**Biology Journal- The Calvin Cycle ANSWERS**

1. Calvin set out to develop an experimental method that would overcome the problem of photosynthetic reactions happening very, very rapidly. He wanted to determine the sequence of photosynthetic reactions and the compounds formed from them.
2. Calvin used a type of algae called Chlorella, in which each cell contains only a single chloroplast. This process was so innovative at the time because Calvin use radioactive Carbon-14 to track the intermediates produced in the light independent reactions.
3. You would expect to find PGAP and PGAL.
4. Calvin exposed the algae in the dark with a supply of 14C02 in thin glass disks. When he turned on the light the algae would photosynthesize and take up the radioactive CO2. After exposing the algae for 30 seconds, he killed the algae in boiling alcohol. He then extracted the compound in the algae by chromatography. He then exposed the chromatograms to photographic paper. The radioactive carbon in the various compounds left dark spots on the paper. Over time, he was able to determine the compounds and their sequence.
5. Calvin worked with Benson and others in his research.