Sheet (5) - solution

Oscillators – part 2

1. Why is the phase shift through the RC feedback circuit in a phase shift oscillator 180°?
2. What is the basic difference between the Colpitts and the Hartley oscillators?
3. What is the advantage of a FET amplifier in a colpitts or Hartley oscillator?
4. How can you distinguish a Colpitts oscillator from a Clapp oscillator?
5. What value of R_f is required in Figure 1? What is f_r?

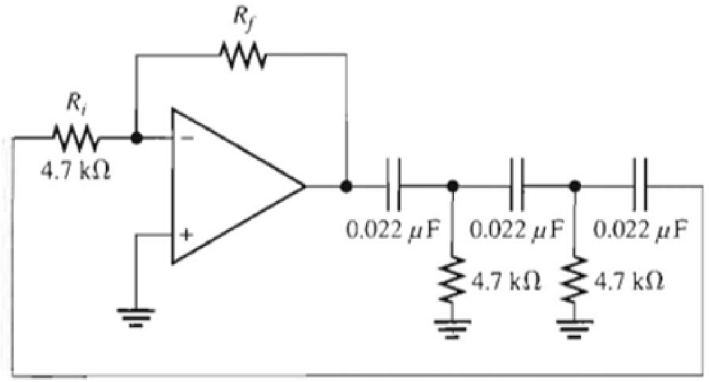

Figure 1

6. Calculate the frequency of oscillation for each circuit in figure 2 and identify the type of oscillator. Assume Q>10 in each case.

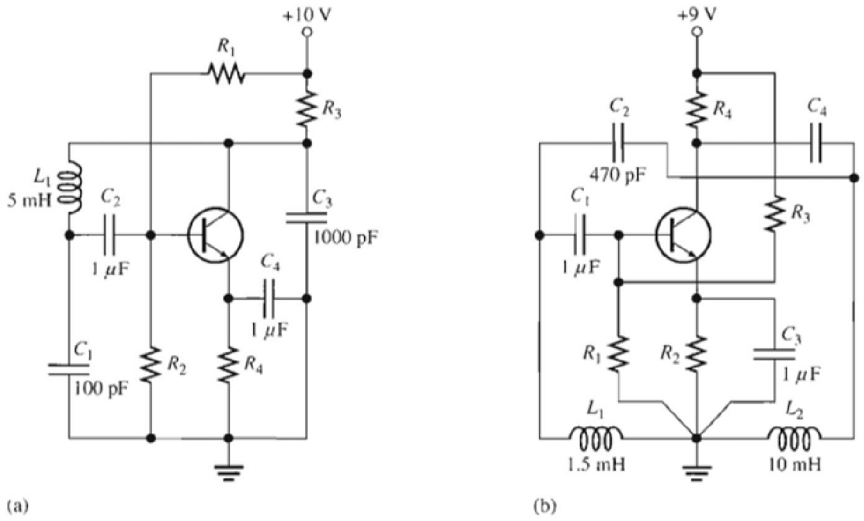

Figure 2

7. Determine the gain of amplifier stage must be in figure 3 in order to have sustained oscillation.

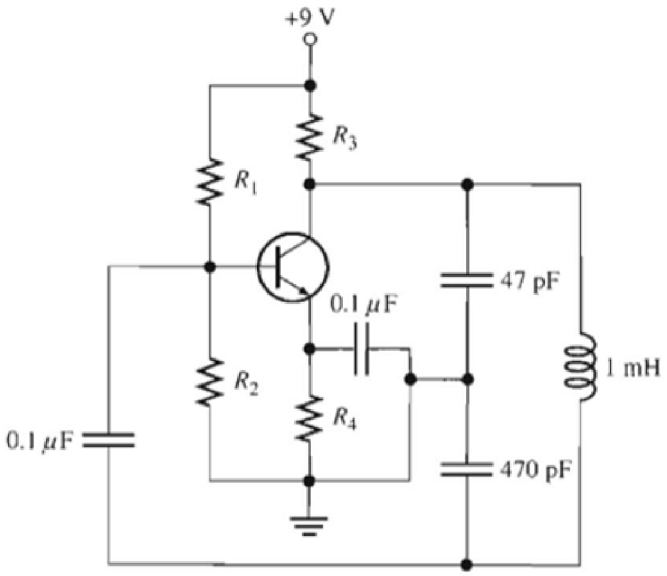

Figure 3

Good Luck

Dr.Rokaia Mounir