PHOTOSYNTHESIS AND RESPIRATION REVIEW

answers to questions on next page

	PHOTOSYNTHESIS	RESPIRATION
RAW MATERIALS	Carbon dioxide + water (inorganic)	Oxygen (aerobic) + glucose
PRODUCTS	Glucose (*organic*), water and oxygen	36 ATP, carbon dioxide and water
LOCATION	chloroplast	Mitochondria
WHEN IT OCCURS	Daytime (when light is present)	ALL THE TIME!
ROLE IN MAINTAINING HOMEOSTASIS (balance)	Photosynthesis makes food available for producers	Puts the energy trapped in glucose into a usable form (ATP) *all living things do some form of respiration, including producers!

Answers to Review Questions:

1. 3
2. 2
3. 4
4. 4
5. 3
6. 4
7. 2
8. 3
9. 2
10. 3
11. 2
12. 1
13. 2
14. 2
15. 2
16. 3
17. 4
18. 1
19. 3
20. The guard cells help to maintain homeostasis by regulating gas exchange (and indirectly controlling the rate of photosynthesis and respiration)

Short Answer:

1.

- Carbon dioxide is the inorganic carbon compound that is obtained by plants from the environment.
- Photosynthesis is the process plants (and other producers) use to form more complex organic molecules (such as glucose) from carbon dioxide.
- Herbivores use these complex organic molecules (such as glucose) for food/energy.

- **Herbivores (and all other living things) use respiration to return carbon (in the form of carbon dioxide) to the environment.**

2.

- **One function of guard cells is to control gas exchange (or photosynthesis and respiration, or what gases are able to enter and exit the LEAF).**
- **Guard cells regulate gas exchange by opening and closing the stomata.**
- **By having guard cells on the lower surface of leaves they may be more protected from pollutants, get water more easily when it evaporates, more protection from the environment… etc.**