipitation = Up to _____ in/year (400 cm/year)
- 3) Flora = Trees, _____, vines
- 4) Fauna
  - a) Herbivores = _____
  - b) Carnivores = _____
  - c) Omnivores = _____
- 5) Other
  - a) Canopy/treetops is where most _____ live
  - b) Canopy is thick allowing only _____ to reach ground
  - c) Soil is poor because most _____ are in plants

D) TEMPERATE GRASSLANDS (AKA Prairie, Steppes, Pampas)
- 1) Temperature = has seasons with _____ summers and _____ winters
- 2) Precipitation = _____ inches/year (25- 75 cm/year) mostly _____
- 3) Flora = grasses, _____, some trees by standing water
- 4) Fauna
  - a) Herbivores = _____
  - b) Carnivores = _____
  - c) Omnivores = _____

Environmental Science 3-1 Notes name_____

E) SAVANNA

1) Temperature = Hot with _____ Season
2) Precipitation = ____ inches/year (150 cm/year)
3) Flora = grasses, _____, few scattered trees
4) Fauna
    a) Herbivores = _____
    b) Carnivores =_____
    c) Omnivores = _____

F) DESERT

1) Temperature = _____ days and _____ nights
2) Precipitation = _____ inches/year (25 cm/year)
3) Flora = _____
    a) Have extensive _____roots, store water in _____, and have _____ or _____ to avoid being eaten.
4) Fauna
    a) Herbivores = _____
    b) Carnivores = _____
    c) Omnivores = _____
    d) Most animals are _____

G) TUNDRA

1) Temperature = _____ with short growing season
2) Precipitation = _____ inches/year (30-50 cm/year)
3) Flora = _____, _____, fast growing flowers
4) Fauna
    a) Herbivores = _____
    b) Carnivores = _____
    c) Omnivores = _____
    d) Animals have _____ bodies and thick _____
5) Other
    1) <u>Permafrost</u>- Layer of soil below top soil that is permanently _____.
    2) Alpine Tundra – Located above the tree line on all major _____.

Environmental Science Notes 3-2 NAME_____

Marine Ecosystems (_____)

I. Abiotic factors
   A. Water Temperature-- _____
   B. Pressure-- _____
   C. Sunlight-- _____

II. Plankton- _____ organisms that float or drift freely in all freshwater and marine environments and are the base of the _____.
   A. _____- plant like plankton that create 50-85% of the Earth's oxygen
   B. _____-animal like plankton

III. Ecosystems
   A. _____- Where ocean meets land and undergoes tides
      1. Types
         a) _____ Flats
         b) _____ Shore
         c) Sandy _____
      2. Animals: crabs, sea star, anemones, urchins, snails, clams
      3. Adaptations
         a) Shells or flexible to deal with _____action
         b) Can breathe both _____ and _____
         c) Holdfasts- _____structures or glue to hold to rocks
      4. Estuary – Areas where _____ rivers mix with _____water making a very nutrient rich ecosystem.
   B. Neritic Zone – _____, gently sloping bottom, receives lots of _____
      1. Coral reef – most _____ aquatic ecosystem
      2. fauna and flora: _____, coral, turtles, seaweed, _____, colorful _____, octopi, dolphins
   C. Oceanic Zone – Steeply dropping floor of open ocean
      1. Animals= _____, whales, schooling fish, squid, _____

   D. _____ Zone – Deep ocean floor
      1. Thermal vents—cracks in the ocean _____ that blow out heated sea water and _____ (gases)
         a) _____ here eat hydrogen sulfide (rotten egg smell) from the vent. They are the bottom of the food chain. No _____ needed!
         b) _____ are extreme and would crush an unprotected human
         c) _____ in the vent reaches 400-600 degrees but doesn't _____ due to the water pressure above it
         d) Toxic _____ released
         e) Total _____
      2. Animals: _____, tube worms, crab, _____ bacteria
      3. Adaptations
         a) Hard or flexible to deal with extreme _____
         b) Scavenge on _____material that sinks from above ("ocean snow")
         c) _____ – Chemically make light
         d) chemosynthesis--Bacteria can make food from the energy in _____that come out of _____
   E. _____ Sea- Floating rafts of _____ that support an entire ecosystem

   F. Polar Ice -- in Antarctic and Arctic that supports a large variety of life like sea lions, penguins, polar bears.

Environmental Science Notes 3-3 NAME_____

Freshwater Ecosystems

I. Streams and Rivers
   A. _____ – place where water flows from underground river
   B. _____ – tiny flow of water from spring or runoff
   C. _____—streams that join a larger stream
   D. _____—very strong wide stream
   E. Abiotic factors
      1. Speed of river
         a. _____ moving- more dissolved O_2 in water (good for insects, fish)
         b. _____ moving – much less O_2
      2. Temperature of river
         c. _____- more O_2 can be _____
         d. Warm- less _____ can be dissolved

II. Ponds and lakes
   A. _____ and _____ uniformity are the major differences between lakes and ponds.
   B. Zones
      1. Littoral Zone – Area closest to _____ of water that receives plentiful _____ allowing for abundant plant growth
         a. Flora – _____, rushes, _____
         b. Fauna – Frogs, _____, _____, fish
      2. _____zone – surface of open water with no plants
         a. Flora – _____
         b. Fauna – Bass, _____, salmon
      3. Deep water zone – _____can reach here.
         a. Flora – _____ (no light)
         b. Fauna – _____ like cat fish, _____, bacteria

III. Wetlands – Area sometimes _____ or with _____ soil
   A. _____ – flooded grassland located allow rivers and lakes
      1. Flora – _____, rushes, cattails, wild rice, _____
      2. Fauna – _____, muskrat, turtles, _____, fish
   B. Swamp- Flooded _____
      1. Flora – _____trees like Cyprus, cedar, and willows as well as duck weed and water lilies
      2. Fauna – Fish, _____, ducks, salamanders, frogs, turtles, _____
   C. _____- Sphagnum moss floating on a pond (water bed).