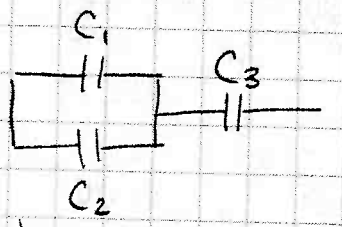
P#P

Ch 16

a) $C_1 = C_2 = C_3 = 100\,\mu F$ For A:



$C_{12} = \sum C_i$ (C_1 and C_2 are parallel)

$= C_1 + C_2 = 100\,\mu F + 100\,\mu F$

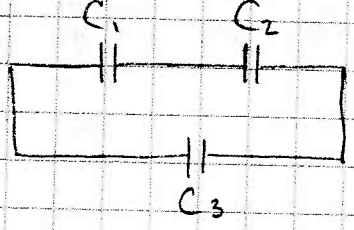
$C_{12} = 200\,\mu F$

$C_{eq}^{-1} = \sum C_i^{-1}$ (C_{12} and C_3 are series)

$C_{eq}^{-1} = (200\,\mu F)^{-1} + (100\,\mu F)^{-1}$

$\boxed{C_{eq} = 67\,\mu F}$

b) For B:



$C_{12}^{-1} = \sum C_i^{-1}$ (C_1 and C_2 are series)

$C_{12}^{-1} = (100\,\mu F)^{-1} + (100\,\mu F)^{-1}$

$C_{12} = 50\,\mu F$

$C_{eq} = \sum C_i$ (C_{12} and C_3 are in parallel)

$C_{eq} = 50\,\mu F + 100\,\mu F$

$\boxed{C_{eq} = 150\,\mu F}$