PART 2

For the LP re-synthesised signal, I took a10 vector computed in the previos code, which displayed the following: (some sections are shown to be run in matlab because of a certain error in octave for which I have not found a solution yet):

Error

```
>> as2_Q1B_a

error: Invalid call to mag2db.  Correct usage is:

 -- Function File: DB = mag2db (MAG)
error: called from
    print_usage at line 91 column 5
    mag2db at line 44 column 5
    as2_Q1B_a at line 131 column 1
```

a10:

```
>> a10

a10 =

  Columns 1 through 10

    1.0000   -0.9321    0.1533    0.2343   -0.2413    0.1519   -0.2080    0.0971    0.0897   -0.2327

  Column 11

    0.1048
```

Ideal pulse train code:

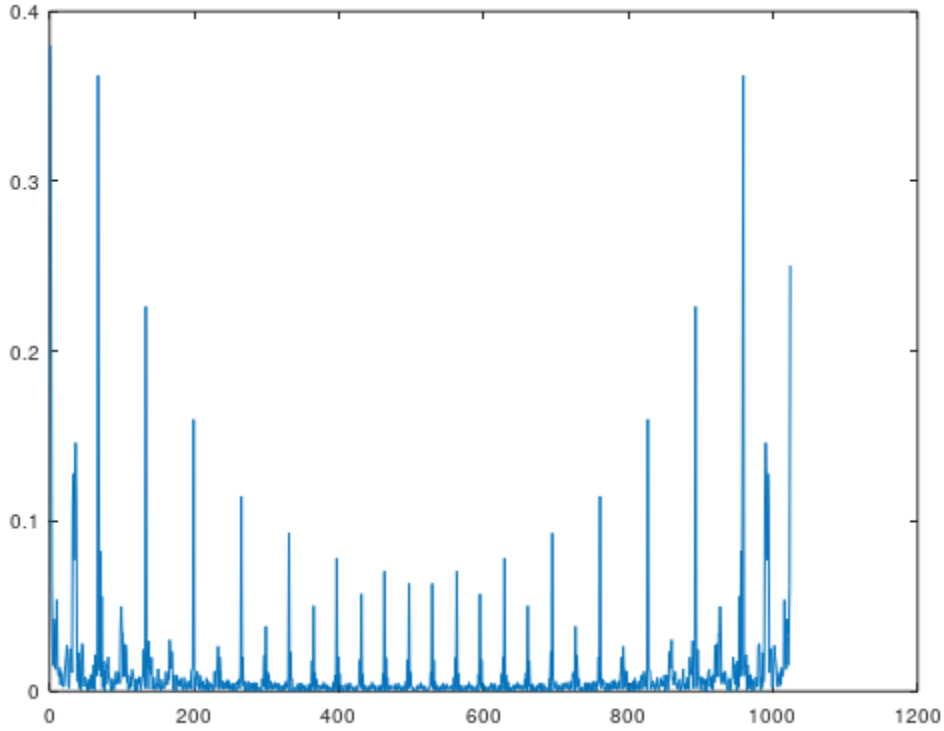
```
iter = floor(fs/f0);

for i= 1:iter:4000
  imp(i) = 1;
end
```

Code for computing real cepstrum:

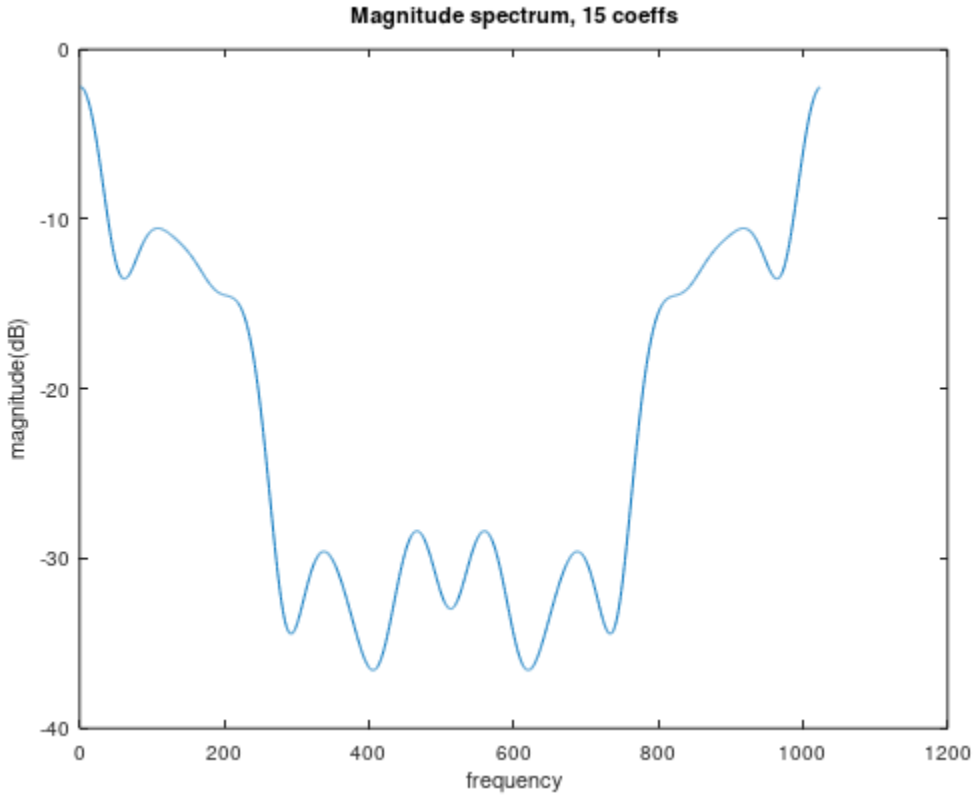
```
%Hamming Window
tham = 30e-3*fs;
ham = hamming(tham);

x = abs(fft(y(100:tham+100).*ham, 1024));
dur = 1024;
ffty = abs(fft(y, dur));
Cep = log(ffty);
cep = real(ifft(Cep));

plot(cep);
```

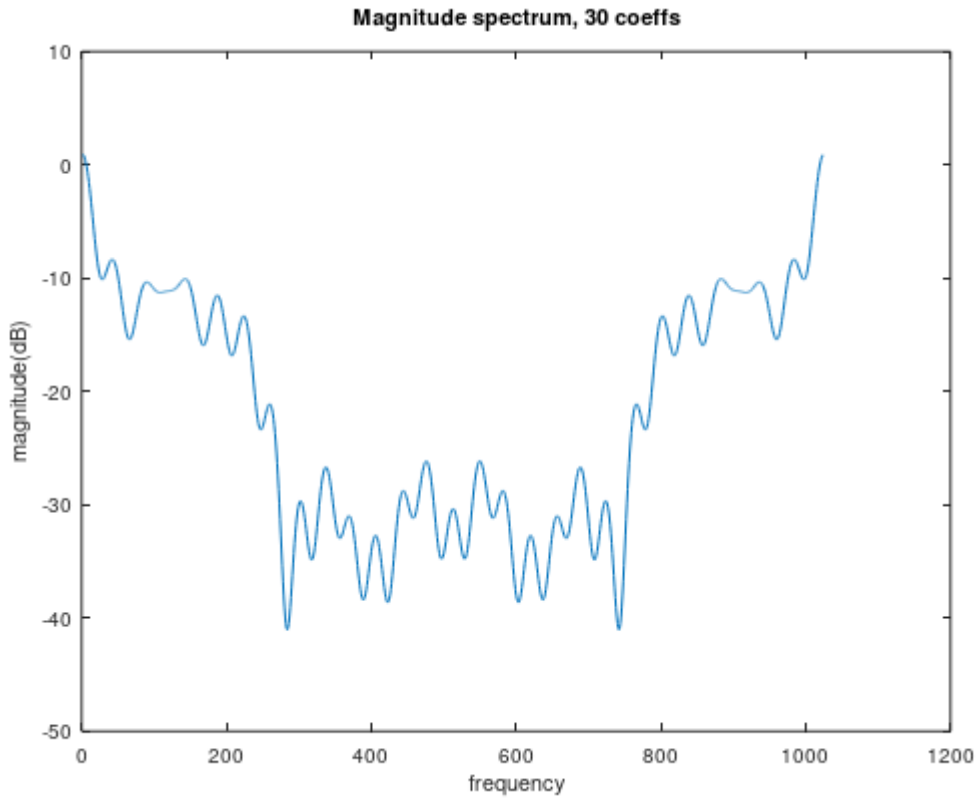
(windowing has been done at a random location, from t=100 samples)

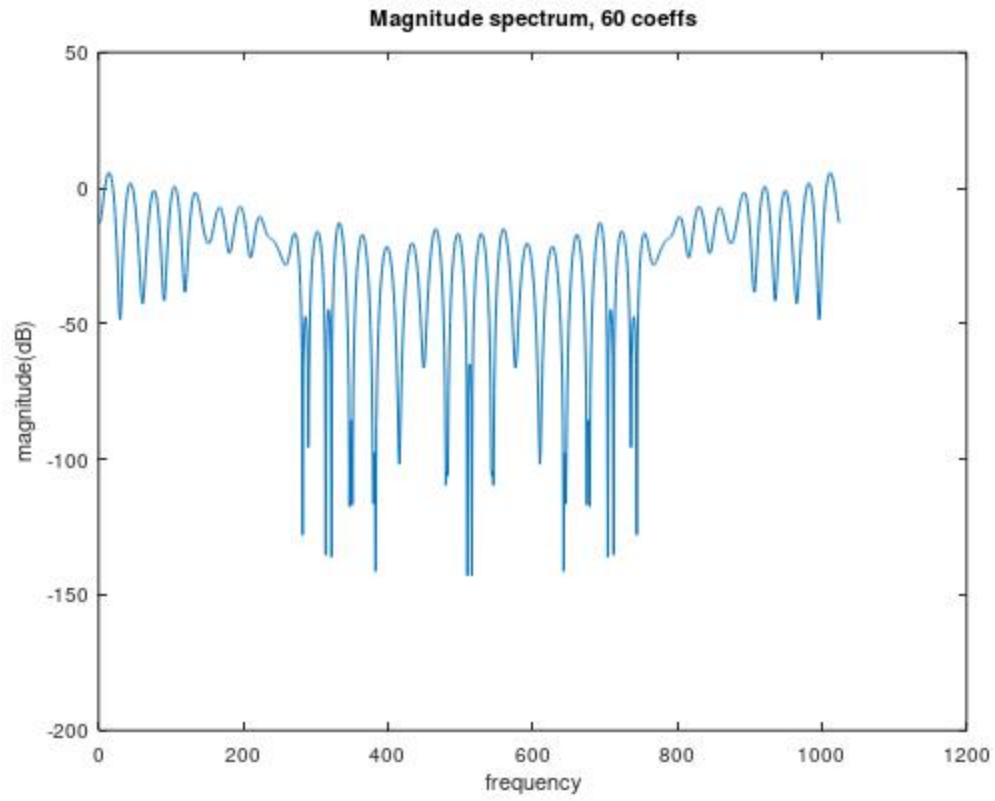
Plot



Cepstral magnitude spectrum:

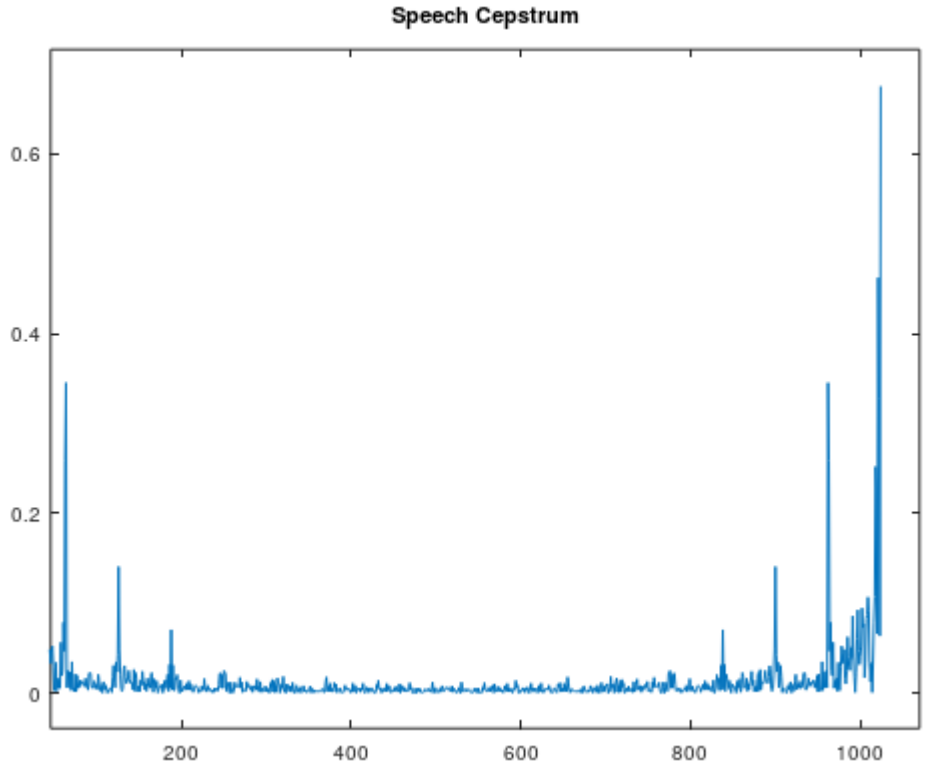


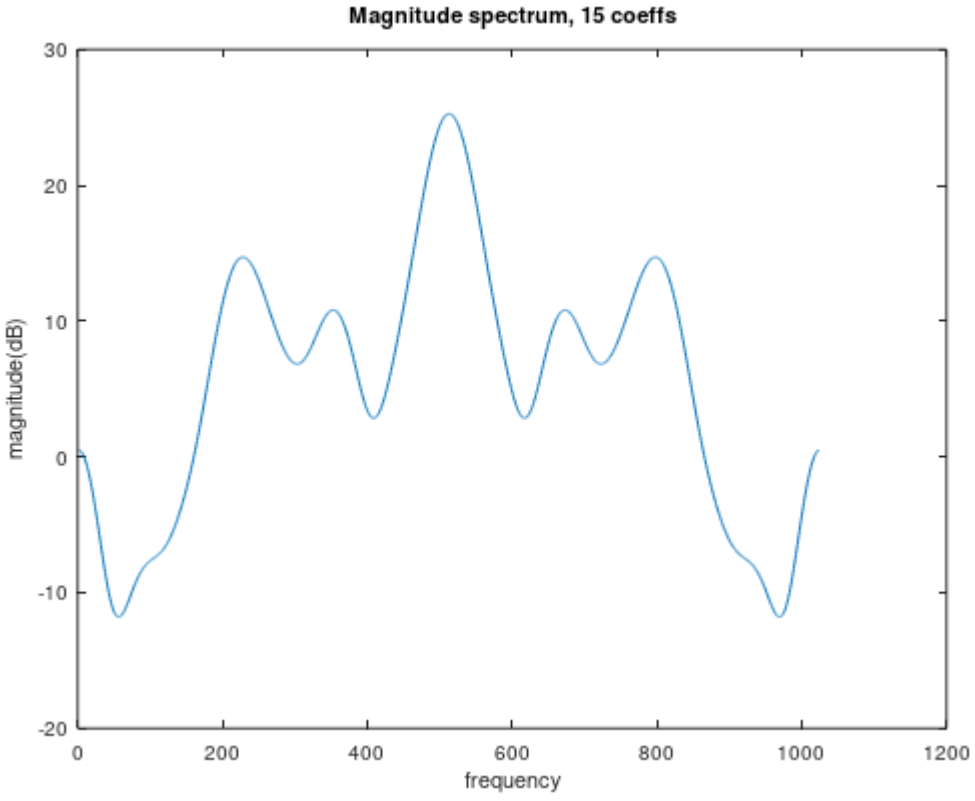


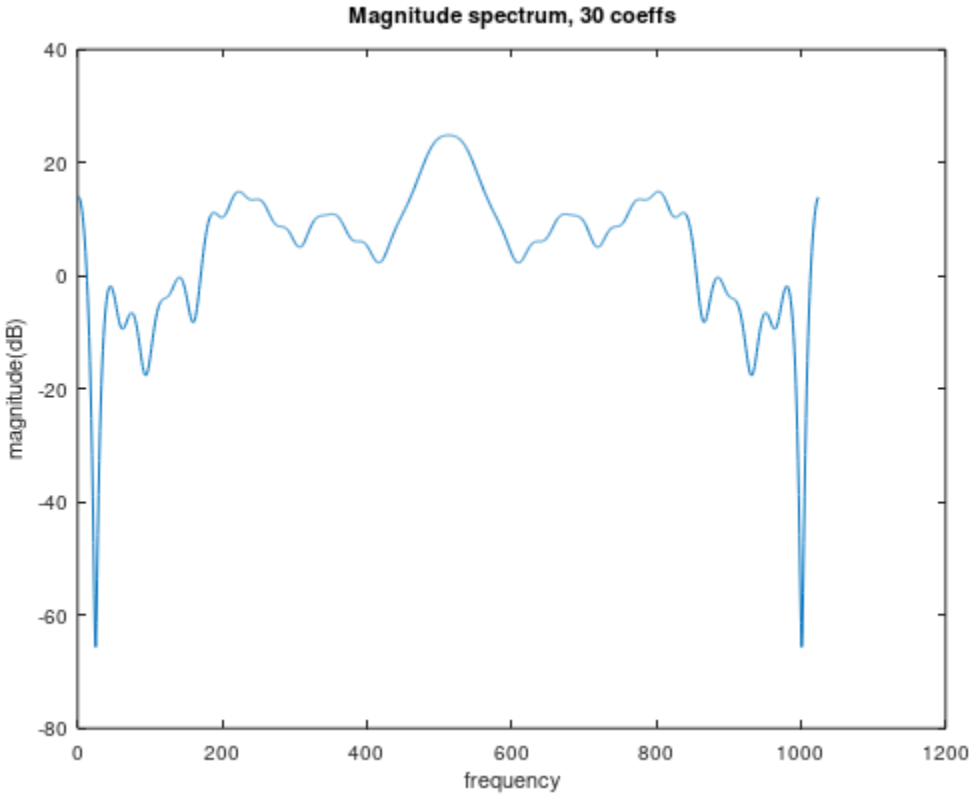


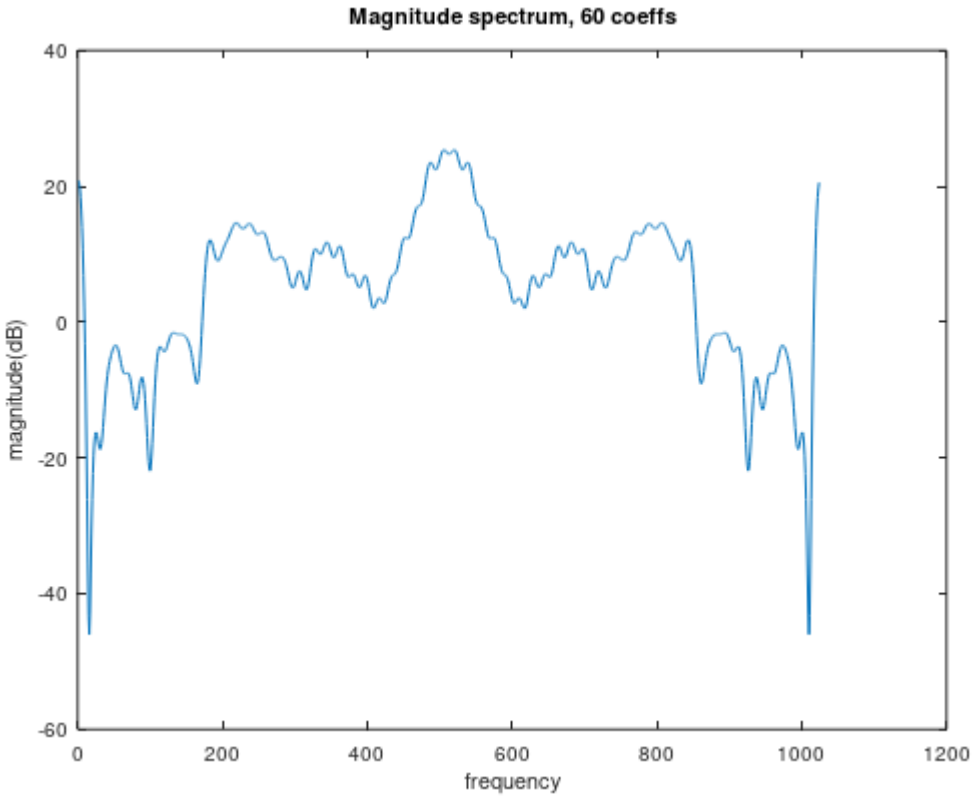
From these it is evident that the magnitude spectrum gets more accurate until a certain no of coefficients however it its more errorenous when the coefficients are increased too much.

Performing cepstral analysis of the actual sound ‘a’

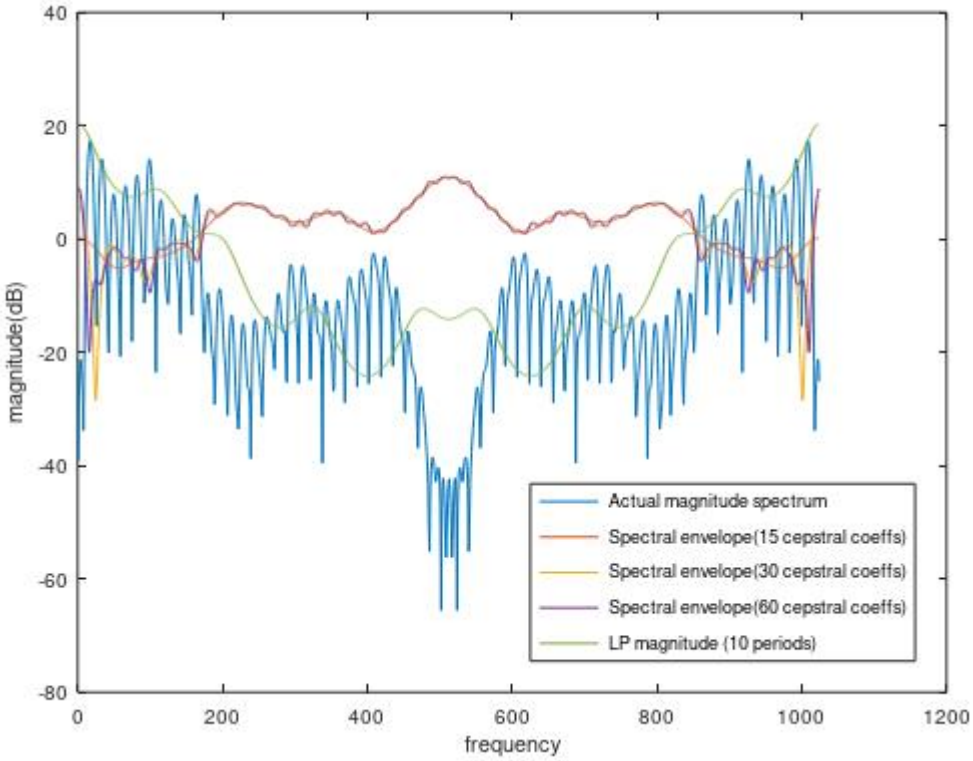








As compared with the LP spectrum



The plots of other phones are published with their individual codes.