B5

a) NaOH 0'2 M
$V_{NaOH} = 250 ml$

$M = \frac{moles}{V} \Rightarrow 0'2 = \frac{moles}{0'25} \rightarrow moles_{NaOH} = 0'05$

$moles = \frac{gr}{Pm} \rightarrow gr\ NaOH = 0'05 moles \cdot 40 g/mol$

$g\ NaOH = \boxed{2 g\ NaOH}$

b) $C_8H_7O_2COOH + NaOH \longrightarrow C_8H_7O_2COONa + H_2O$

c) 12'5 ml NaOH pto Equiv.

moles NaOH $\longrightarrow 0'0125\ l \cdot 0'2 \frac{moles}{l} = 2'5 \cdot 10^{-3}$ moles NaOH

Luego $2'5 \cdot 10^{-3}$ moles ácido PUROS $\longrightarrow gr_{\text{Á'ácido PUROS}} = 2'5 \cdot 10^{-3} \cdot Pm$

$g_{\text{Á'ácido PUROS}} = 2'5 \cdot 10^{-3} \cdot 180 = 0'45\ gr$ Á'ácido PUROS

1 aspirina 650 mg = 0'65 g TOTALES

$\%\ Riq = \frac{0'45}{0'65} \cdot 100 = \boxed{69'23\%}$

d) 250 ml

1 aspirina $\rightarrow$ 0'45 gr AC.

	$HA \rightleftharpoons$	H^+	$+ A^-$
to	0'45	−	−
teq	0'45 − x	x	x

$Ka = \frac{\frac{x^2}{V^2}}{\frac{0'45-x}{V}} = \frac{x^2}{(0'45-x) \cdot V} = Ka \Rightarrow 2'64 \cdot 10^{-5} = \frac{x^2}{(0'45-x) \cdot 0'25}$

Obtenemos x $\longrightarrow \frac{x}{0'25 ml} = [H^+] \longrightarrow pH = -\log [H^+]$.