Given R = 100, C = 100μF, Vs = −5V, and v_c(0) = 0, compute values of the following variables:

Q1. Current flow through capacitor C (flowing downward) at time t = 0.01s, i_c(0.01)

Q2. Voltage across capacitor terminals at time t = 0.01s, v_c(0.01)

Q3. Voltage across capacitor terminals at time t = 0.03s, v_c(0.03)

Q4. Voltage across capacitor terminals at time t = 0.06s, v_c(0.06)

Q5. Voltage across capacitor terminals at time t = 0.09s, v_c(0.09)

Write your answers in the following format.

Q2.1. i = 0 A
Q2.2. v = 0 V
Q2.3. v = 0 V
Q2.4. v = 0 V
Q2.5. v = 0 V