1. Fill the blanks with a letter for one point each (15)

increased biomagnification________  a) locally extinct
bioassessment ___________  b) ability to resist changes in pH
psychrophilic ___________  c) Silent Spring
alpha (α) diversity ___________ d) not settled by gravity
extirpated ___________  e) total dissolved salts
conductivity ___________  f) increased lipid solubility
Lake Nyos ___________  g) between habitat diversity
buffering capacity ___________ h) catastrophic CO₂ release
endocrine disruptors ___________ i) requires cold
bioconcentration ___________ j) within habitat diversity
bioaccumulation ___________ k) pollution tolerance of individual species
chronic toxicity ___________ l) feminized wildlife
Rachel Carson ___________ m) the ability of a compound to move from water into an organism
colloidal ___________ n) bioconcentration plus buildup from food
beta (β) diversity ___________ o) long term exposure effects
2. Diagram the carbon cycle (as was done in class), oxic fluxes on top, anoxic on bottom, oxidized inorganic forms to the right (20).

3. Give the equations for photosynthesis and respiration (4).
4. Diagram the nitrogen cycle (as in class), oxic fluxes on top, anoxic on bottom, oxidized inorganic forms to the right (20).

5. What did Melody Kemp talk about in her lecture (6)?
6. Why did high sulfate water flowing into a Netherlands wetland lead to increased phosphorus availability, even though the inflowing water was low phosphorus (5)?

7. Why do very old lakes have a high diversity (5)?
8. Describe two invasions of aquatic habitats by non-native species. Include the source of the invasion and the effect it has on the native ecosystem (10).
9. Why are redox gradients “hot spots” of nutrient cycling in ecosystems (5)?

10. Diagram the photosynthesis-irradiance relationship with light on the x-axis and photosynthetic rate on the y-axis. Label $P_{\text{max}}$, compensation point, respiration, inhibition, and $\alpha$ (10).