Reg.No: | | | | | | | |

SNS College of Technology, Coimbatore-35.
(Autonomous)
B.E/B.Tech Internal Assessment - II
Academic Year 2023-2024(Even)
Fourth Semester
Electronics and Communication Engineering
19ECB212 – Digital Signal Processing

A

Time: $1^{1/2}$ Hours **Maximum Marks: 50**

Answer All Questions

PART - A (5 x 2 = 10 Marks)

		CO	Blooms
1.	Compare Butterworth and Chebyshev type I Filters	CO2	Und
2.	Outline the properties of Chebyshev type I filters.	CO2	Und
3.	List the advantages and disadvantages of FIR Filters?	CO3	Ana
4.	Define Gibbs Phenomenon.	CO3	Rem
5.	What are the conditions to be satisfied for constant phase delay in Symmetric linear phase FIR filters?	CO3	Rem

PART – B (2 x 13 = 26 Marks) (1 x 14 = 14 Marks)

				CO	Blooms
6.	(a)	Construct DF-I and DF-II realization of the system described by the equation. $y(n)=0.75\ y(n-1) - 0.125\ y(n-2) + 6\ x(n) + 7\ x(n-1) + x(n-2)$	13	CO2	App
		(or)			
	(b)	Explain the design procedure for Chebyshev Filter.	13	CO2	Und
7.	(a)	Analyze the Magnitude and Phase Spectrum using Linear Phase Characteristics of FIR Filter for the Sequence $h(n) = \{1,1,1,1,1\}$	13	CO3	Ana
		(or)			
	(b)	Build a linear phase FIR lowpass filter using rectangular window by taking **9** Samples of window sequence and with a cutoff frequency of **1.2 rad/sample.**	13	CO3	App

8.	(a)	Construct a linear phase FIR highpass filter using hamming window with a cutoff frequency ω_c**=0.8π rad/sam** and **N=7.**	14	CO3	App
		(or)			
	(b)	Explain the design procedure for FIR filters using windowing techniques.	14	CO3	Und
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Abbreviations:

CO – Course Outcomes; **Rem-** Remembering; **Und –** Understanding; **App –** Applying; **Ana –** Analyzing; **Eva –** Evaluating; **Cre** - Creating