A. Essay (2)

1) Explain photosynthesis: where it happens, what it needs, and what it produces. Photosynthesis is when plants make food using light. It happens mostly in the leaves because they are green. I think the mitochondria collect the light, then the plant takes in oxygen and water to make sugar. The sun gives energy and the plant turns it into food. At the end the plant releases carbon dioxide. This process lets the plant grow fast and be healthy.
2) Compare photosynthesis and respiration in plants—how they're different, how they work together, and when they occur. Photosynthesis and respiration both give plants energy. Photosynthesis uses sunlight to make oxygen and food. Respiration happens at night and uses glucose. I think photosynthesis and respiration can't happen at the same time. Photosynthesis is for making energy and respiration is for breathing out air.

B. Short Answer (3)

3) What is chlorophyll and why is it important? Chlorophyll is the green color that traps sunlight in leaves. It is important because it helps start photosynthesis by catching light.
4) What do stomata do, and why can opening/closing them be helpful to a plant? Stomata are tiny holes that let gases in and out. They close to save water on hot days, which helps the plant not dry out.
5) Where and how do plants store extra glucose, and why is that useful? Plants store extra glucose as starch in leaves or roots. This helps them have food when there is not much light.

C. One-liners (5)

6) Word equation for photosynthesis (use words, not symbols). carbon dioxide + water + light → glucose + oxygen
7) Organelle for photosynthesis. Mitochondria
8) Organelle for respiration. Chloroplast
9) Gas taken in during photosynthesis. Oxygen
10) Define transpiration in 10 words or fewer. Loss of water vapor from leaves through stomata.