~~Barkhausen~~

Barkhausen criteria

1. An oscillator will operate at high frequency for which the total phase shift introduces, as measured from the input terminals, through the amplifier and feedback Network and back again to the input is precisely equal to 0 or 360° or integral multiple of 360°.

2. At the oscillator frequency, the magnitude of the product of open loop gain of the amplifier 'A' and the feedback factor (β) is equal to greater than unity.

$\therefore |A\beta| \geq 1.$

A → voltage gain
β → ~~Put~~ feedback factor.

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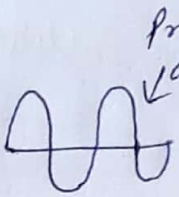
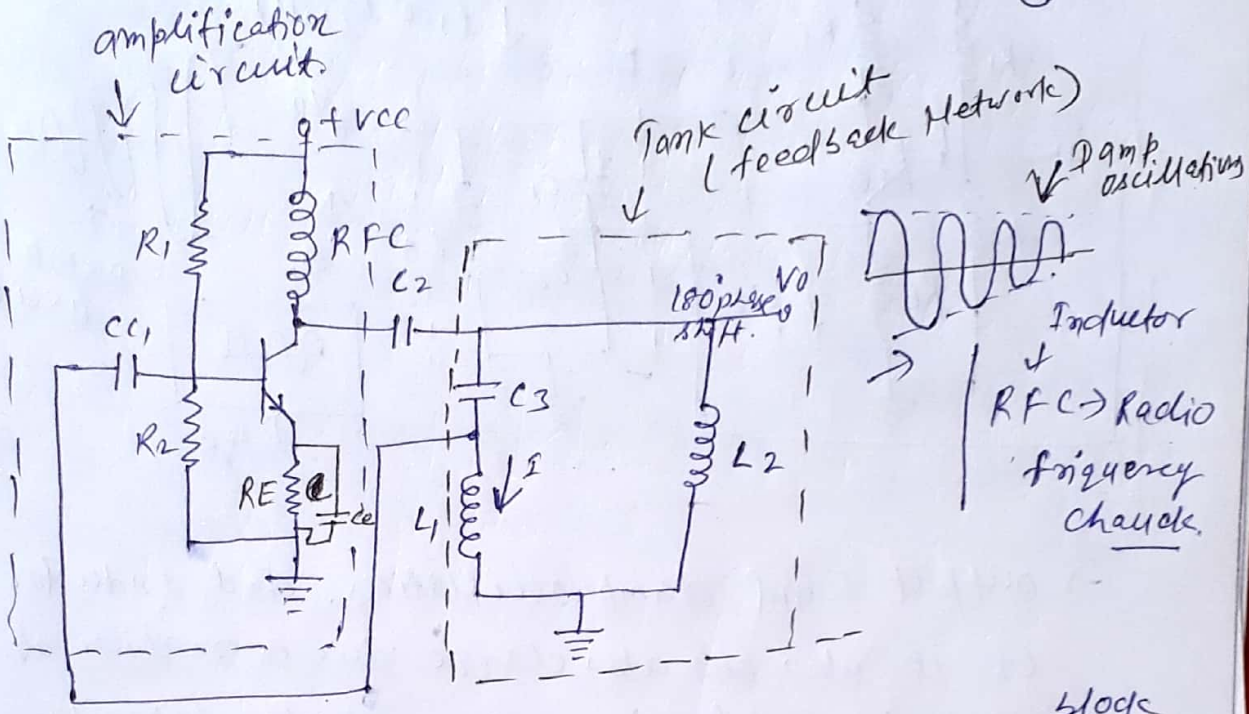
LC (Inductor-capacitor) oscillator.

(1). HARTLEY OSCILLATOR :→





RFC → Radio frequency choke) is a ac signal ~~pass~~ block and dc signal pass in circuit. the capacitor C_2 is charge with +vcc, similarly C_3 is also charge.

→ Capacitor not pass D.C. signal. only pass a.c signal.

→ Inductor as a magnetic field charge stored.

We found as ~~sinusoidal~~ ac signal (like) not a damp ~~sos~~ oscillation., BJT is a amplify the signal and repeat it.

$$f = \frac{1}{2\pi\sqrt{C_3(L_1+L_2)}} = \frac{1}{2\pi\sqrt{C_3 L_{equ.}}}$$

L_{equ} → Inductor equivalent.

L → Inductor.

C → Capacitor

L_1 & L_2 are in series.

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