23º) EDELVIVES (p. 222)

$$C_{12}H_{22}O_{11\,(s)} + 12\,O_{2\,(g)} \rightleftharpoons 12\,CO_{2\,(g)} + 11\,H_2O_{(g)} + Q$$

1 mol — 12 mol — 12 mol — 11 mol — 5840 $\frac{kJ}{mol}$

a) R. Combustión

b)

$$50\,g\,C_{12}H_{22}O_{11} \cdot \frac{1\,mol\,C_{12}H_{22}O_{11}}{342\,g\,C_{12}H_{22}O_{11}} \cdot \frac{11\,mol\,H_2O}{1\,mol\,C_{12}H_{22}O_{11}} \cdot \frac{18\,g\,H_2O}{1\,mol\,H_2O} = 28'9\,g_{H_2O}$$

$$50\,g_{C_{12}H_{22}O_{11}} \cdot \frac{1\,mol\,C_{12}H_{22}O_{11}}{342\,g\,C_{12}H_{22}O_{11}} \cdot \frac{12\,mol\,CO_2}{1\,mol\,C_{12}H_{22}O_{11}} \cdot \frac{44\,g\,CO_2}{1\,mol\,CO_2} = 77'2\,g\,CO_2$$

c) ⇓

$$0'146\,mol_{C_{12}H_{22}O_{11}} \cdot \frac{12\,mol\,CO_2}{1\,mol\,C_{12}H_{22}O_{11}} \cdot \frac{22'4\,L_{CO_2}}{1\,mol\,CO_2} = 39'3\,L_{CO_2}$$

d)

$$0'146\,mol_{C_{12}H_{22}O_{11}} \cdot \frac{5840\,kJ}{1\,mol\,C_{12}H_{22}O_{11}} = 853'8\,kJ$$ se desprenden al quemar 50 g de azúcar.