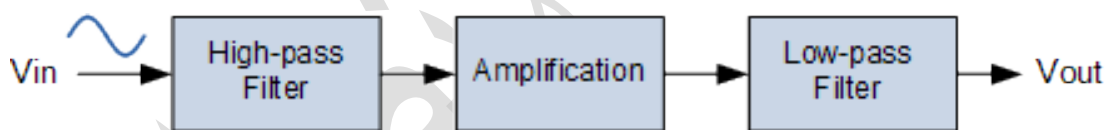


## EXP(4)

## EXP NAME : Active Band Pass Filter

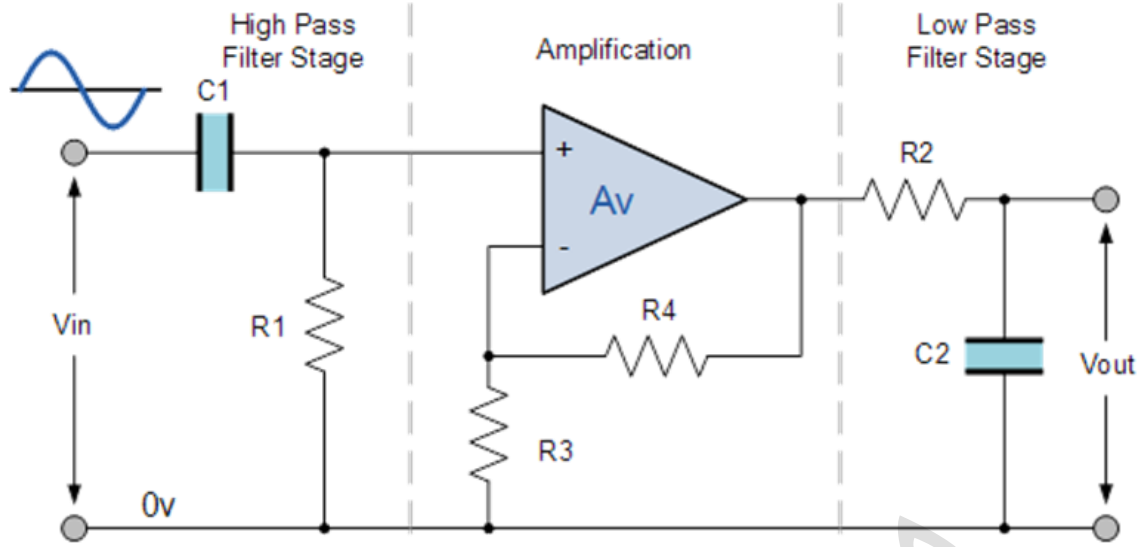
The Active Band Pass Filter is slightly different in that it is a frequency selective filter circuit used in electronic systems to separate a signal at one particular frequency, or a range of signals that lie within a certain “band” of frequencies from signals at all other frequencies. This band or range of frequencies is set between two cut-off or corner frequency points labelled the “lower frequency” ( $f_L$ ) and the “higher frequency” ( $f_H$ ) while attenuating any signals outside of these two points.

Simple Active Band Pass Filter can be easily made by cascading together a single Low Pass Filter with a single High Pass Filter as shown.



Fig(1) Block Diagram of Active BPF

The cut-off or corner frequency of the low pass filter (LPF) is higher than the cut-off frequency of the high pass filter (HPF) and the difference between the frequencies at the -3dB point will determine the “bandwidth” of the band pass filter while attenuating any signals outside of these points. One way of making a very simple Active Band Pass Filter is to connect the basic passive high and low pass filters we look at previously to an amplifying op-amp circuit as shown.



Fig(2) Active Band Pass Filter Circuit

frequency	Vout	Vin	Gain (Vout/Vin)	20logGain	T=1/f
100HZ					
1KHZ					
2KHZ					
3KHZ					
5KHZ					
10KHZ					

### Discussion

Q1\ where active band pass filter are used?

Q2\ how many the components used of this experiment ?

Q3\How can maded a simple **Active Band Pass Filter** ?