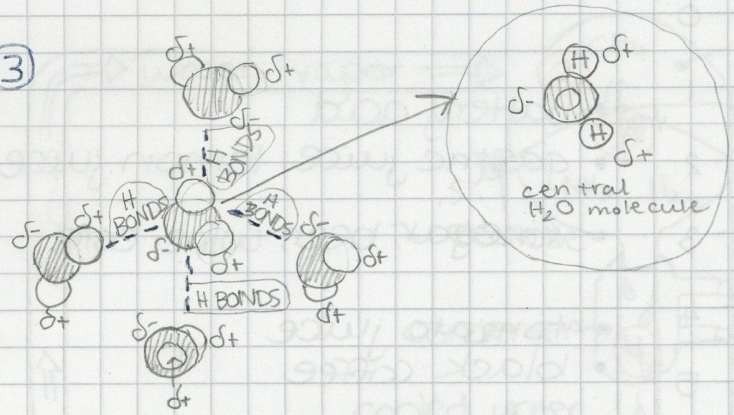
CHAPTER 3 AP BIOLOGY Julia Keller 12d

(1) (3)



(20) a) molecular formula: $C_{12}H_{22}O_{11}$

b) mass of each element

C: (12.01g/mol)(12 mol) = 144.12g C
O: (16.00g/mol)(11 mol) = 176.00g O
H: (1.00g/mol)(22 mol) = 22.02g H

c) add the masses together

144.12 + 176 + 22.02 = 342.14g ≈ 342g

To obtain 1L of a 1-M sucrose solution, add 342g sucrose to water to bring it to a volume of 1L.

(21) a) molecular formula: $C_6H_{12}O_6$

b) mass of each element

C: (12.01g/mol)(6 mol) = 72.06g C
O: (16.00g/mol)(6 mol) = 96.00g O
H: (1.00g/mol)(12 mol) = 12.01g H

c) add the masses together

72.06 + 96 + 12.01 = 180.07g ≈ 180g

To obtain 1L of a 1M glucose solution, add 180g of glucose to water to bring it to a volume of 1L.

$\frac{180g}{1L} = \frac{1mol}{1L}$ 0.5(180) = x = 90g/L = 0.5mol

To obtain 1L of a 0.5M glucose solution, add 90g of glucose to water to bring it to a volume of 1L.

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