PRE-LAB: BACTERIAL GROWTH

Outline the steps of the experiment with a flowchart. Show enough detail so that you understand what you will be doing during each time point.

17 marks

LAB week 4: GROWTH WORKSHEET

1. a) Make a graph in Excel (or similar program). **Copy and paste the graph below**. Put the independent variable (controlled) on the x-axis and the dependent variable (measured) on the y-axis. The points are in series, so link them together. **3 marks**

b) Calculate the generation time from the graph. **3 marks**

Data:

Time Points	Optical Density Reading
T_1=	
T_2=	

Calculation:

2. Drop plate results. Enter in the colony counts below. Note: only one or two dilutions will likely be in the countable range. **2 marks**

Dilution	Reading 3 (1 hour) cfu	Reading 5 (2 hours) cfu	CFU/ml
10-1			Reading 3:
10-2			
10-3			
10-4			Reading 5:
10-5			
10-6			
10-7			
10-8			

TNTC indicates too numerous to count

TFTC indicates too few to count

<u>Calculation for CFU/ml</u> *Report the answer in scientific notation and include the proper units.* 4 marks

Reading 3 (Time = 1 hour)

Reading 5 (Time = 2 hours)

3. From your two plating results, calculate the generation time. **3 marks**

4. You made two generation time calculations using two techniques (Question 1b and question 3). DISCUSS YOUR DATA (1 mark), comparing the two methods for determining generation time.

- o Which method of generation time is more accurate in our lab setting, considering the variables for each method (plating vs. spectrophotometer readings) and how they would affect the data. (1 mark)
- o Suggest reasons why the two methods might be different based on what happened during your experiment. (1 mark)