Clicker Questions- EBIO 2040 Fall 2014
Last 1/3 of the course

Is drought a disturbance in deserts?
 a) yes, it’s an annual event
 b) no, never
 c) only if organisms are killed by it

In which biome should fire frequencies be highest (i.e. shortest time interval between fires)
 a) deserts
 b) grasslands
 c) deciduous forests
 d) boreal forests

What biological interaction would probably be most important to determining changes in community composition early in primary succession?
 A) Competition
 B) Parasitism
 C) Mutualism
 D) Predation

What biological interaction would probably be most important to determining changes in community composition late in succession?
 A) Competition
 B) Parasitism
 C) Mutualism
 D) Predation

As the LAI increases, GPP also increases, but should eventually level off - why? (assume unlimited water and nutrients)
 A) as GPP increases the plant consumes most of the available CO2
 B) the gain in photosynthesis decreases with each additional leaf layer due to increased shading
 C) greater photosynthesis results in higher O2 levels, which cause spontaneous combustion
 D) all of the above

Does the net movement of CO2 between a forest and the atmosphere equal net primary production?
 A) Yes, it is the same
 B) No, it is measuring total photosynthesis (GPP)
 C) No, it includes both net primary production and respiration of heterotrophic organisms
 D) No, it doesn’t include chemosynthetic uptake of CO2

Why is the rate of marine NPP higher in nearshore areas?
 A) zones of upwelling
B) water is warmer  
C) nutrient inputs from rivers  
D) water is colder  
E) A and C

In an analysis of terrestrial NPP versus precipitation from many different sites across the globe, why does NPP appear to decrease at extremely high amounts of precipitation?  
A) cloudiness lowers light available for photosynthesis  
B) soil oxygen levels become depleted  
C) ecologists don't like to work in the rain- lack of available data limits our true understanding of the relationship at high precip  
D) all of the above  
E) A & B

Why is nitrogen so often a limiting resource for NPP?  
A) The supply of N relative to other resources is low relative to biological demand  
B) N is an important component of enzymes, and the most abundant enzyme is RUBISCO  
C) N is an important structural component of autotrophs  
D) all of the above  
E) A & B

Approximately how much of the global NPP is marine (vs. terrestrial)?  
A) 70%  
B) 30%  
C) 50%  
D) All of the above

Given the same mass of food, what factors would cause net secondary production to vary among different heterotrophs?  
A) thermal physiology  
B) food quality  
C) digestive physiology  
D) all of the above  
E) A and C

In which of the following ecosystems is detritus the most important energy input to support higher trophic levels?  
a) tropical rain forest  
b) mountain stream  
c) kelp forest  
d) hot desert

On average how much energy passes from one trophic level to another in terrestrial ecosystems?  
A) 80%  
B) 50%  
C) 30%  
D) 10%
Relative to non-ruminant herbivores, assimilation efficiency in ruminants would be:
A) the same
B) lower
C) higher
D) all of the above

Which of the following animals would you expect to produce the greatest amount of biomass per unit of food consumed (combined assimilation & production efficiency)?
A) Mountain lion
B) Elk
C) Grasshopper
D) Spider

What determines the number of trophic levels in an ecosystem?
Most terrestrial ecosystems have around 3 to 5
A) amount of energy in the system
B) basic control of species presence/absence (e.g. dispersal, physiological traits)
C) size of the populations- area of the ecosystem
D) amount of disturbance
E) all of the above

Where do nutrient elements originate before they enter food chains?
A) plants manufacture them
B) gases in the atmosphere
C) rocks
D) all of the above
E) B and C

Why should an ecologist care about parent material?
A) nutrient chemistry
B) texture
C) acidity
D) all of the above
E) none of the above- soils are boring

Why doesn’t N₂-fixation overcome to common limitation of NPP in terrestrial ecosystems?
A) Energetically expensive for plants
B) Requires higher amounts of some nutrients
C) symbiotic N-fixing plants often poor competitors for non N resources
D) all of the above

What abiotic factors influence rates of decomposition?
A) desiccation
B) enzyme activity
C) oxygen concentration
D) all of the above
What is the largest ecosystem pool of nitrogen in most ecosystems (e.g. not in the tropics)?
A) Soluble nutrients
B) Plants
C) Detritus
D) Microorganisms

What is the largest flux of nitrogen in most ecosystems?
A) Plant uptake
B) Decomposition
C) Heterotroph uptake
D) Leaching losses

What nutrient(s) should limit NPP early and late in ecosystem development (over 1000’s – millions of years; assume no disturbances)?
A) Phosphorus (P) early, Nitrogen (N) late
B) N early, P late
C) P early and late
D) N early and late

How does deforestation increase CO₂ emissions?
A) plant death increases detritus input into the soils
B) warmer soils increase NPP by soil organisms
C) removing forests by burning puts CO₂ into the atmosphere
D) all of the above
E) A and C only