AP Lab Investigation 5: Photosynthesis Rubric (37 points) Poster Format as well as in journal

Pictures, General appearance (neat, large enough to read….) (1-3 pts removed not awarded)

Diagram or picture with explanation illustrating the structure = function (2 pts)

1. Title (descriptive contains IV and DV information) (1 point)

2. Abstract (1-2 sentences background, 1 sentence about lab purpose, 1 sentence about general lab procedure, 1-2 about results trend includes a statistic...Rf , R^2, rate from trendline equation, growth response graph standard error(PAR or light in ft-candles vs transmission or absorbance), 1-2 sentences about conclusions drawn from results at both light distances). (4 points)

3. Results:

a. Data Table includes: descriptive title, only one horizontal line under column titles (unless there is a mean at the bottom of raw data), columns titled correctly with units in parentheses, sig figs correct (only as many numbers as the accuracy of measuring tool also applies to calculations). Four columns: Time, Table Data, Class Means for class experiments if applicable (ex. light distance, different plants). (3 points)

b. 2 Graphs; at least one for your lab table experiment and one for photosynthesis response (light app (in foot candles) or PAR (microMoles/sq m/sec) vs. transmission or absorbance) show trendline equations using X-Y scatter for each light trial, error bars (+/- 2 SD), descriptive title, axes labeled with units in parentheses. (8 points)

c. Trend paragraph explaining what trends the data reveals in general (comparing rates (ex. light distance or different plants) and R^2, use statistics (4 points)

d. Calculations of Standard Error (2 points)

e. Rf table averages for each pigment (3 points) title, columns labeled (no units for Rf) (see lab for labels of each pigment)

4. Discussion/conclusion: must include data/statistics from lab to support answers as well as cited information. Please address the differences in reaction rates (clearing of DPIP) for two experiments (ex. difference light distances, different plants) (please relate information about the roles of light intensity, types of light, nature of light, inverse square law as applies to light, light as a source of free energy, chlorophyll, (if used DPIP) and NADP in light reaction as well as the general importance of photosynthesis). Possibly CAM and C4 Plants. Also include a discussion of any difficulties and how those factors impacts the experiments. (8 points) Include parenthetical citations or use a superscript at the end of sentences.

5. References (2 min) must use proper APA format (**www.bibme.org**) **(2 points)**