***Electrical Engineering Department***

***1st year of Communication***

***Electric circuits 2 (2017/2018)***

***Sheet (3)...Parallel Resonance (P.2)***

1. *Consider the circuit of Figure 2.*

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|  | *Fig. 2* |

*a. Calculate the resonant frequency, ωP, of the tank circuit.*

*b. Find the Q of the coil at resonance.*

*c. Sketch the equivalent parallel circuit.*

*d. Determine the Q of the entire circuit at resonance.*

*e. Solve for the voltage across the capacitor at resonance.*

1. *Determine the values of R1and C for the resonant tank circuit of*

*Figure 3 so that the given conditions are met.*

*L=10 mH, Rcoil=30Ω, fP=58 kHz, BW =1 kHz*

*Solve for the current, IL, through the inductor.*

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| 1. *For the shown figure, find the resonant frequency in rad per sec & in hertz .*      1. *In the shown figure,* 2. *find Z at resonance and fp* 3. *what are the inductive and capacitive current at resonance*      |  |  | | --- | --- | |  |  | | *Fig. 3* |