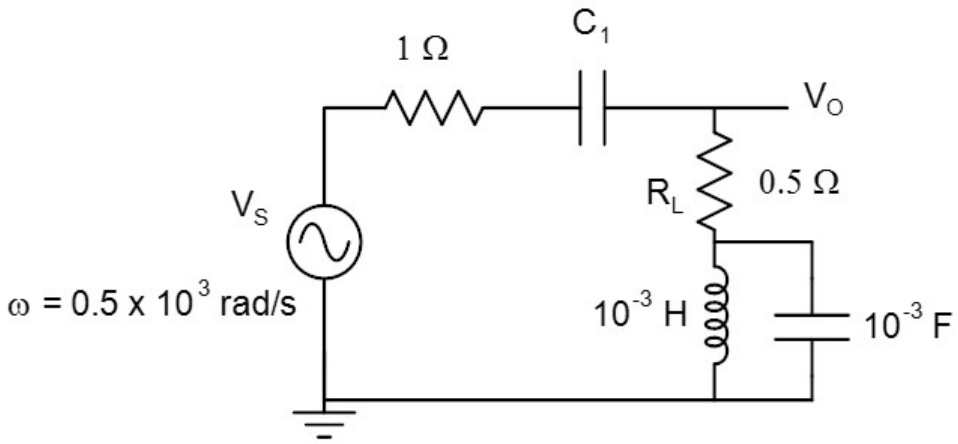
Quiz 2

Q.1 The value of capacitor C_1 (in Milli-Farads) for which maximum power will be dissipated in the load resistor R_L is -------

(answer only as an integer)



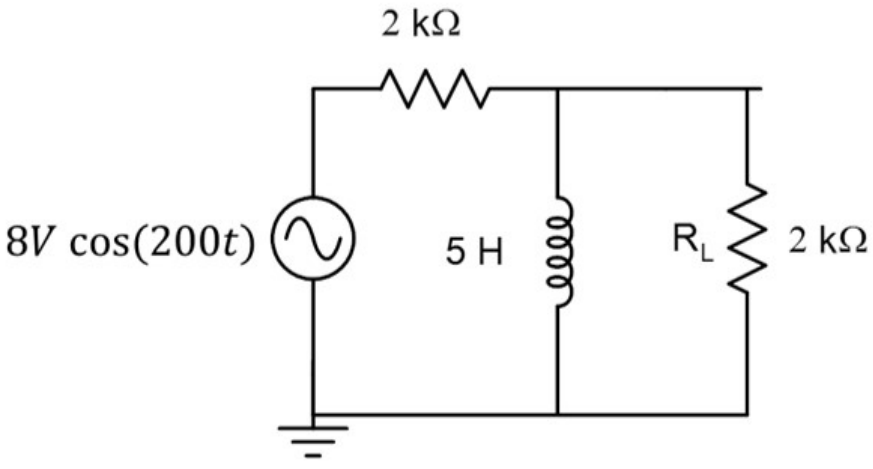
Your answer:

3

Q.2

The power dissipated in load resistor R_L (in milli-watts) is…..

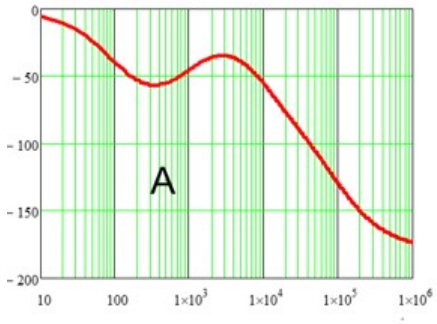
(8V refers to peak value. Give answer as an integer)

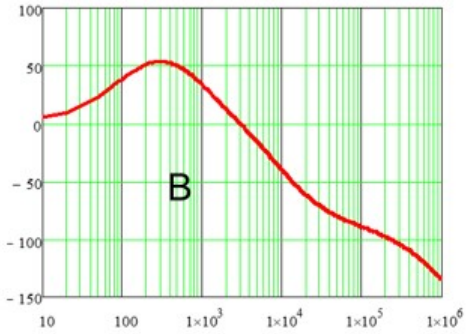


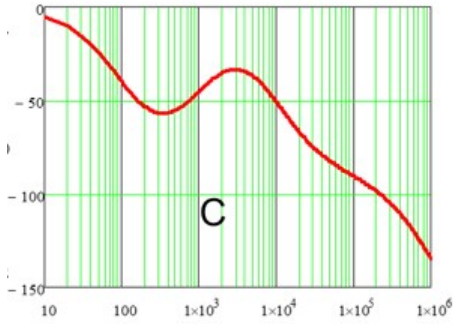
Your answer:

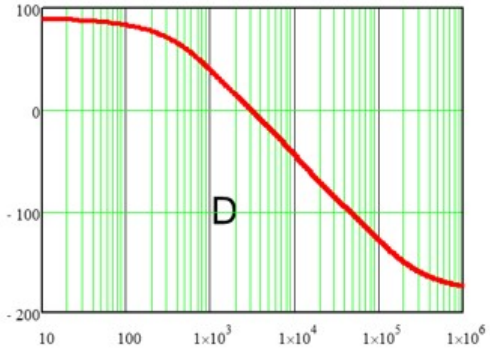
2

Q.3 Match the phase responses (A,B,C,D) to the transfer functions (H1,H2,H3,H4)









$$H1(\omega) = \frac{\left(j \times \frac{\omega}{10^3}\right)}{\left(1 + j \times \frac{\omega}{10^3}\right)} \times \frac{1}{\left(1 + j \times \frac{\omega}{10^4}\right)} \times \frac{1}{\left(1 + j \times \frac{\omega}{10^5}\right)}$$

$$H2(\omega) = \frac{\left(1 + j \times \frac{\omega}{10^3}\right)}{\left(1 + j \times \frac{\omega}{10^2}\right)} \times \frac{1}{\left(1 + j \times \frac{\omega}{10^4}\right)} \times \frac{1}{\left(1 + j \times \frac{\omega}{10^6}\right)}$$

$$H3(\omega) = \frac{\left(1 + j \times \frac{\omega}{10^3}\right)}{\left(1 + j \times \frac{\omega}{10^2}\right)} \times \frac{1}{\left(1 + j \times \frac{\omega}{10^4}\right)} \times \frac{1}{\left(1 + j \times \frac{\omega}{10^5}\right)}$$

$$H4(\omega) = \frac{\left(1 + j \times \frac{\omega}{10^2}\right)}{\left(1 + j \times \frac{\omega}{10^3}\right)} \times \frac{1}{\left(1 + j \times \frac{\omega}{10^4}\right)} \times \frac{1}{\left(1 + j \times \frac{\omega}{10^5}\right)}$$

$H_1 \rightarrow D; H_2 \rightarrow A; H_3 \rightarrow C; H_4 \rightarrow B$

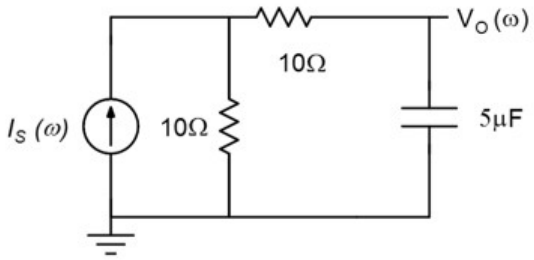
$H_1 \rightarrow B; H_2 \rightarrow A; H_3 \rightarrow C; H_4 \rightarrow D$

$H_1 \rightarrow D; H_2 \rightarrow C; H_3 \rightarrow A; H_4 \rightarrow B$

$H_1 \rightarrow B; H_2 \rightarrow C; H_3 \rightarrow A; H_4 \rightarrow D$

Q.4

For the circuit shown, the closest estimates of the magnitude of the transfer function $\frac{V_O(\omega)}{I_S(\omega)}$ *at* $\omega = 10$ *and* $\omega = 10^6$ *rad/s in dB are*



40dB, 0dB

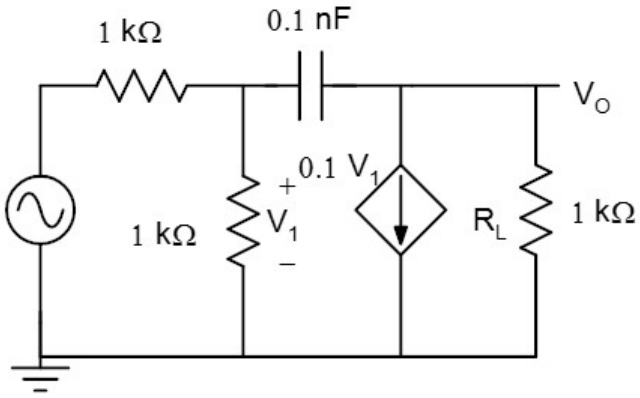
20dB, -40dB

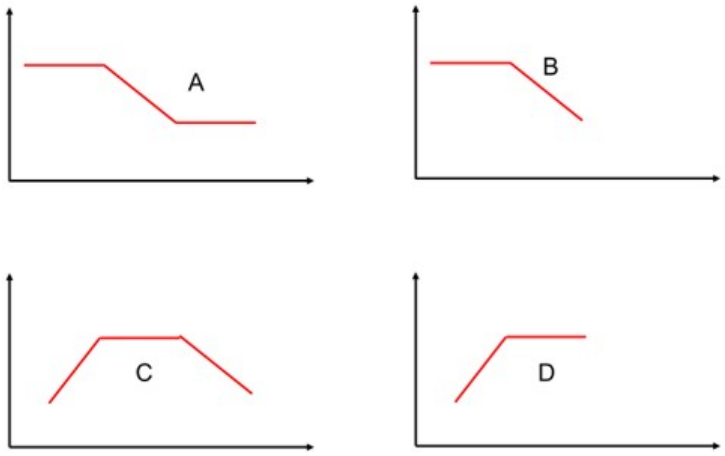
0dB, -40dB

0dB, -20dB

20dB, -20dB

) of output voltage V_O of the amplifier circuit shown below.





C

A

D

B

Score: Will be uploaded after end date.