



VIT

Vellore Institute of Technology
(Deemed to be University under section 3 of UGC Act, 1956)

REG.NO.:

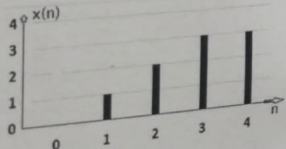
SCHOOL OF ELECTRICAL ENGINEERING
CONTINUOUS ASSESSMENT TEST - I
WINTER SEMESTER 2025-2026

SLOT: C1+TC1+TCC1

Programme Name & Branch: B. Tech EIE
Course Code and Course Name : BAEIE101, Signals and systems
Faculty Name(s) : Prof. Amutha Prabha N
Class Number(s) : C1+TC1+TCC1
Date of Examination : 29/01/26
Exam Duration : 90 minutes Maximum Marks: 50

General instruction(s):

- Answer All Questions.
 - M - Max mark; CO - Course Outcome; BL - Blooms Taxonomy Level (1 - Remember, 2 - Understand, 3 - Apply, 4 - Analyze, 5 - Evaluate, 6 - Create)
- Course Outcomes:
- CO1: Perform signal transformations on continuous and discrete - time signals and systems.
CO2: Apply convolution integrals and convolution sums to obtain response of LTI systems.
CO3: Apply frequency domain techniques to obtain steady state response of the continuous and discrete time LTI system.

Q. No	Question	M	CO	BL
1	Trace i) $x[n-2]$ ii) $x[3n]$ iii) $x[n/2]$ iv) $x[-n]$ v) $x[-n+2]$ 	10	CO1	3
2a	Determine the given signals are odd or even	5	CO1	3
2b	i) $x(t) = e^{-2t}$ ii) $x(t) = 5e^{-2j\pi t}$ Determine the signal is Energy or Power for $x(t) = t u(t)$	5		
3	Determine whether the given system $y(t) = x(t-3) + x(3-t)$ is Linear, dynamic, non-causal, time variant and stable	10	CO1	2
4	Convolve the signals $x_1[n]$ and $x_2[n]$ using the graphical convolution method: $x_1[n] = \{4 \ 3 \ 2 \ 1\}$ $x_2[n] = \{2 \ 3 \ 2 \ 1\}$ The signals start at $n=0$.	10	CO2	3
5	Explain how signals are reconstructed using sampling theorem	10	CO3	4

$$\frac{8T^2}{24} = \frac{2T}{84}$$