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SNS College of Technology, Coimbatore-35.
(An Autonomous Institution)
B.E/B.Tech- Internal Assessment -III
Academic Year 2022-2023 (Even Semester)
Fourth Semester
Electronics & Communication Engineering
19ECB212 – DIGITAL SIGNAL PROCESSING

B

Time: 1^{1/2} Hours

Maximum Marks: 50

Answer All Questions
PART - A (5x 2 = 10 Marks)

			CO	Blooms
1.		Define Radix number system.	CO4	Rem
2.		List the formats to represent fixed point.	CO4	Rem
3.		Define dead band.	CO5	Und
4.		What is mean by upsampling and downsampling?	CO5	Und
5.		Define adaptive filters.	CO5	Und
PART – B (2*13=26 Marks) (1*14=14 Marks)				
			CO	Blooms
6.	(a)	Discuss in detail about truncation and rounding.	13 CO4	Und
		(or)		
	(b)	Explain in detail about fixed point and floating point representation	13 CO4	Und
7.	(a)	Consider discrete time signal $x(n)=\{1,2,3,4,5,6,7,8,9,10,11,12\}$. Determine the downsampled version of the signal for the sampling rate reduction factors. a) $D=2$, b) $D=3$, c) $D=4$	13 CO5	Ana
		(or)		
	(b)	Write short notes on sampling rate conversion by a rational factor and applications of multirate DSP.	13 CO5	App
8.	(a)	Elaborate limit cycle due to product round off error, round off noise power, limit cycle oscillation due to overflow in digital filters.	14 CO4	Ana
		(or)		
	(b)	Consider discrete time signal $x(n)=\{1,2,3,4\}$. Determine the upsampled version of the signal for the sampling rate multiplication factors. a) $I=2$, b) $I=3$, c) $I=4$	14 CO5	Ana

Abbreviations:

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