Science 1206
Sample Midterm

Answer Sheet

Part 1

1. __b___
2. __c__
3. __b_
4. __d
5. __c___
6. __d__
7. __d__
8. __b___
9. __d___
10. __d___
11. __a___
12. __a___
13. __d___
14. __a___
15. __b___
16. __d___
17. __d___
18. __c___
19. __c___
20. __a___
21. __b___
22. __c___
23. __a___
24. __d___
25. __b___
26. __b___
27. __a___
28. __b___
29. __b___
30. __c___
31. __b___
32. __c___
33. __b___
34. __b___
35. __b___
36. __c___
37. __b___
38. __a___
39. __b___
40. __d___
41. __c___
42. __a___
43. __a___
44. __b___
45. __a___
46.__d___
47. _a____
48. _c____
49. _a____
50. __???___

Part 2

1. a. $Co(NO_2)_2$ P_2Cl_5 Li_3N $(NH_4)_2SO_4$ $HNO_{3(aq)}$

b. Calcium phosphate dinitrogen monoxide copper(I) chromate methane magnesium sulfide

2. (I) 2, 1, 2 - Synthesis (II) 1,2,1,2 - double replacement
(III) 2, 7, 4, 6 - Hydrocarbon combustion (IV) 1,2,1,1 - single replacement
(V) 2,2,1 - decomposition

Part 3

1. Oxygen - glowing splint test (Page174

Carbon dioxide - limewater test (Page174

2. physical change - no new substance formed. Chemical composition is unchanged.

Example = boiling water

chemical change - new substance(s) formed. Rearrangement of atoms. Example = rusting of iron

3. Carbon-oxygen cycle ?????

Carbon dioxide - absorbed by plants in photosynthesis, and released back into the atmosphere by respiration, decomposition and combustion

Oxygen - released into the atmosphere by plants in photosynthesis and absorbed by respiration, decomposition and combustion

4. a. Biotic - living components of the ecosystem that affect other living things.

Abiotic - non-living or physical factors that affect living things.

B. 2 biotic factors

predation - helps keep the population of prey in check, maintaining balance of the ecosystem.

decomposers = release nutrients from dead organisms so they can be used again by other organisms.

C. 2 abiotic factors

sunlight - provides energy for photosynthesis, the basis of the food chain. Helps warm the earth.

pH of soil - affects the growth of plant roots (low pH may stunt growth). Affects growth of soil microorganisms, insects, etc.

5.a. Pyramid of Energy vs Pyramid of Biomass (page 37-38)

b. limit on number of trophic levels in a food chain because energy decreaes at each level. At higher levels, more and more energy is needed to obtain food, which may not provide enough energy to support the feeding organisms.

6. Bioamplification - see handout given in class and page 54.

7. Fertilizer - chemical substance containing nutrients required for plant growth.
Disadvantages of excessive fertilizer use = can make soils more acidic. Runoff from fields can enter waterways and cause an algal bloom. This can lead to eutrophication of rivers and lakes (Oxygen levels drop as algae decay, and most other organisms die off).

8. Succession - the gradual change in community types over time.

Primary succession. Bare rock to Forest
Stages: Lichens, Mosses, Grasses, Shrubs, Small trees, Large trees (climax community)
Each stage prepares for the next. For example, lichens live on bare rock, produce acids that dissolve small amounts of rock, trap dust, etc. and thus create a primitive thin layer of soil. Eventuall moss spores may grow in this soil. Mosses attract small herbivores such as insects and snails. Wastes and decay of organisms increases the amount of soil .....etc.