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

SNS College of Technology, Coimbatore-35.
(An Autonomous Institution)
B.E/B.Tech- Internal Assessment -III
Academic Year 2023-2024 (Even Semester)
Fourth Semester
Electronics & Communication Engineering
19ECB212 – DIGITAL SIGNAL PROCESSING

A

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

Answer All Questions

PART - A (5x 2 = 10 Marks)

		CO	Blooms
1.	Compare fixed and floating point arithmetic	CO4	Rem
2.	What is mean by product quantization error	CO4	Und
3.	What is mean by overflow limit cycle	CO4	Und
4.	Define Multirate DSP	CO5	Rem
5.	List the types of adaptive filters	CO5	Rem

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

				CO	Blooms
6.	(a)	Elaborate quantization noise, coefficient quantization error and product quantization error	13	CO4	Ana
		(or)			
	(b)	Discuss in detail about truncation and rounding.	13	CO4	Ana
7.	(a)	Consider discrete time signal x(n)={1,-1,1,-1,2,-2,2,-2,3,-3,3,-3}. Determine the downsampled version of the signal for the sampling rate reduction factors. a) D=2, b) D=3	13	CO5	App
		(or)			
	(b)	Consider discrete time signal x(n)={1,-1,2,-2}. Determine the upsampled version of the signal for the sampling rate multiplication factors. a) I=2, b) I=3	13	CO5	App
8.	(a)	Make use of a neat diagram and explain in detail about DSP architecture.	14	CO4	Ana
		(or)			
	(b)	Explain in detail about adaptive filters and applications of adaptive filtering to equalization.	14	CO5	Ana

Abbreviations:

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