

3 A charged capacitor is discharged through a resistor. The potential difference across the capacitor halved in a time  $t$ . The time constant is  $T$ .

Which of the following is the equation for  $t$ ?

☐ **A**  $t = \frac{\ln 2}{T}$

☐ **B**  $t = \ln \frac{1}{2T}$

☐ **C**  $t = T \ln \frac{1}{2}$

☐ **D**  $t = T \ln 2$

(Total for Question 3 = 1 mark)