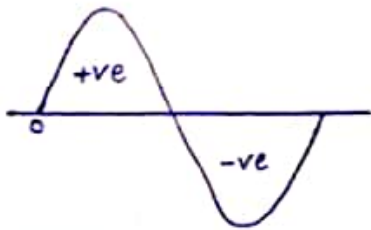


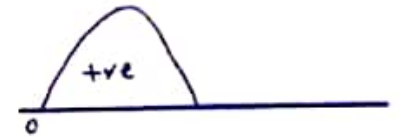
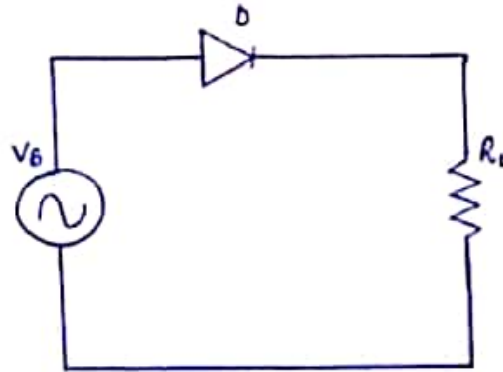
Rectifier: It is an electrical device that converts AC, which periodically reverses its direction to DC, which flows only in one direction.

- Rectifier Types:
- i) half wave rectifier
 - ii) full wave rectifier
 - iii) full wave bridge rectifier

i) half wave rectifier:

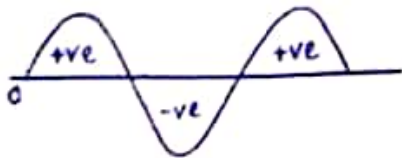


sine wave

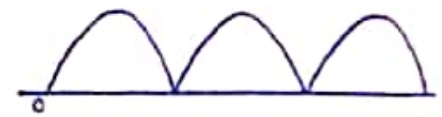
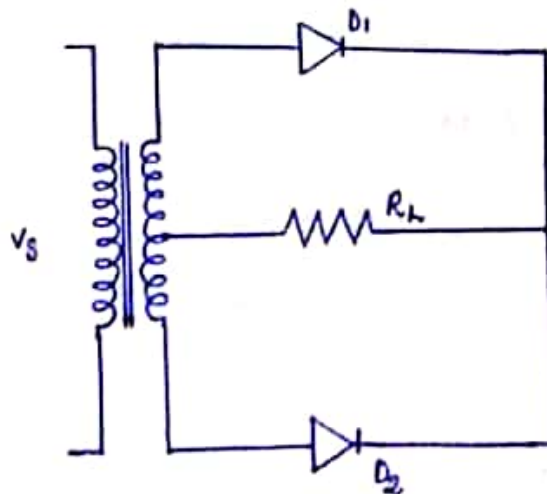


rectified wave

ii) full wave rectifier:

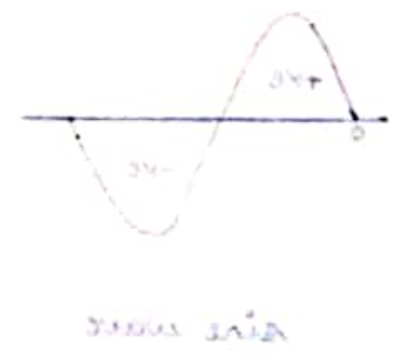
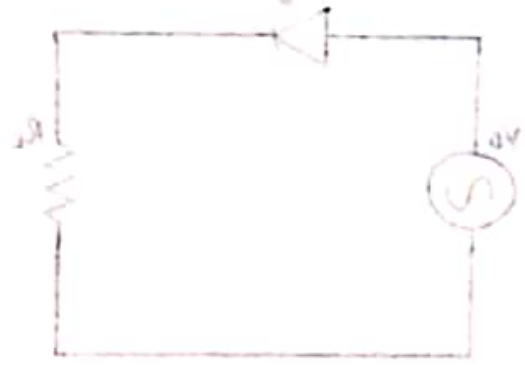
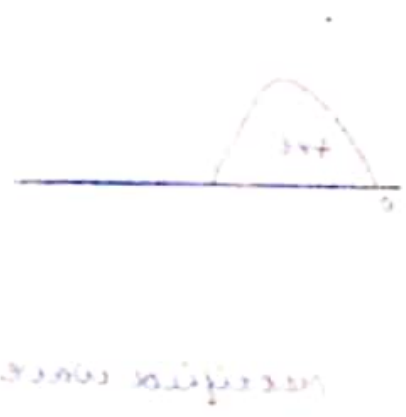
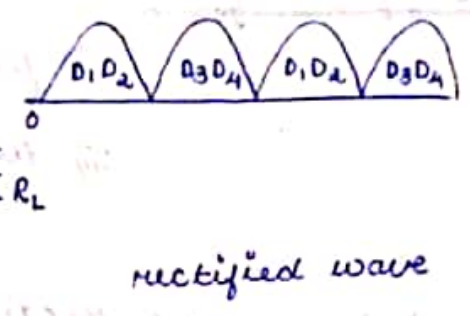
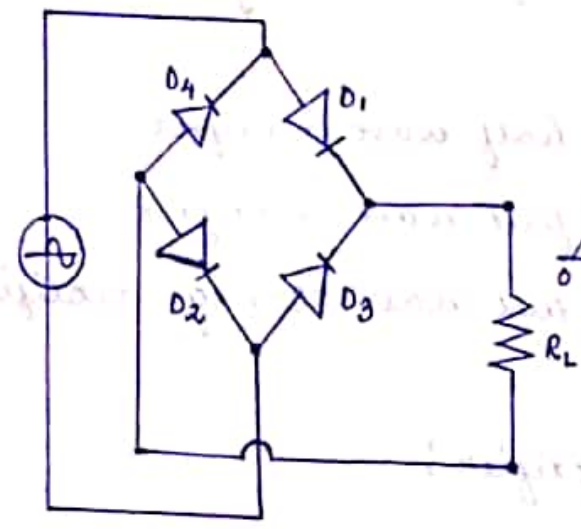
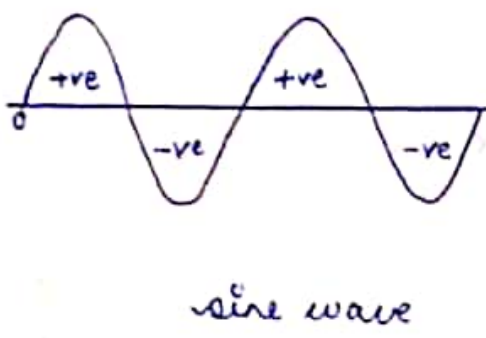


sine wave

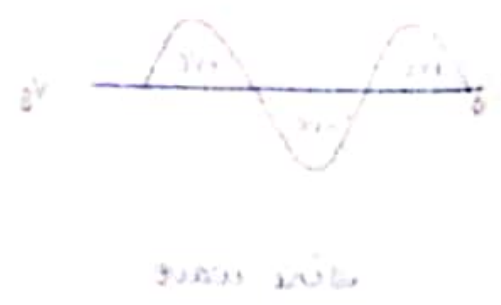
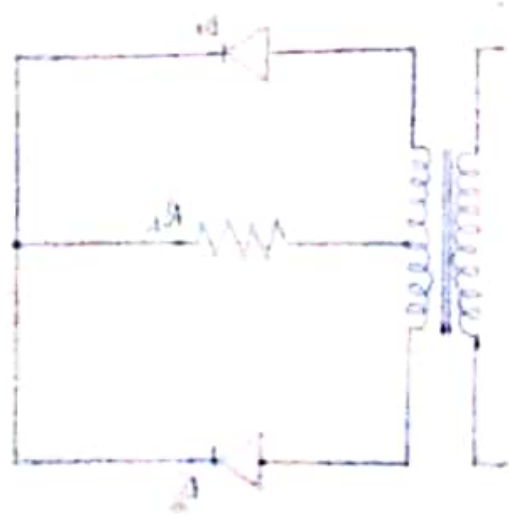
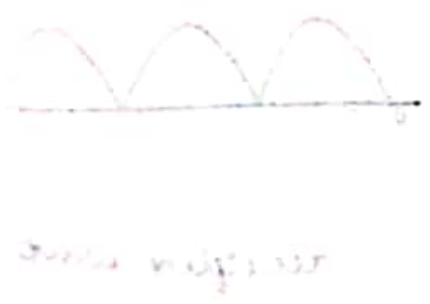


rectified wave

iii) full wave bridge rectifier:



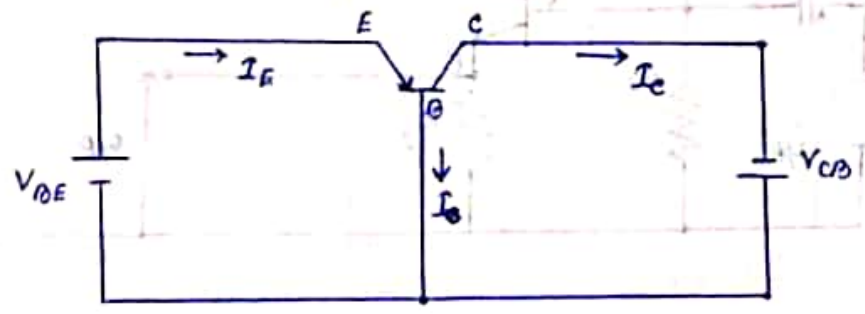
if full wave rectifier:



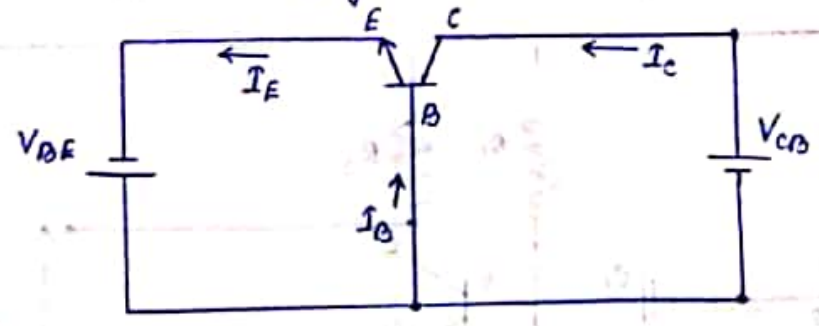
Amplifier: It is an electronic device that can increase the power of a signal and thereby producing a proportionately greater amplitude signal at its output.

- Amplifier types:
- i) PNP transistor
 - ii) NPN transistor
 - iii) CB amplifier
 - iv) CC amplifier
 - v) CE amplifier
 - vi) Push Pull amplifier - Class A
Class B
Class AB

i) PNP transistor (CB configuration)

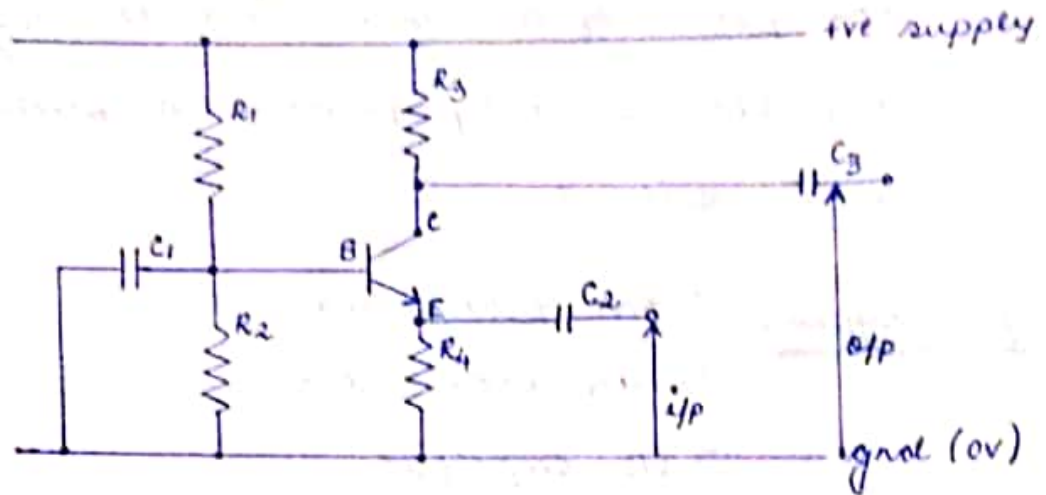


ii) NPN transistor (CB configuration)

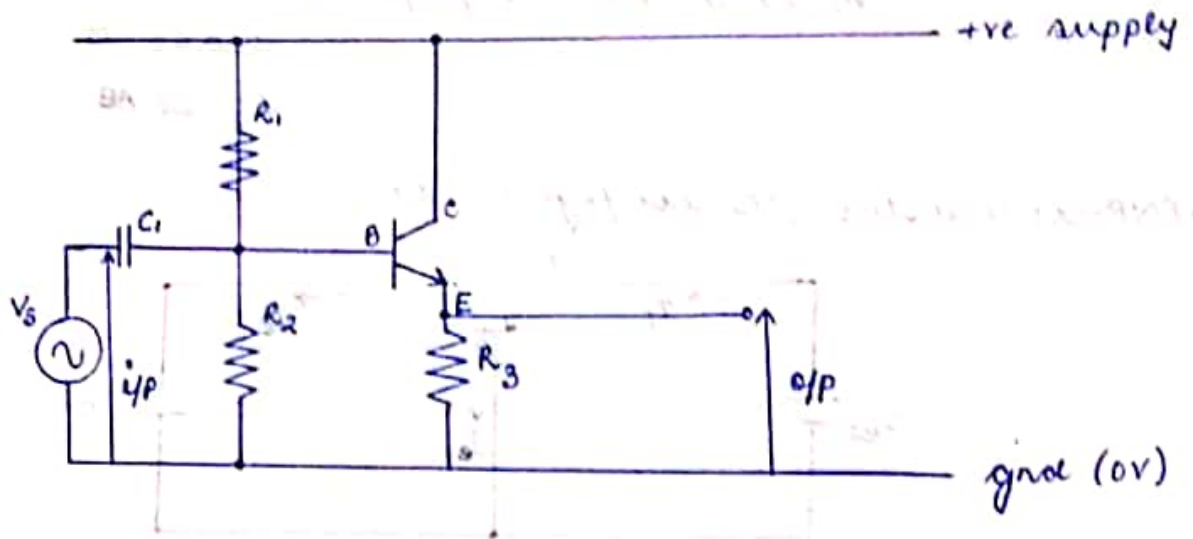


Uses: Microphones

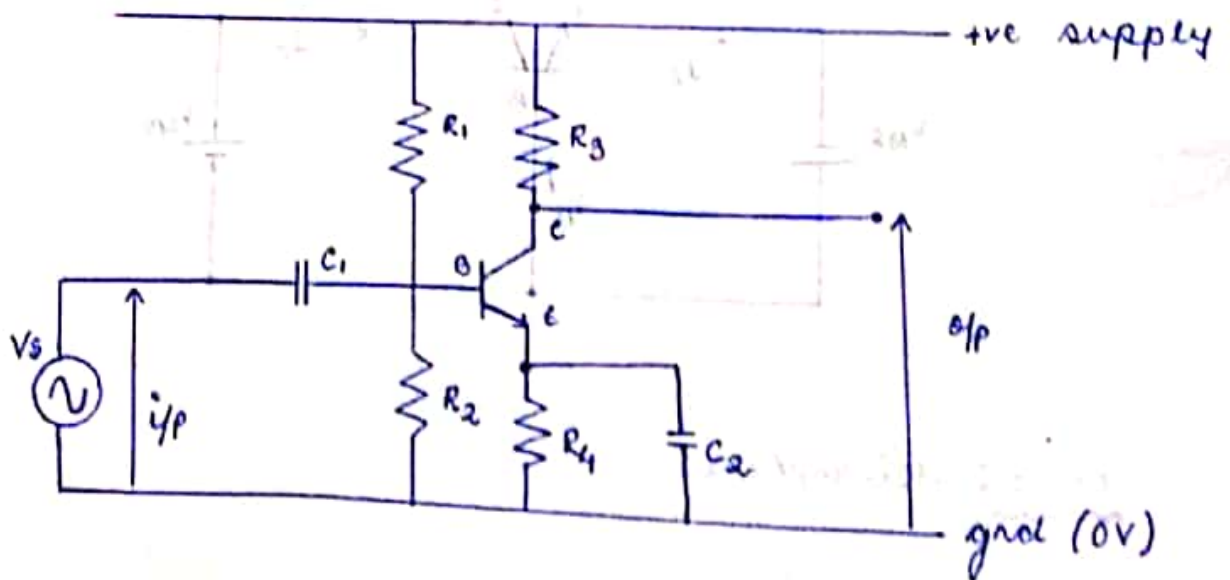
iii) CB amplifier using NPN transistor



iv) CC amplifier using NPN transistor

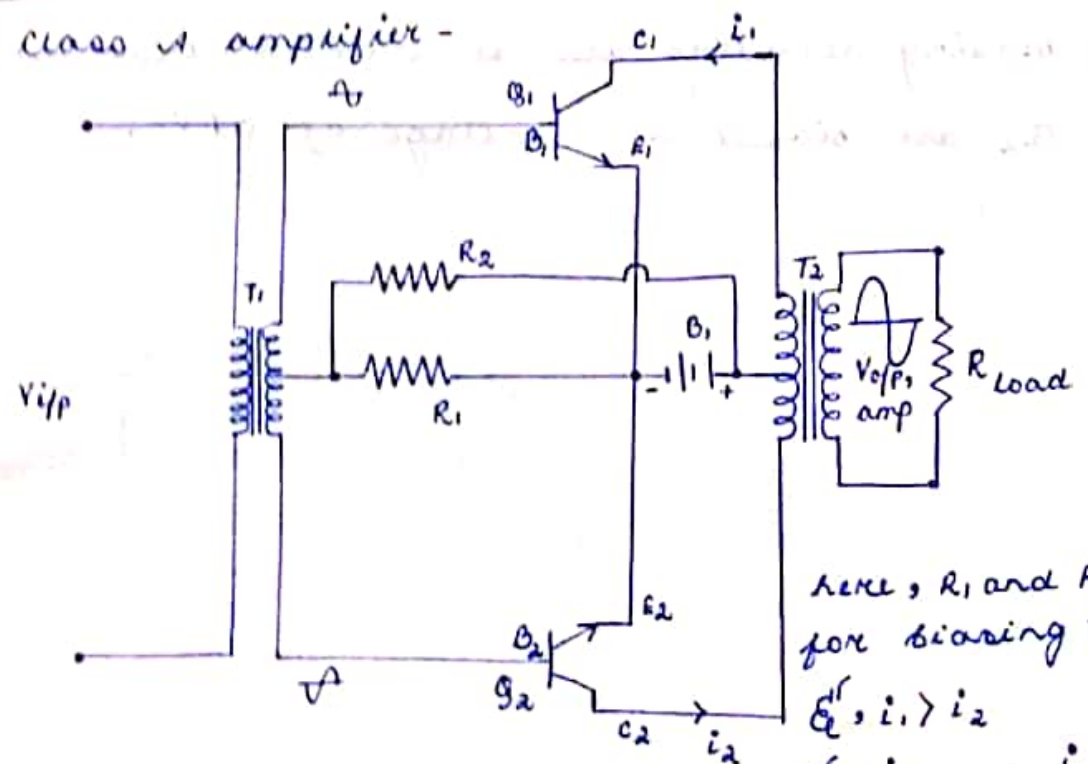


v) CE Amplifier using NPN transistor



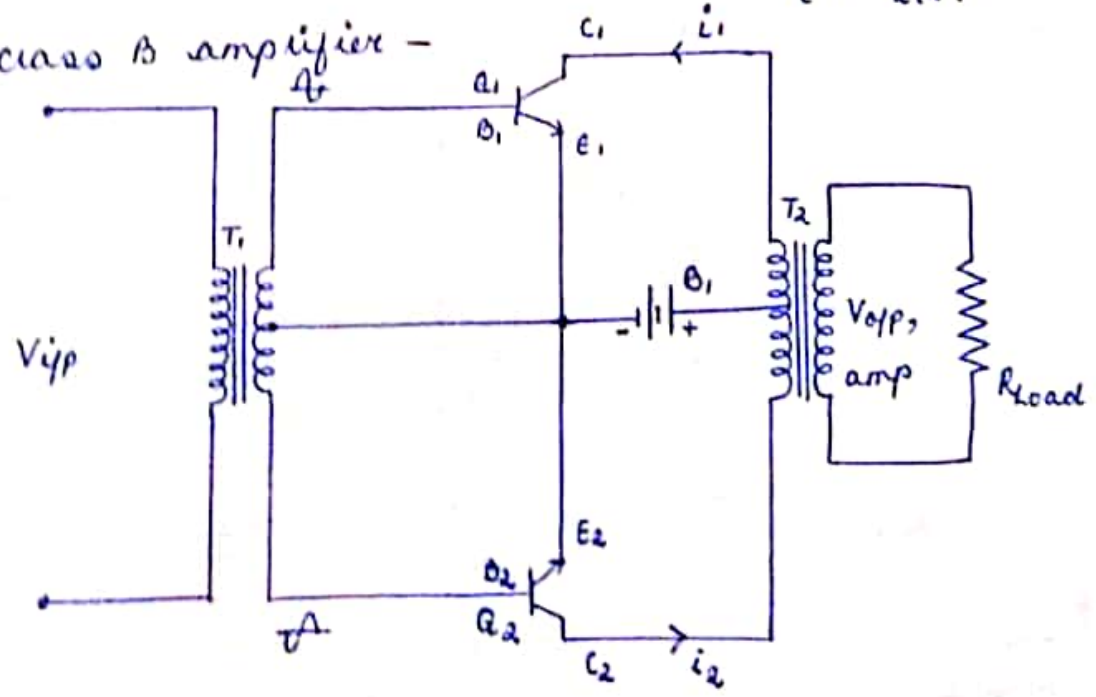
vi) Push-Pull Amplifier: It is such an amplifier that can drive current in either direction through the load. Its output stage consist of two identical BJT, one sourcing current through load and other sinking current from load.

a) class A amplifier -



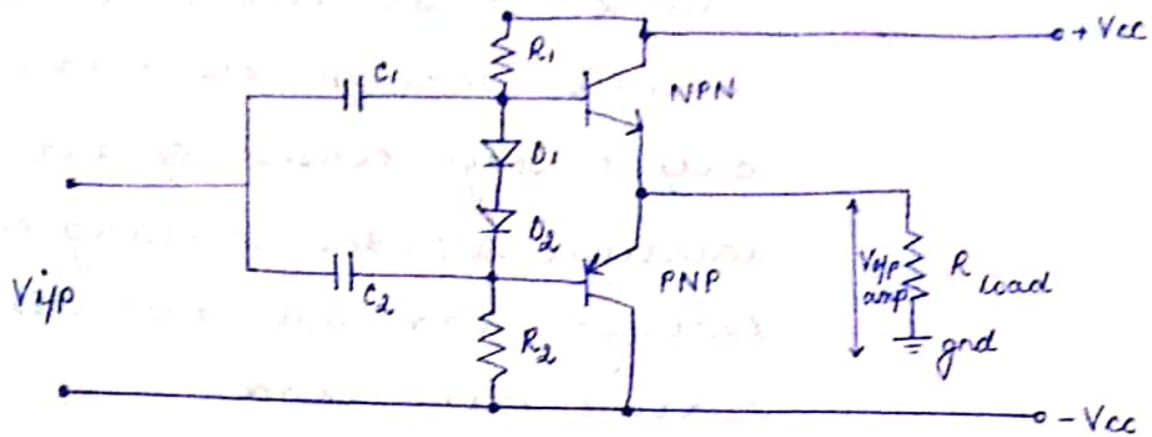
here, R_1 and R_2 are used for biasing the transistors.
 $i_1 > i_2$
 $i_{T_2(2^\circ)} = i_1 - i_2$

b) class B amplifier -



ii) class AB amplifier -

⑥



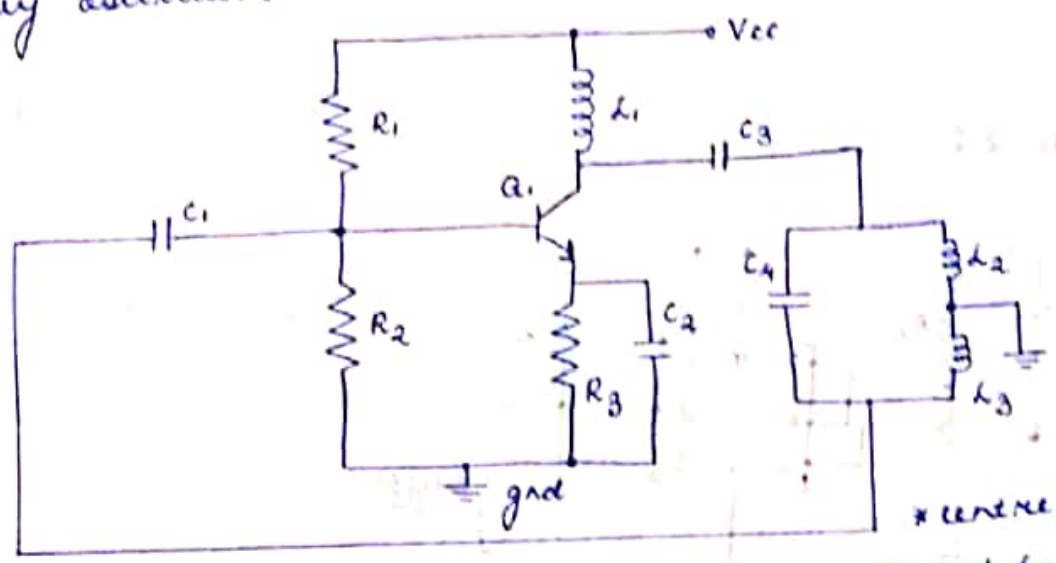
here, biasing resistors are so selected that D_1 and D_2 are biased at a voltage of $0.7V$.



Oscillator: It is an electronic circuit that produces a periodic, oscillating electronic signal, often a sine wave or a square wave.

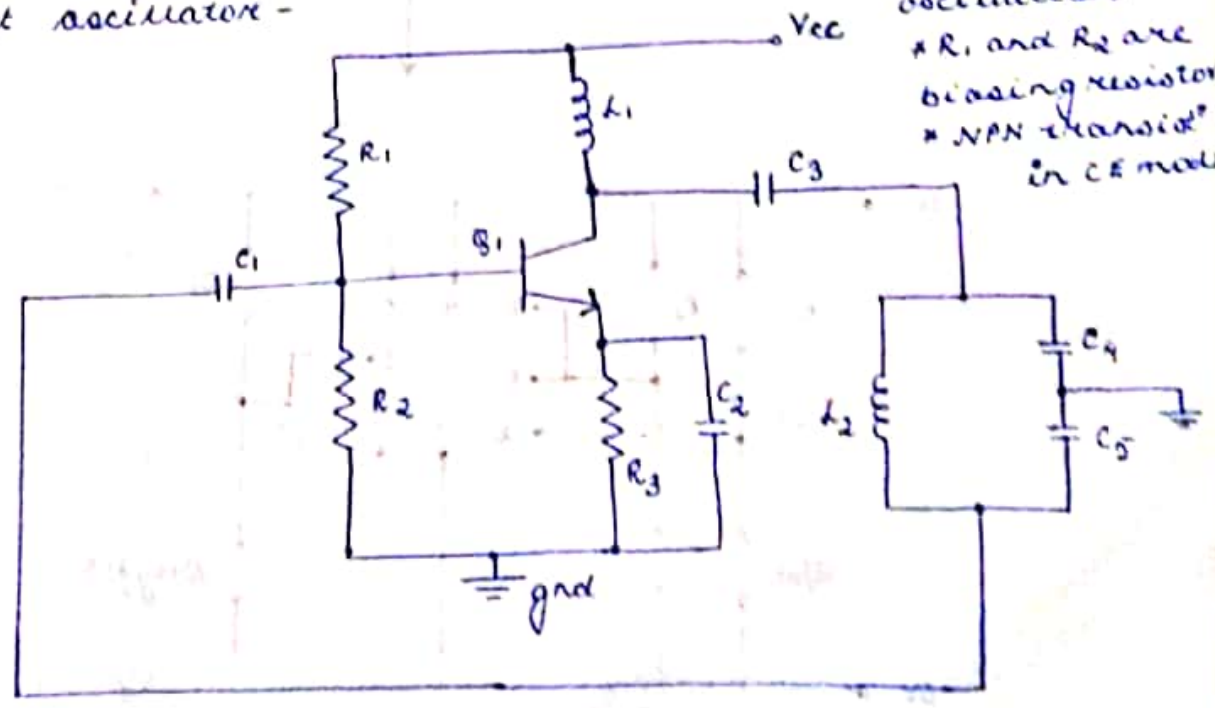
Oscillator types:
1) Hartley Oscillator (AC Oscillator)
2) Colpitt Oscillator

1) Hartley oscillator -



* centre point of L_1 and L_2 provide feedback signal for oscillation
* R_1 and R_2 are biasing resistor
* NPN transistor in CE mode

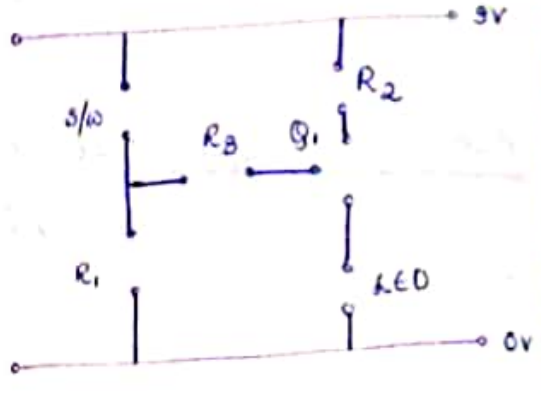
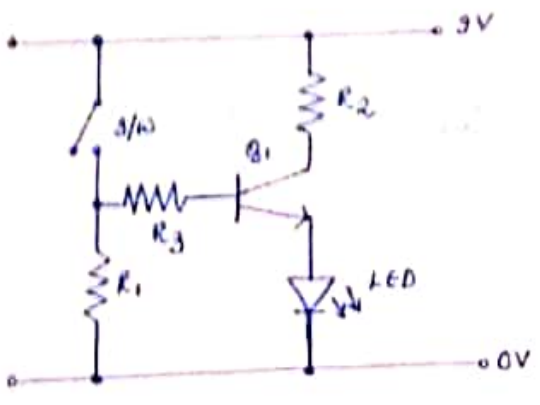
2) Colpitt oscillator -



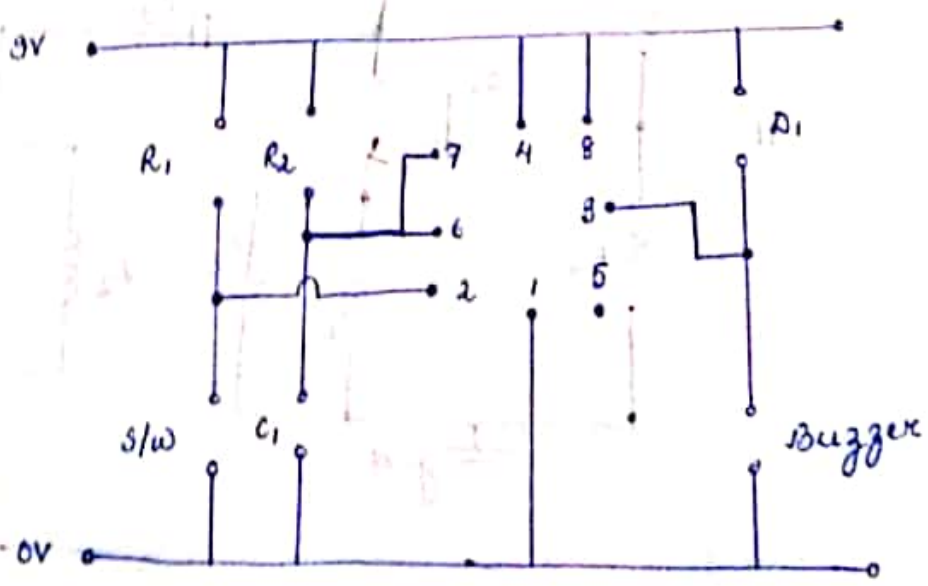
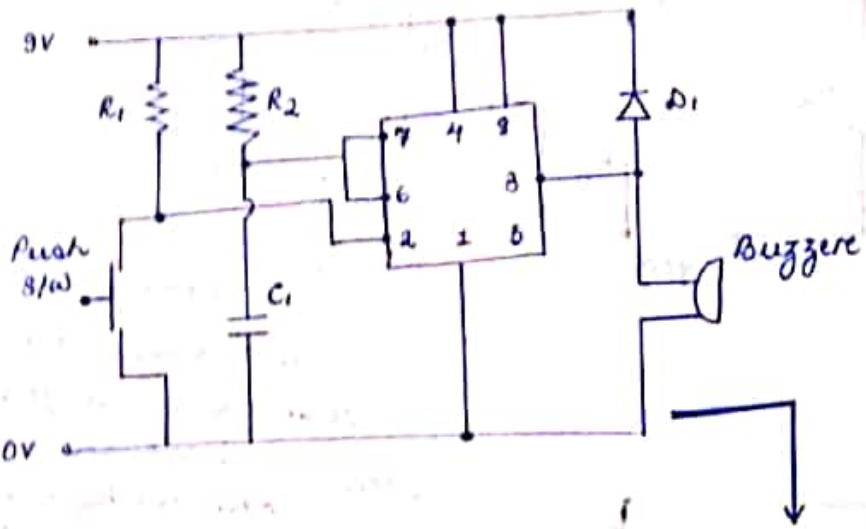
ICB layout :

(8)

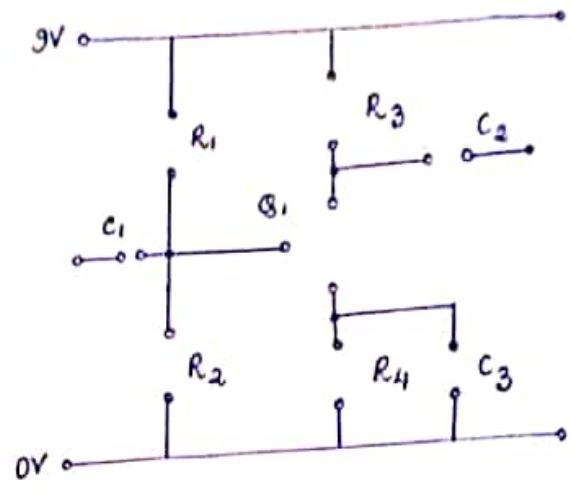
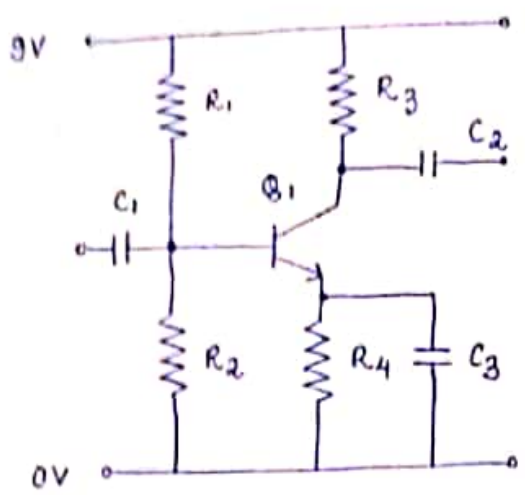
Example 1:



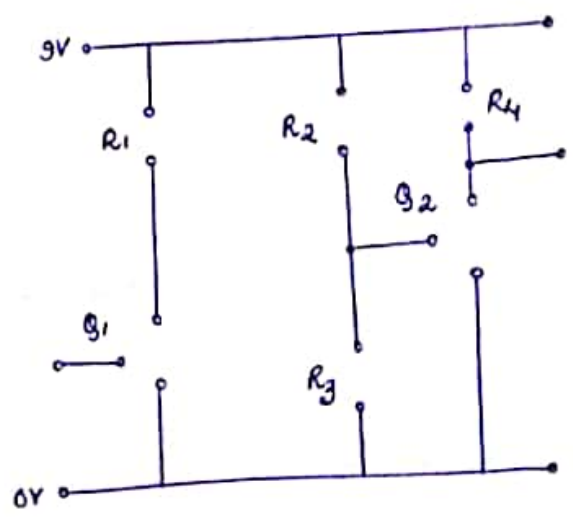
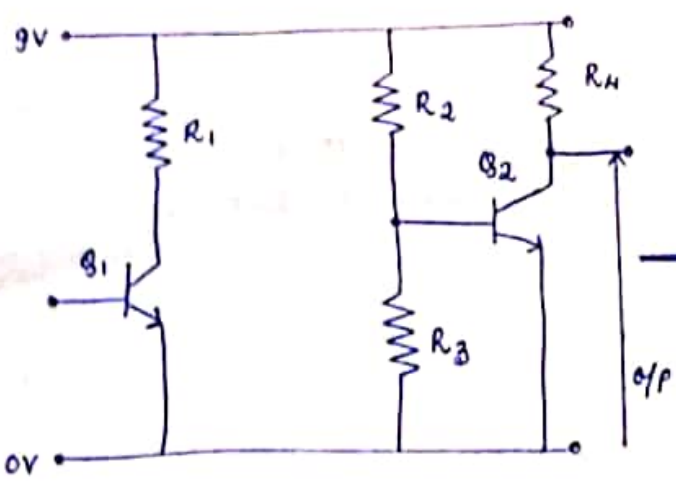
Example 2 :



Example 3:



Example 4:



Example 5:

