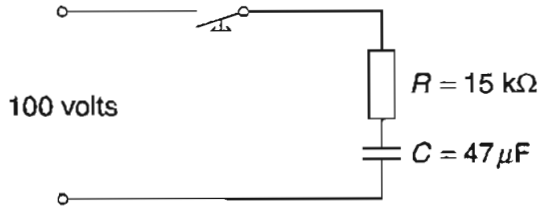
Question 20 (5 marks) .000047m

An electrical circuit is shown.

V
T R



Calculate, showing all working:

(a) the time constant for the circuit; **2**

15000 × 0.000047

= 0.71

15000Ω 100V 0.000047F

(b) the maximum circuit current; **1**

$\frac{V}{R}$ $\frac{100}{15000}$ = 0.01A

(c) the value of resistance to be added to change the time constant to one second. **2**

21200 × 0.000047 = 1.00

21200 − 15000 = 6200Ω

6200Ω need to be added