

**Birzeit University**

**Faculty of Engineering & Techonology**

**Department of Electrical & Computer Engineering**

**ENEE**

**“Prelab Exp#10”**

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| **Problem #1** |  |  |

**Transfer function**





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| **Problem 2** |  |  |

**Transfer Function :-**



Frequency response



The same response of the previous circuit but in **db**, not that the fc is shown on the graph . (at -3dB of the max)



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| **Problem 3 Design** |  |  |

**The filter circuit to be designed is:-**



$$f\_{c}=1k Hz .$$

$$k=1.5 $$

$$k=\frac{R\_{2}}{R\_{1}}$$

let R1=1kohm

R2=R1\*k = 1.5kohm

$$ wc=\frac{1}{CR\_{1}} $$

$C=\frac{1}{\left( R\_{1} ×2πf\_{c}\right)}=0.15uF≅0.1uF $

Transfer function:-





 

**K=1.5, R2=1.5kohm, R1= 1kohm**

**Simulation:note that the capacitor value was rounded to be 0.1uF this fc to increase but the available is o.1 uF**

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**Frequency response of the output :-**

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**In DB**

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| **Problem 3** |  |  |

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**Frequency response**

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