

96 學年度第 2 學期 - 給水工程 作業 1 (總分 100)

1.(30)

$$\text{Ca}^{2+} = 94/20.0 = 4.7 \text{ meq/L}; \text{Mg}^{2+} = 24/12.2 = 1.97 \text{ meq/L}; \text{Na}^+ = 14/23 = 0.61 \text{ meq/L}$$

$$\text{HCO}_3^- = 317/61 = 5.2 \text{ meq/L}; \text{SO}_4^{2-} = 67/48 = 1.4 \text{ meq/L}; \text{Cl}^- = 24/35.5 = 0.68 \text{ meq/L}$$

4.7

6.67

7.28

| | | |
|--------------------------------------|--|------------------------------------|
| $\text{Ca}^{2+} = 4.7 \text{ meq/L}$ | $\text{Mg}^{2+} = 1.97 \text{ meq/L}$ | $\text{Na}^+ = 0.61 \text{ meq/L}$ |
| $\text{HCO}_3^- = 5.2 \text{ meq/L}$ | $\text{SO}_4^{2-} = 1.4 \text{ meq/L}$ | $\text{Cl}^- = 0.68 \text{ meq/L}$ |

5.2

6.6

7.28

2.(30)

$$\text{Alkalinity} = \frac{16.5 \text{ ml} \times 0.02 \text{ N} \times 50000}{100 \text{ ml}} = 165 \text{ mg/L}$$

Bicarbonate alkalinity (屬於 HCO_3^- 鹼度) exists at a pH less than 8.3

3.(20+20)

題目 Lauryl Tryptose 表 3-2

0.1 5 10

0.01 2 1

0.001 0 0.1

相差 100 倍

查表得 MPN INDEX PER 100ML =>49

相差 100 倍 => $49 \times 100 = 4900$ [MPN/100ml]

95% Confidence Limits

Lower = $17 \times 100 = 1700$

Upper = $130 \times 100 = 13000$

題目 Lauryl Tryptose 表 3-2

1.0 5 10

0.1 2 1

0.01 2 0.1

相差 10 倍

查表得 MPN INDEX PER 100ML =>94

相差 10 倍 => $94 \times 10 = 940$ [MPN/100ml]

95% Confidence Limits

Lower = $28 \times 10 = 280$

Upper = $220 \times 10 = 2200$