**SERIAL DILUTIONS & STANDARD PLATE COUNT**

34. Plating 0.1mL of a sample diluted by a factor of 10^-5 produced 113 colonies. What was the original concentration in the sample? Show your Calculations.

**OCD = 1.13 x 10^8 cfu/mL**

35. A plate inoculated with a sample volume of 10^-9mL produced 62 colonies. What was the original concentration in the sample? Show your Calculations.

**OCD 6.2 x 10^10 cfu/mL**

36. A 10^-4 plate has a colony forming unit count of 75. Calculate the Original Concentration.

**OCD 7.5x10^5 cfu/mL**

37. Your Original Concentration is 1.05 x 10^ 7, what is your number of CFU on plate 10^ -5?

**1.05 x 10^2 = 105 cfu**

38. Your TA gives you a sample of E. Coli that is 6.32x 10^8CFU/mL. What dilution should give you a countable plate?

**Countable plate = 63 cfu (6.32 x 10^1) A total dilution of 10^-7 is needed.**

39. You are performing a “10-Fold” dilution, and your sample is 89 μL. What is the amount of your diluent?

**a. 801 μL**

b. 89 μL

c. 801 mL

d. 89 mL

22. A plate inoculated with a sample volume of 10^-8 mL produced 55 colonies. What was the original concentration in the sample? Show your Calculations. (3 points)

**5.5 x 10^9 CFU/mL = (5.5 x 10^1 / 10^-8)**

23. A 10^-6 plate has a colony forming unit count of 83. Calculate the Original Concentration. (3 points)

**8.3 x 10^7 CFU/mL = (8.3 x 10^1 / 10^-6)**

24. Your Original Cell Density is 2.05 x 10^ 8, what is your number of CFU on plate 10^ -5? (3 points)

***Countable number is 2.05 x 10^2 = 205 CFU***

***2.05 x 10 ^8 CFU/mL – 2.05 x 10^2 CFU = 10^6 total dilution on 10^-6 plate.***

**Assuming 10 fold serial dilutions were performed the 10^-5 plate yields 2050 colonies or an uncountable plate.**

25. Your TA gives you a sample of *E. Col*i that is 7.55 x 10^8CFU/mL. What dilution should give you a countable plate? Draw out your serial dilution/standard plate count scheme. (5 points)

**Countable plate CFU is 7.55 x 10^1 or 75 CFU.**

**7.55 x 10^8 – 7.55 x 10^1 = 10^7 total dilution required to achieve 75 CFU.**

**Using 10^-6 dilution tube and Plating 100 uL or 10^-1 mL yields a countable number of 75 CFUs on the 10^-7 plate.**

**Drawing shows serial dilution scheme and volumes used. Drawing shows volume plated on each plate and the total dilution for each plate is labeled.**

26. You are performing a “10-Fold” dilution, and your sample is 59 μL. What is the amount of your diluent?

|  |  |  |  |
| --- | --- | --- | --- |
| **A. 531 μL** | B. 59 μL | C. 531 mL | D. 59 mL |