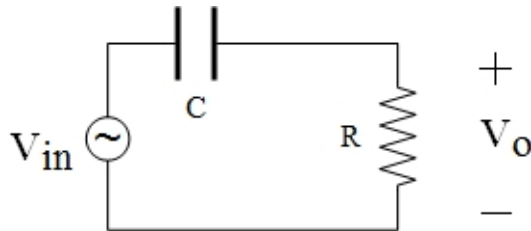


**Started on** Wednesday, 17 April 2019, 1:51 PM**State** Finished**Completed on** Wednesday, 17 April 2019, 2:28 PM**Time taken** 37 mins 11 secs**Grade** 100.00 out of 100.00**Question 1**

Correct

Mark 100.00 out of 100.00



Quiz 9e

Given:  $C = 2.5 \text{ nF}$  (nano F)       $R = 25 \text{ k}\Omega$  (kilo Ohm)a) Find the cutoff frequency  $f_c$  for this high-pass filter.

$$f_c = \boxed{2546.479} \checkmark \text{ Hz}$$

For following answers in polar form, write the answer with a positive magnitude and the smallest appropriate positive angle.

b) Find the  $H(j\omega)$  for  $H(j\omega = 0.25\omega_c)$ .

$$H(j\omega = 0.25\omega_c) = \boxed{0.242} \checkmark \text{ at angle } \boxed{75.963} \checkmark^\circ \text{ (Degrees)}$$

c) Find the  $H(j\omega)$  for  $H(j\omega = 1.1\omega_c)$ .

$$H(j\omega = 1.1\omega_c) = \boxed{0.739} \checkmark \text{ at angle } \boxed{42.273} \checkmark^\circ \text{ (Degrees)}$$

d) Find the  $H(j\omega)$  for  $H(j\omega = 3.5\omega_c)$ .

$$H(j\omega = 3.5\omega_c) = \boxed{0.961} \checkmark \text{ at angle } \boxed{15.945} \checkmark^\circ \text{ (Degrees)}$$

**Numeric Answer**a)  $f_c = 2,546.4791 \text{ Hz}$ b)  $H(j\omega = 0.25\omega_c) = 0.2425 \text{ at angle } 75.96^\circ$ c)  $H(j\omega = 1.1\omega_c) = 0.7399 \text{ at angle } 42.27^\circ$ d)  $H(j\omega = 3.5\omega_c) = 0.9615 \text{ at angle } 15.95^\circ$ **Correct**

Marks for this submission: 100.00/100.00.

