**DSP ASSIGNMENT -2**

**III ECE ‘ B’ SECTION (2019-20)**

1. DIFFERENTIATE ANALOG AND DIGITAL FILTERS
2. HOW DOES AN LTI SYSTEM BEHAVE AS FREQUENCY SELECTIVE FILTERS
3. WHAT ARE FIR FILTERS?
4. WHAT ARE THE ADVANTAGES OF FIR FILTERS?
5. WHAT ARE THE DISADVANTAGES OF FIR FILTERS?
6. WHAT IS LINAR PHASE CHARACTERISTIC?
7. DEFINE PHASE DELAY & GROUP DELAY
8. WHAR ARE THE CONDITIONS TO BE SATISFIED FOR CONSTANT PHASE DELAY IN LINEAR PHASE FIR FILTERS?
9. DETERMINE PHASE & GROUP DELAY FOR THE GIVEN FREQUENCY RESPONSES OF DIGITAL FILTER
10. H($e^{jw}$ )=(0.7+0.6cos$ ω$ -0.9cos2$ω$ )$e^{-j7.5w}$

ii) H($e^{jw}$ )=(0.4+0.7cos2$ ω$ -0.5cos4$ω$ )$e^{-j(0.3π+4ω)}$

1. INDICATE THE MAGNITUDE AND PHASE FUNTIONS FOR LINEAR PHASE FIR FILTERS WHEN
2. N IS EVEN
3. N is ODD.
4. LIST THE VARIOUS DESIGN TECHNIQUES FOR LINEAR PHASE FIR FILTER
5. WRITE THE PROCEDURE FOR DESIGNING FIR FILTER BY FOURIER SERIES METHOD
6. WHAT IS GIBB’S PHENOMENN OR GIBB’S OSCILLATIONS? HOW CAN IT BE REDUCED
7. EXPLAIN THE CONCEPT OF WINDOWING IN FIR FILTER DESIGNING
8. WHAT ARE THE DESIRED CHARACTERISTICS OF FREQUENCY RESPONSE OF WINDOW FUNCTION?
9. COMPARE : i) RECTANGULAR & HANNING, ii)HANNING & HAMMING , iii) HAMMING & , BLACKMANN , iv)HAMMING & KAISER
10. WRITE NOTES ON KAISER WINDOW
11. DESIGN A FIR LOW PASS ILTER WITH CUTOFF FREQUENCY 2KHZ AND SAMPLING FREQUENCY 6KHZ WITH 9 SAMPLES OF HANNING WINDOW
12. DESIGN A FIR IDEAL HPF WITH N=7 , WITH FOLLOWING SPECIFICATIONS

$H\_{d}$($e^{jw}$ )= 1 ; $π/4\leq $|𝟂|≤π

 =0; |𝟂|<$\frac{π}{4}$ USING HAMMING WINDOW

1. DESIGN A FIR BAND DESIGN FILTER WITH N =11 WITH FOLLOWING SPECIFICATIONS

$H\_{d}$($e^{jw}$ )= 1 ; $\frac{2π}{3}\geq $|𝟂|≤$\frac{π}{3}$

 =0; OTHERWISE USING BARLETT WINDOW

 **LAST DATE FOR SUBMISISSION: 26/8/2019**

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