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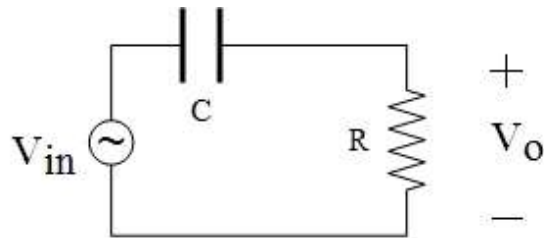
**Time taken** 18 mins 7 secs

**Grade** 100.00 out of 100.00

### Question 1

Correct

Mark 100.00 out of 100.00



Quiz 9b

Given:  $C = 25 \text{ nF}$  (nano F)       $R = 50 \text{ k}\Omega$  (kilo Ohm)

a) Find the cutoff frequency  $f_c$  for this high-pass filter.

$$f_c = 127.3 \text{ Hz}$$

b) Find the  $H(j\omega)$  for  $H(j\omega = 0.2\omega_c)$ .

$$H(j\omega = 0.2\omega_c) = .196 \text{ at angle } 78.8^\circ \text{ (Degrees)}$$

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

$$H(j\omega = \omega_c) = .707 \text{ at angle } 45^\circ \text{ (Degrees)}$$

d) Find the  $H(j\omega)$  for  $H(j\omega = 5\omega_c)$ .

$$H(j\omega = 5\omega_c) = .98 \text{ at angle } 11.3^\circ \text{ (Degrees)}$$

### Numeric Answer

a)  $f_c = 127.3240 \text{ Hz}$

b)  $H(j\omega = 0.2\omega_c) = 0.1961 \text{ at angle } 78.69^\circ$

c)  $H(j\omega = \omega_c) = 0.7071 \text{ at angle } 45^\circ$

d)  $H(j\omega = 5\omega_c) = 0.9806 \text{ at angle } 11.31^\circ$

**Correct**

Marks for this submission: 100.00/100.00.