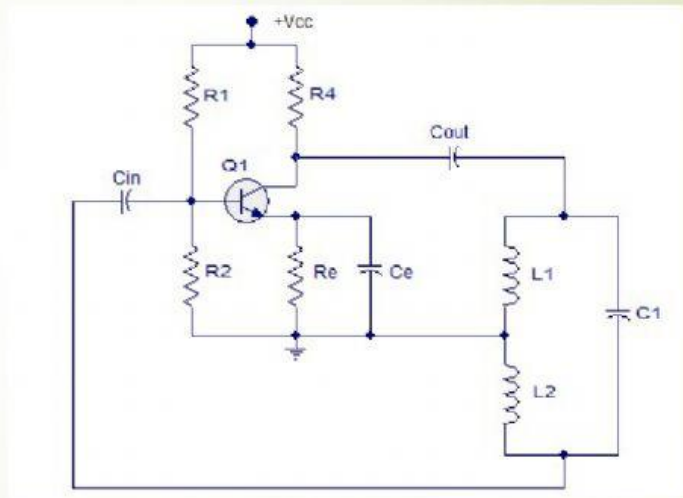
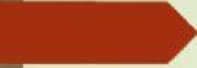


1. This is a schematic of what type of oscillator?

Colpitts
Hartley
Crystal
Wein





2. Feedback must be positive and in phase for an oscillator to produce oscillations.

20sec

True

False

3. Crystals have a very high accuracy of frequency.

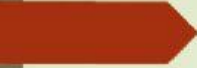
20sec

True

False

4. A condition that is undesirable in oscillators is:

- Positive Feedback
- Gain greater than one
- Unwanted feedback
- Good shielding



5. One condition for oscillation is :

A phase shift around the feedback loop of 180°

A phase shift around the feedback loop of 0°

A gain around the feedback loop of one-third

A gain around the feedback loop of less than 1

6. Frequency of oscillation of Colpitts oscillator is given by

60sec

- a
- b
- c
- d

a. $f_o = \frac{1}{2\pi \sqrt{\frac{L}{C_{eq}}}}$

b. $f_o = \frac{1}{2\pi \sqrt{LC_{eq}}}$

c. $f_o = \frac{1}{2\pi \sqrt{\frac{C_{eq}}{L}}}$

d. None of these

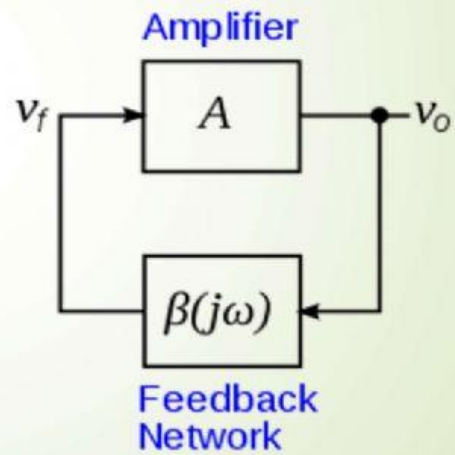
7. What is Barkhausen criterion for oscillation?

$$A\beta > 1$$

$$A\beta < 1$$

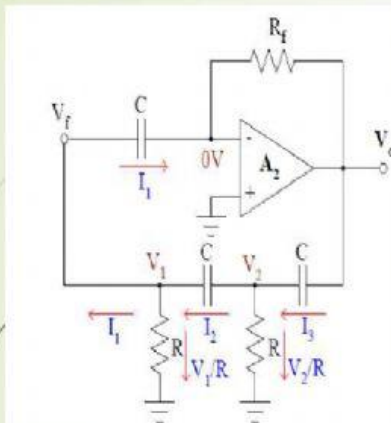
$$A\beta \neq 1$$

$$A\beta = 1$$



8

RC phase-shifted oscillator



1. Continuous oscillation condition,
What part is zero in formular (3)

$$(1) A = \frac{V_o}{V_f} = -\frac{R_f}{\frac{1}{j\omega C}} = -j\omega R_f C$$

$$(2) \beta = \frac{V_f}{V_o}, \text{ 同理可得 } \beta = \frac{\frac{1}{j\omega R C}}{\frac{-4}{\omega^2 R^2 C^2} - j\frac{1}{\omega R C} \left(3 - \frac{1}{\omega^2 R^2 C^2} \right)}$$

$$\beta A = \frac{C}{A + jB}$$

2. If satisfy $\beta A = 1$ $A=C$ $A>C$ $A<C$ Which is correct?