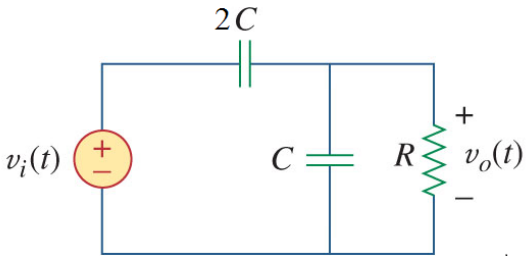
Student ID:_____ Student Name:_____

For the circuit on the right,

a) Its frequency response follows the form:

$$\frac{\mathbf{V_o}}{\mathbf{V_i}} = \frac{A}{1+\omega_c / j\omega}$$

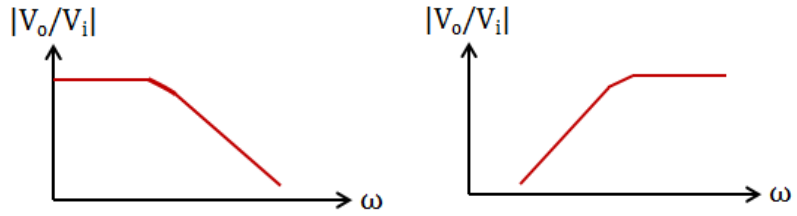
Find the value of A and derive the expression for ω_c in terms of the component symbols (e.g. R, C);



b) Determine $|V_o/V_i|$ when $\omega = 0$, $\omega = \omega_c$, and $\omega \rightarrow \infty$;

c) Determine $\angle(V_o/V_i)$ when $\omega = 0$, $\omega = \omega_c$, and $\omega \rightarrow \infty$;

d) Circle the corresponding plot of $|V_o/V_i|$ vs ω from the following choices;



e) When $\omega = 10\omega_c$, and the amplitude of $V_i = 2$ V, estimate the amplitude of V_o in V.