

#### 4B6 Answers 2010

Q1: (b) 5.06 V;  
(c)  $2.29 \times 10^{-6}$  m;  
(d)  $4.05 \times 10^{-5}$  Farad  $\text{m}^{-2}$ .

Q2: (b) 0.659 V;  
(c)  $3.12 \times 10^{-3}$  C  $\text{m}^{-2}$ .

Q3: (a)  $25 \mu\text{C cm}^{-2}$ ,  $80 \text{ kV cm}^{-1}$ ,  $8 \times 10^6 \text{ J m}^{-3}$ ;  
(b) 2.9 fC, 19 fC; 1.5 mV, 9.5 mV; 58nm square;  
(c) 10 yrs, 1,000 yrs.