EE3304 Oscillators Homework Problems

Problem#1 :

Design an Op Amp phase - shift oscillator to produce a 1KhZ sinusoidal wave.

Problem #2 :

For the Wien – bridge oscillator shown in Fig .(1)

a) Find the frequency of oscillation.

b) Determine the necessary value of R2 so that the circuit will oscillate.

c) Explain the purpose of R3.

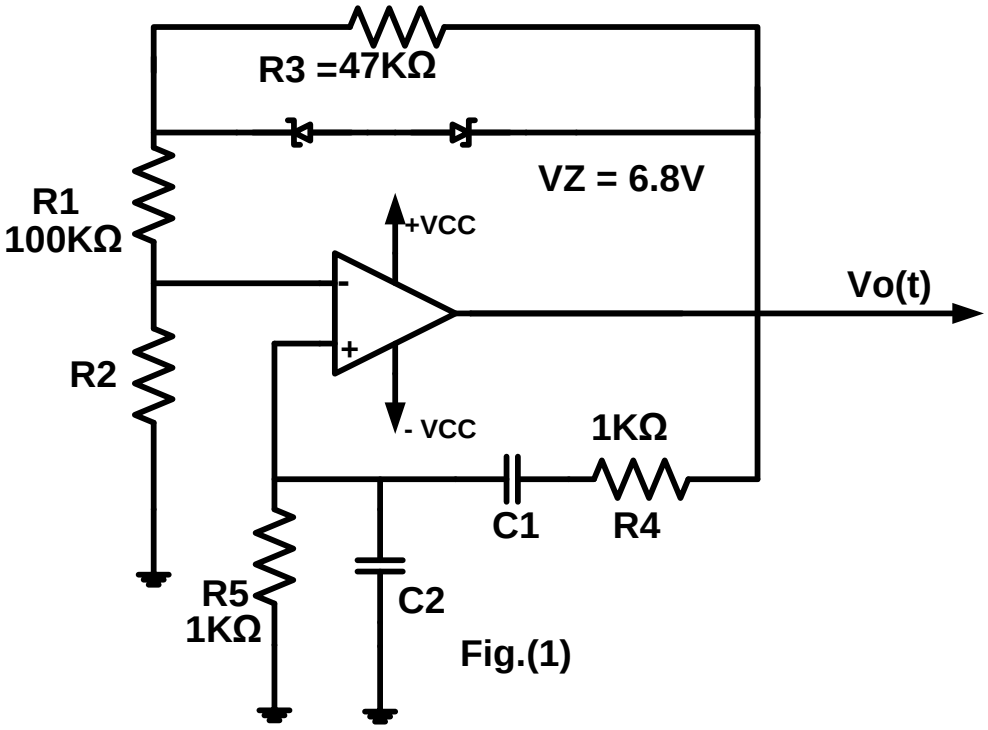

Fig.(1)

C1 = C2 = 0.015 µF

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Problem #3 :

For the circuit in Fig.(2) , find the expression of the frequency of oscillation.

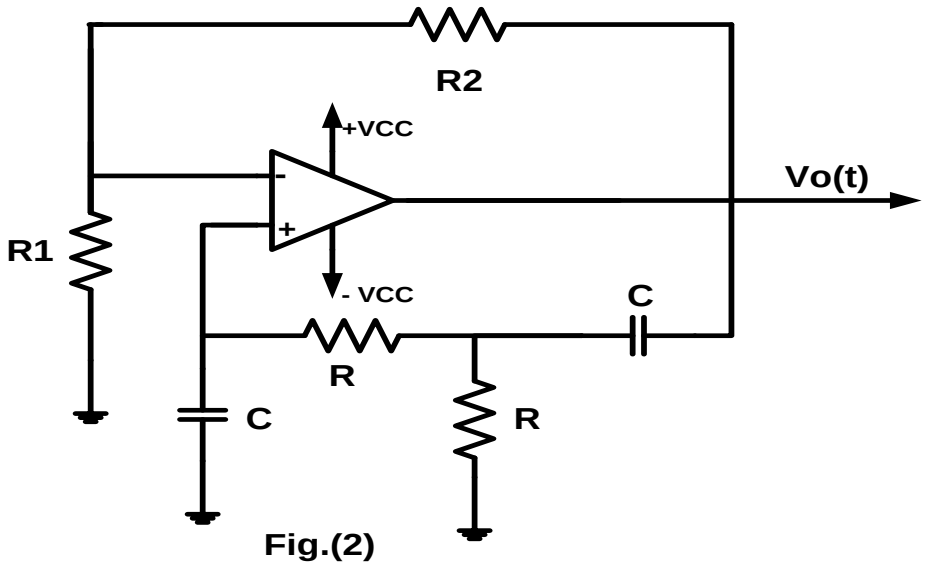

Fig.(2)

Problem #4 :

Calculate the frequency of oscillation and the minimum open circuit voltage gain of the oscillator shown in Fig.(3).

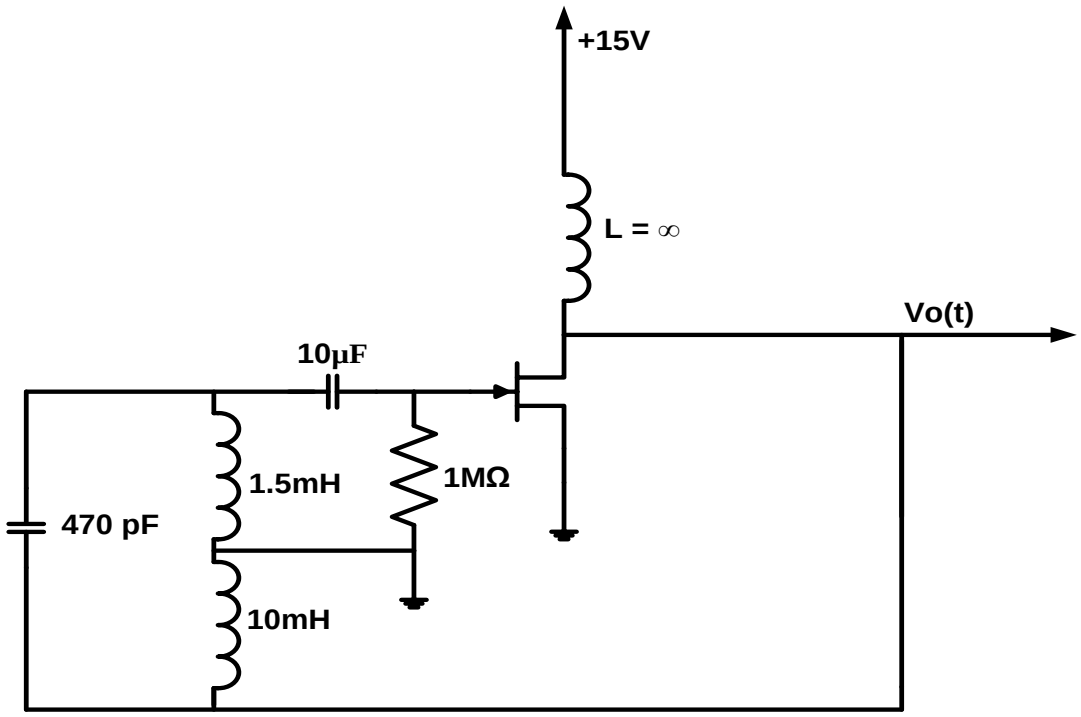

Fig.(3)

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Problem #5 :

What type of signal does the circuit in Fig.(4) produce ?. Determine the amplitude and the frequency of the output Vo(t).

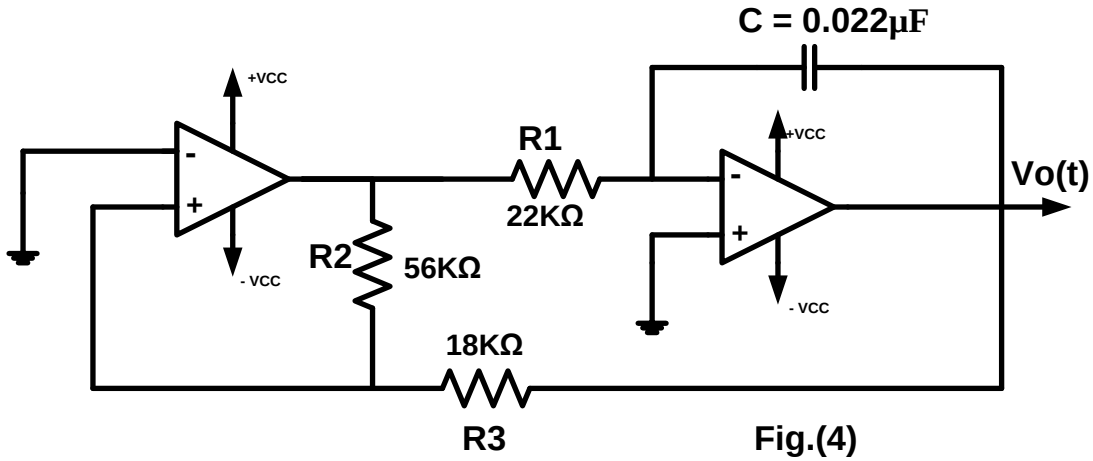

Fig.(4)

Problem #6 :

For the circuit shown in Fig (5)

a) Determine Cex so that the frequency of oscillator is 25KhZ .

b) With the values of Cex found in a), what will be the duty cycle.

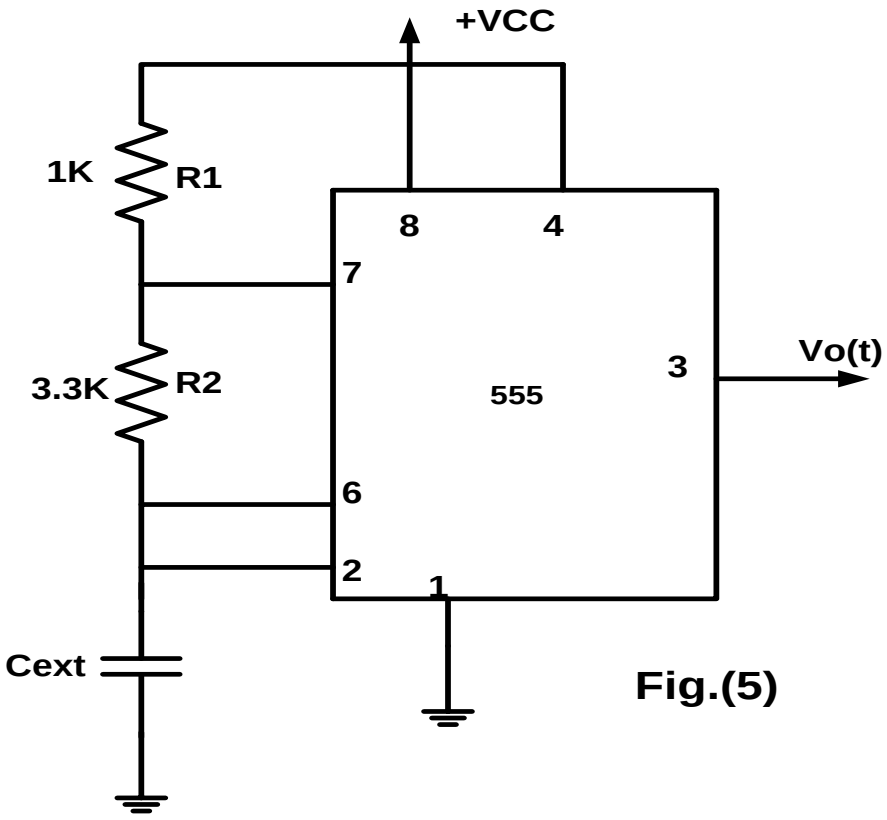

Fig.(5)

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